

Developing an Indicant: An Epistemic Landform, Agriculture & Water Resource Assessment to help Courts determine Land-use Conflicts

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Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge, it contains no material previously published or written by another person, except where due reference is made in the text.

Neil Matthew Sutherland



December 2023

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Abstract

Litigated land-use conflicts are expensive, lengthy, and complex. They are mostly highly technical, and courts often seek opinion-based help from experts. Whilst all experts must comply with rigid rules for preparing evidence, they must also collect adequate data on which to base their opinions. Here there is an inherent tension: even in specialist environmental jurisdictions, courts might be unable to recognise the suite and quality of data required to build a sound opinion. In the absence of a guide to the required data and its quality, decisions risk being influenced by the theatre of the presentation – the performance in court, rather than the epistemic substance of the underpinning assumptions, information, data and assessments.

This work examines the hypothesis that expert scientific land capability evidence fails to help the court when an epistemic substance of the underpinning assumptions, information, data and assessments is lacking.

This research is a first step in providing courts, adjudicators or any other assessors with a scientifically based ‘indicant’ system in order to:

- identify critical indicators and attributes relating to the assessment of landform, agricultural and water resources,
- enunciate critical indicators and attributes of data sufficiency so that evidence can achieve minimum standards of objectivity, sufficiency, completeness and analysis,
- employ those indicators and attributes to objectively compare the substance of assumptions, information, data and assessments in five land-use conflicts between 1999 and 2020 in the Australian jurisdictions of Queensland and New South Wales; and
- rank evidence.

To test the thesis and validate the ‘indicant’ system, four recognised court experts, together with a third-year undergraduate student in Agricultural Science, were briefed with case materials and asked to use the Indicant. These materials were from three additional legal matters between 2011 and 2017, also in Queensland and New South Wales.

The results indicate that, for all eight land-use conflicts, there were shortfalls in the datasets for all participating parties. Statistical analyses were completed qualitatively, through a User Engagement Survey, and quantitatively, using descriptive statistics and Kendall’s Coefficient of Concordance (W).

Within individual areas of expertise, the validation results were not statistically significant. However, the summed results indicated that in all three validation matters, all four validators were in strong

agreement under all six conditions ($W = 1$, $p < .05$, $df = 1$.) The p-value in all three data sets ($p < .05$) demonstrated that there was a significant statistical difference amongst the ranked scores. What this means is that all validators came to the same outcome irrespective of their areas of expertise. This means that the indicant – an objective, replicable method for assessing the relative substance of each expert's landform, agricultural and water resources evidence – dominates the assessment, and not the assessor.

Providing that a number of limitations are understood, the research has shown that:

- an indicant, using critical indicators and attributes in the areas of expertise tested, can be used to objectively compare the assumptions, information, data and assessments underpinning expert evidence,
- the comparisons may be ranked, because the undergraduate student validator yielded the same outcome as the experts, the ranking could be used by others with limited expertise; and
- use of the indicant would decrease the time involved in court assessments of expert opinions in land-use conflict cases.

The implications of such an Indicant for the use of court-appointed experts, concurrent evidence and the Joint Expert Process are explored and discussed. The indicant's limitations, identified in the statistical analysis and during the validation process, are documented together with issues for future research.

Public presentation

As part of the Higher Degree by Research requirements, an oral presentation of this thesis was made in public to an audience at the Australian National University's Fenner School and streamed on-line on 14 April 2022.

A recording of the presentation can be accessed at this link: <https://youtu.be/BnFA7YaRBfI>

A copy of the presentation can be accessed at this link: https://prezi.com/p/5hiyfug_h3la/?present=1

List of Abbreviations

AAC	Australian Agricultural Company
ALC	Agricultural Land Classification
ALUM	Australian Land Use and Management Classification system
ANU	The Australian National University
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZSIC	Australian and New Zealand Standard Industrial Classification
ASDI	Australian Spatial Data Infrastructure standard
ASSIST	Adaptive Strategies for Sampling in Space and Time
AVPCC	Australian Valuation Property Classification Codes
BSAL	Biophysical Strategic Agricultural Land
CEC	Cation Exchange Capacity
CIC	Critical Industry Cluster
CSG	Coal Seam Gas
EC	Electrical Conductivity
EPI	Environmental Performance Index
ESP	Exchangeable Sodium Percentage
FAO	United Nations Food and Agriculture Organisation
GDE	Groundwater Dependent Ecosystem
GQAL	Good Quality Agricultural Land
HCM	Hydrogeological Conceptual Model
IAL	Important Agricultural Land
JER	Joint Expert Report
LNG	Liquified Natural Gas
LSC	Land and Soil Capability
LTGM	Long-term groundwater monitoring
MDB	Murray-Darling Basin
MODFLOW	U.S. Geological Survey modular finite-difference flow model
N:P:K	Nitrogen:Phosphorus:Potassium ratio
NSW	New South Wales (NSW)
NSWLEC	New South Wales Land and Environment Court

PAC	Planning Assessment Commission (NSW)
PEC	Planning and Environment Court
QCLNG	Queensland Curtis Liquefied Natural Gas
Qld	Queensland (Australian State of)
QPEC	Queensland Planning and Environment Court
RFM	Regional farmland mapping
RHI	River Health Index
RTP	Australian Government Research Training Program
SAR	Sodium Adsorption Ratio
SCRC	Scenic Rim Regional Council
SEED	Sharing and Enabling Environmental Data
SoE	Statement of Evidence
SSAL	State Significant Agricultural Land
SSJ	Structured Statistical Judgement
TMPA	Tamborine Mountain Progress Association
UES	User Engagement Survey
UPCR	Uniform Civil Procedure Rules
VCL	Versatile Cropping Land
WATQI	Water Quality Index
WPI	Water Poverty Index

Statistical terms employed

df	Degrees of freedom
K	Rating subjects
m	Raters (or validators)
p-value	Probability value
r	Average (Spearman) correlation coefficient
W	Kendall's Coefficient of Concordance

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Introduction

Preamble

The Australian states of New South Wales and Queensland lay claim to the world's oldest specialist land, planning and environment courts. Largely due to the transposition of laws from the United Kingdom, citizens of these states (as well as all other Australian states and territories) expect protection or rights by statutes - the laws of the land - promulgated by their elected representatives in parliaments.

Together with such statutes, much of Australian law has derived from the common law which is made by judicial decision. Thus, when land-use conflicts are litigated, judges apply statutory criteria (with some guidance from court decisions, particularly in relation to the interpretation of statutory provisions) to facts, including facts based on expert opinion.

In the context of the specialist land, planning and environment courts of New South Wales and Queensland, matters heard in these jurisdictions form public interest litigation where silent parties (such as the public good and the receiving environment) can be effectively represented and in essence, similarly protected by the courts. Just as these courts have developed and evolved over time, so too has specialisation in their rules, codes and procedures in terms of their requirements pertaining to expert evidence.

Overview – the research, hypothesis and thesis

This research tests a hypothesis that expert scientific land capability evidence fails to help the court when the epistemic substance of the underpinning assumptions, information, data and assessments is lacking.

The thesis is that a systematic guide or Indicant to critical measures and attributes relating to the assessment of landform, agricultural and water resources could help improve the efficiency and reliability of court processes and decisions in land-use conflicts.

The research firstly summarises the current literature findings in three principal research areas: land-use conflict, land capability assessment and the place and treatment of expert evidence in courts. Drawing these together, it then describes the conceptualisation and development of an Indicant to assist in ranking expert evidence, based on defined, epistemic qualities.

Its focus is the application of agricultural and environmental science to land-use conflicts, predominantly in eastern Australia in jurisdictions that are under statutory and common law. Where it examines the practice of environmental law, it does so at the institutional intersection of science and

law: in the derivation, adducing and presentation of scientific expert evidence for litigation. This intersection was identified by Golan (2009)¹ as one that has been long overlooked by science and law.

So, an ‘indicant’ – an objective, replicable method for assessing the relative substance of each expert’s landform, agricultural and water resources evidence – was developed in the context of land-use conflicts and the use of contentious expert evidence. It was based on an understanding of expert evidence in the legally-progressive Australian jurisdictions of New South Wales and Queensland together with:

- the current literature – relating land capability descriptions to land-use conflicts and seemingly intractable issues with scientific evidence;
- research similarities and gaps in the current thinking around progressive process-based evidence and an increasing awareness of data sufficiency requirements;
- the research goals – relating evidence to increasingly valuable landform, agricultural and water resources;
- a conceptual process that would help to fulfill those evidentiary and sufficiency requirements, using a function or Indicant;
- a method developing, testing and validating that Indicant; and
- the results of using the Indicant to retrospectively examine eight (already determined) legal matters, also in the jurisdictions of New South Wales and Queensland.

Thesis structure

This chapter, in introducing the thesis and identifying the problem, establishes that land-use conflicts resulting in litigation can be expensive, lengthy, complex and highly technical. When a court has insufficient knowledge on a subject, it seeks opinion-based help in the form of expert evidence. Whilst all experts must comply with rigid rules for preparing evidence, a scientific expert must also collect adequate data to form their opinion, otherwise their analyses and evaluation may be flawed. In turn, this can mislead a court into errors and may increase costs by wasting the court’s time.

The inherent tension between data issues being the purview of the same scientist whose expert opinion is being sought was also recognised. Thus, even in experienced specialist environmental jurisdictions, courts might be unable to recognise issues that underpin assessments being relied upon. Such assessments may be of little worth, no value at all or even worse, flawed to the extent that they mislead the court. It was postulated that courts, not being equipped with scientific skills, were unable to distinguish valid and complete data from invalid or incomplete data – good from bad. Thus, there was

¹ Golan, T. (2009). *Laws of men and laws of nature: the history of scientific expert testimony in England and America*. Cambridge (Massachusetts): Harvard University Press.

a risk that decisions could turn on the theatre of the presentation, as opposed to the epistemic substance of the evidence.

Chapter 2's literature review draws on three principal strands of research: land-use conflict, land capability assessment and the place for and treatment of expert evidence in court. The identified research gaps and similarities has a direct lineage with the limitations of the relevant research variously cited.

Firstly, in respect of land-use conflicts, the gaps and similarities are expressed by:

- Golan – as to the history of expert evidence in land-use conflict, progressive procedural reform and the concept of an institutional intersection of science and law;
- Edwards – as to stakeholder engagement;
- Kennedy – as to the 'privileging' of scientific expert evidence limiting participant opportunities and the need for stakeholders to be equipped with a decision-influencing ability; and
- Valles – as to the need to couple science and ethical values.

Secondly, in terms of land capability assessment and the reliable expression of land capability indicators and attributes, the research gaps are expressed by:

- Barnett – as to a standardised approach to groundwater modelling;
- Bennett – as to the need for structured soil security frameworks;
- Droop and Matthew – as to the vulnerability of mass survey techniques to uncertainty and consequential error;
- Hunter and Foody – as to data quality and mapping accuracy;
- Kalf – as to a definition of groundwater mining;
- McKenzie – as to the minimum standards for surveying land resources;
- Mulvey – as to agricultural practice and carbon storage and sequestration; and
- Withers and Vipond – as to the calculation of minimum values of streamflow discharge and maximum groundwater yield and drawdown.

Lastly, regarding the difficulties in measuring expert evidence and its treatment by courts, the research gaps and similarities are expressed by:

- Andretta – as to the need for a structured statistical judgement code for court-appointed experts to allow the admissibility of expert evidence to be judged "on the reliability and validity of empirical observations";
- Edmund – as to the epistemic versus performative quality of expert evidence and the need for procedural reform based on empirical research (as opposed to '*junk*' science);

- Faigman – as to the opposing forces of practicing scientists and lawyers, the gap between the scientist and the scientific expert and the concept of helpfulness;
- Haack – as to the need for practical guidance to assist judges and lawyers in the questions to be asked of expert evidence;
- Perillo – as to the use of statistical analysis in the measurement of adversarial allegiance;
- Prefontaine – as to the inconsistent application of evidentiary standards to expert evidence; and
- Selby – as to the repelling nature of litigation to numerical ratings.

It is in this context then, at the confluence of these three strands of research, that the principal, collective research gaps are identified. These are where:

- incorrect or insufficient data is afforded preference because of the privileged position of the scientific expert;
- in a land-use conflict, short-term planning horizons are being inaptly compared with long-term planning needs;
- the data reliability underpinning the land capability assessment for the activity is at the wrong scale;
- the data consistency and sufficiency are inappropriate for the activity being assessed; and
- the experts' degree of data certainty does not match what the court needs.

It is postulated that, whilst the courts have adjusted rules and procedures to tailor and guide expert evidence to better suit the courts' requirements, scientific experts have not yet reciprocated. Experts have not yet assisted courts in respect of what is, effectively, 'process-based evidence' as identified by Andretta (2019) and Faigman et al (2014).

Chapter 3 explains the research methods and defines land capability as a function of land quality, tenure and water supply. Each of these primary indicators displays characteristics, or attributes, that critically combine to describe how capable a site is, what capacity it might have, and how sustainable a proposed use of its resources could be. An exercise is completed to identify critical landform, agricultural, water resource and data indicators and attributes (or criteria). A method is then proposed to develop, test and validate a function, or an 'indicant', to match the critical criteria to land capability assessments. In a survey format, the indicant poses questions allowing the user to score information and data underpinning an assessment where it can be ranked against other assessments.

Chapter 4 describes the research results whereby it is determined that an indicant containing critical indicators can objectively compare the assumptions, information, data and assessments underpinning

expert evidence, that those comparisons may be ranked, and that the ranking can be successfully used by others with limited expertise.

Chapter 5 discusses the indicant's conceptualisation, its first iteration, and its application. It examines its mechanics, its limitations, and the results from its use both in evaluation and validation by others. Following the validation, its ruggedness at the hands of experts and third-party assessors is assessed and discussed.

As a result of the statistical analyses, possible refinements to the Indicant are advanced. To assist the courts, parties and communities engaged in land-use conflicts, an examination is then made of how the Indicant might be readily accessed and maintained on an ongoing basis.

The issue – what is the problem?

Australian courts give communities the opportunity to resolve land-use conflicts based on fact and impartial judgment, free of political activity or interference. At the centre of their consideration of the issues in any land-use conflict is the provision of clear, concise and well-reasoned evidence from witnesses of opinion or experts. Thus specialist New South Wales and Queensland land, planning and environment courts are often required effectively to contrast or assess complex (often competing) scientific evidence.



Plate 1. Barristers appearing during a matter in the Queensland Planning and Environment Court (Photograph by author, 2019).²

² Barristers of the Queensland Bar (left to right) Danny Gore KC, John Ware, Ben Job KC, Andrew Skoien, Mitchell Batty and James Dillon in a rare image taken during a trial inside Queensland's Planning and Environment court. In response to a

When such courts have insufficient information or knowledge in any subject, they seek opinion-based help from qualified and/or experienced individuals in the form of expert evidence. Whilst an expert is usually required to produce evidence under rigid rules, a scientific expert also needs to collect and analyse adequate data to assess the issues in the matter, evaluate the analysis and then synthesise a view that forms their expert opinion.

Whilst the definition of experts and the rules they are duty-bound to follow may vary by jurisdiction, a common problem is of experts opining based on insufficient, imprecise or incorrect data. Potentially, this misleads the court into making errors during the identification of the law, the facts, and the application of the law to the facts as found.

However, when parties compete in litigation, an opponent should be able to readily identify where data is insufficient, imprecise or incorrect. When an opponent does this effectively, it should lead to a rejection, either totally or at least partially, of the opinion based on such data. The classic case for the rejection of an expert opinion by a court is that the factual basis for the opinion is not established. The genuine difficulty arises when an opponent fails sufficiently to challenge the facts or data on which an opinion is based. Then it becomes difficult for the adjudicator or judge to determine which of two competing sets of data is correct, or to determine the true position if there is competing evidence about the factual basis for the opinion evidence.

Even though specialist environmental jurisdictions have developed extensive subject knowledge, their knowledge of data issues is inherently constrained because, in scientific terms, such issues are the purview of experts. The court's inability to independently recognise data insufficiency generates an inherent tension that cannot be resolved. In short, the court is not an expert, and the risk is that its decision may turn on the theatre of the presentation – the performance – as opposed to the epistemic substance of the underpinning assumptions, information, data and assessments. Philosophically, this relates directly to the facts themselves or to their degree of validation.

If it is in the courts' interests (and, by extension the community's interest) to see land-use conflicts resolved in the most fair and objective manner possible, then the science matters. The corollary of

question during cross-examination in the matter of *Clermont Quarries Pty Ltd v Isaac Regional Council & ECL Dalby Pty Ltd & Another*, digital material was requested that was not *in evidence* but in the witness' possession. A computer was duly handed-up, first to the bench where it was examined by the Judge and then down to the bar table for examination, causing some consternation amongst the Barristers about "how to drive it?". His Honour remarked that someone "should take a photo" and permission was duly sought.

this is that data errors with the potential to mislead the court will give rise to potential misjudgements, which in turn may result in inappropriate land use allocation and/or environmental harm.

Additionally, such data errors waste court time – which the community ultimately pays for – and increases costs for all parties. The costs increase incrementally when the data insufficiencies are not exposed until tested in the witness box or, worse still, when the resulting inappropriate land use allocation and/or environmental harm must be rectified.

So, the problem is this: deficient land capability assessments abet land-use conflicts which may result in harmful mistakes. This thesis argues that courts, and by extension the communities they serve, will be helped by the development of a method objectively to contrast or assess expert scientific evidence in relation to landform, agricultural and water resources. By measuring the substance of underpinning assumptions, information, data and assessments, judiciaries will be better equipped to weigh scientific evidence and rank it using a derived ordinal measure, or a combination indicant. This will help courts to determine which evidence should be preferred in respect of objectivity, sufficiency, completeness and analysis.

The research goals

The research goals in this thesis are to:

1. identify the critical indicators and attributes relating to the assessment of landform, agricultural and water resources relating to expert evidence;
2. further identify critical indicators and attributes of data sufficiency, so that the evidence can achieve minimum standards of objectivity, sufficiency, completeness and analysis;
3. employ those indicators and attributes to objectively compare the substance of the assumptions, information, data and assessments that ultimately underpins the preparation of the evidence;
4. conceptualise and document a function or an indicant to describe the data adequacy supporting the expert evidence; and
5. test and validate the indicant.

These were to be achieved by:

6. examining the strengths and weaknesses of the court processes in resolving land-use conflict by reviewing the literature and comparing case studies;

7. reviewing the role of court-appointed experts, the delivery of concurrent evidence and the joint expert process used in New South Wales and Queensland; and
8. developing comparators and an indicant that allows the objective judicial assessment of landform, agricultural and water expert evidence prepared for litigation.

Thus, the use of such an indicant might allow a court to better weigh scientific expert evidence in respect of objectivity, sufficiency, completeness and analysis to help its determination. In the case of competing experts, the evidence could be ranked and, in the case of the single court-appointed expert, scored. In respect of stakeholder use, the basis of expert evidence could be better examined.

In essence then, it is in combination that the critical indicators and attributes were utilised to provide, in concept, a reliable answer. They were they used to score, comparatively, the information cited in real-world legal matters for a two competing parties. The scores were then compared.

The next chapter is the literature review.

Literature Review

Introduction

This chapter draws on three principal strands of research: land-use conflict, land capability assessment and the place for and treatment of expert evidence in court. The identified research gaps and similarities has a direct lineage with the limitations of the relevant research variously cited here.

Landform, agricultural and water resource science matters because it is in the public interest to see land-use conflicts rapidly resolved in the most fair and objective manner possible. In the introductory chapter, a concept was advanced that courts would be helped by a method to either contrast competing expert evidence or assess court-appointed evidence in relation to agricultural and environmental science. The essential features were:

- a court's reliance on expert opinion evidence in the absence of sufficient information or knowledge;
- a scientist's obligation to collect and analyse adequate data, evaluate that analysis and synthesise a view before forming an opinion;
- the scientific expert's duty to opine based on sufficient, precise and correct data; and,
- a court's difficulty in assessing the merit of an opinion when the data upon which it is based is insufficient, imprecise or incorrect.

The literature review that forms this chapter examines the current state of knowledge concerning:

- procedures available for describing landforms, agricultural features and waters;
- the nature and causes of land-use conflicts and jurisdictional responses; and
- the characteristics and role of specialist, scientific expert evidence.

Because of the broad nature of the scientific application of landform, agricultural and water resource descriptors, land-use conflicts and different approaches to expert evidence, the review is necessarily broad ranging. In NSW and Queensland, it describes different land evaluation and surface and groundwater assessment methodologies. It links socially-relevant science to the ethics of expert evidence and their jurisdictional responses. As such, this chapter does not aim to integrate these subjects but to gather the common threads within the identified descriptive procedures.

It is in this context then, that these procedures have informed the critical criteria for this research. These are detailed in the next section. It is the subsequent examination of these critical criteria that allows evidence prepared for litigation to be assessed and compared.

Procedures available for describing landforms, agricultural features and waters

For lawyers in the common law system, each case has a degree of unpredictability due to its own distinctive features and challenges, which may only be exposed when the evidence is tested and deconstructed in an adversarial manner. Fortunately, the subject of the litigation (the site) and the receiving environment in which it lies (the wider locale) will exhibit unique characteristics. To inform litigation, landform features, agricultural capabilities, surface waters and groundwaters can be predicted, assessed, measured and mapped within a range of certainty, provided that the underpinning data quality is known.

Understanding these concepts of data quality, confidence and certainty will assist by providing evidentiary context for a judge, jury or adjudicator. In the absence of adequate assessments of those physical features, the project risks for the proponent and the assessment risk for the adjudicator increase. This section examines the literature, procedures and constraints in describing landforms, agricultural features and waters, principally in the Australian states of New South Wales (NSW) and Queensland.

Landforms - surveying soil and land resources

Superseding Gunn et al.'s 1988 Australian 'Blue Book' – Guidelines for Conducting Surveys³, McKenzie et al.'s 2008 text 'Guidelines for Surveying Soil and Land Resources'⁴ (or simply 'the guideline') provided further, refined definitive assessment and evaluation methods and rules for assessing landforms, their geomorphology, hydrology, vegetation and land use mapping. The methods cited in this research (in Chapter 3) are largely drawn from the guideline.

Within a comprehensive, repeatable and readily comparable framework, McKenzie's important advancement was to conceptualise the landform and its resources in context. For any assessment, understanding a site's position in the landform has a direct bearing on a development proposal's downstream and offsite impacts and their acceptability or otherwise. Thus, it is more often than not that these downstream and offsite impacts become the primary focuses of land-use conflicts.

Even more importantly, the guideline also reflected two significant developing trends. Firstly, it reflected new approaches to land resource assessment offered through the technologies of spatial,

³ Gunn, R., et al. (1988). Australian soil and land survey handbook: guidelines for conducting surveys. Inkata Press.

⁴ McKenzie, N. J., et al. (2008). Guidelines for surveying soil and land resources, CSIRO Publishing.

spectral and digital mapping.⁵ These revolutionised the availability, cost, types, quantity and accuracy of data sets.⁶ Secondly, it reflected a changing rationale whereby the conservation of valuable assets⁷ was to gain increasing stakeholder interest and public importance, and in which analyses adopted what Valles (2019) called a “socially relevant philosophy”.⁸ This is assessed in the next section.

A socially relevant philosophy applied to environmental science

Building on Tuana et al.’s (2012)⁹ work in coupling ethical and epistemic analyses, Valles had previously developed a framework and applied it to two public health case studies. Recognising that “complex socio-environmental problems, such as climate change and biodiversity conservation, are notoriously vexing unique, context-dependent challenges that resist formulation and defy solution”, he developed a new model to jointly analyse the ethical and evidentiary dimensions of two environmental science cases. One case involved ecosystem services payment and the other, a water contamination scandal in the United States city of Flint, Michigan.¹⁰

Valles postulated that:

- socio-environmental problems are inherently complex because of their normative character, as they tend to affect many people who have different and conflicting values;
- there is conflict in what might count as a ‘correct response’, including ethical values about what is just or fair, as well as epistemic values about what is reasonable or warranted; and
- where environmental sciences are not strong in understanding values, the humanities tend to be stronger.

By coupling a scientific approach in the context of ethical values, a more socially relevant outcome could be achieved. The model simply poses four questions:

⁵ Where spatial data comprise relative geographic features, spectral, the radiation wavelength measured for observed target and digital mapping being the collation of data into a virtual image.

⁶ Smith, M. J., et al. (2011). *Geomorphological mapping: methods and applications*. Elsevier.

⁷ McKenzie, N. J., et al. (2008). *Guidelines for surveying soil and land resources*, CSIRO Publishing (p4).

⁸ Valles, S. A., et al. (2019). Coupled Ethical-Epistemic Analysis as a Tool for Environmental Science. *Ethics, Policy & Environment* 22(3): 267-286.

⁹ Tuana, N., Srivier, R. L., Svoboda, T., Olson, R., Irvine, P. J., Haqq-Misra, J., & Keller, K. (2012). Towards integrated ethical and scientific analysis of geoengineering: A research agenda. *Ethics, Policy & Environment*, 15(2), 136–157.

¹⁰ This involved lead poisoning of a municipal water supply and an ethical failure in the application of water quality testing standards.

1. What are the research practices' strengths and weaknesses for evidence gathering and analysis?
2. What are the research practices' ethical strengths and weaknesses?
3. How will the research practices' strengths and weaknesses for evidence gathering and analysis affect ethical issues?
4. How will the research practices' ethical strengths and weaknesses affect evidence gathering and analysis?

For an expert, it is the application of these questions that could assist in forming an epistemic approach to scientific evidence and the execution of his or her duty to a court, coupling the science and the ethics.

An epistemic and ethically coupled approach for experts

The preparation and delivery of expert evidence should have much in common with such an ethically and epistemically coupled approach. These concepts underpin the various jurisdictions' expert rules, where a scientific expert needs to ethically collect adequate data to assess the issues in the matter, evaluate the analysis¹¹ and then synthesise a view¹² that forms his or her expert opinion.

Kennedy (2017)¹³, in her authoritative text *Environmental justice and land use conflict: The governance of mineral and gas resource development*, argues that communities engaged in land-use conflict face marginalising, systemic factors that favour industry interests. The pervading senses of injustice are not confined to the outcomes alone but are further inflamed by governance processes that are perceived to be unfair.

Over the last two decades, the widespread adoption of directional drilling¹⁴ has heralded a new industry in coal seam gas (CSG) production and shale gas (or tight gas, if in sandstone) in Australia and in the United States. This is where relatively thin, previously uneconomic horizontal methane-rich strata could be exploited by directing a drill head along (rather than just through) the target seam itself, significantly increasing the surface area.

These completed bores are then used to deliver additives and water under pressure into the target strata to fracture (or 'frack') the formation to maximise gas production. Thus, in Australia, the

¹¹ The analysis in this case may be in the form of a laboratory or statistical analysis without an evaluation or interpretation.

¹² The synthesis of a view within the preparation of expert evidence follows the evaluation of an analysis as to its significance to the issues in dispute. This then goes on to form the expert's opinion, which is tested by the court.

¹³ Kennedy, A. (2017). *Environmental justice and land use conflict: The governance of mineral and gas resource development*, Routledge.

¹⁴ Bentley, P. J., et al. (2013). Improving hydraulic fracture geometry by directional drilling in a coal seam gas formation. SPE Unconventional Resources Conference and Exhibition-Asia Pacific, OnePetro.

primary area of land-use conflict is currently between agricultural land use and mining for coal seam gas and coal. It is a tripartite competition: farmers and landowners often rely on surface waters and groundwater, especially during periods of drought. Gas producers have claimed their product has a lesser carbon footprint than coal, despite the areal landform disturbance being greater. Farmers fear permanent impacts from both processes. Added to this are the associated contributions to anthropogenic climate impacts from burning the gas and coal.

Relevant to this thesis, Kennedy postulated three significant land-use conflict outcomes:

- the ‘privileging’ of scientific expert evidence limited the opportunities of participants to raise place-based concerns;
- land-use governance arrangements risked eroding participants’ place-attachments; and
- stakeholders need to have the ability to influence decisions.

The first is particularly significant in conflicts involving farmers where land-use capability assessments are often made by assessors or scientists (perceived to be) far-removed from agriculture or day-to-day land management decisions – the implication being that an adjudicator might place expert opinion above site-based experience and traditional practice.¹⁵ The second is particularly true when conflict participants feel that if their existing quality of life is eroded, then staying in that place is no longer palatable (or “just won’t be the same”). The third – stakeholders needing to have the ability to influence decisions – is central to the very essence of stakeholder engagement.

In turn, this reflects the thesis of Edwards (2009)¹⁶ who, in studying the formulation of the Gold Coast Waterfuture Strategy (2007), found that for stakeholder engagement to be successful, trust in the process itself outweighed the project outcomes. Edwards’ and Kennedy’s research each demonstrated that if a stakeholder trusts that a process has presented them an adequate opportunity for engagement and participation, then the land-use conflict may be lessened. It is in this context that the application of landform, agriculture and water resource assessments has become an increasing focus in land-use conflicts, not just because of increasing land values and resource scarcity and competition, but because of an increasing public awareness of environmental stewardship and the impacts of climate change.¹⁷

¹⁵ Therefore, the data must be right, and the expert held to a standard.

¹⁶ Edwards, P. (2009). *Trust: Power and Engagement – Participatory Water Planning on the Gold Coast, Australia*. PhD Thesis. Griffith University, Brisbane, Australia.

¹⁷ Seddon, N., et al. (2020). Understanding the value and limits of nature-based solutions to climate change and other global challenges. *Philosophical Transactions of the Royal Society B* 375(1794): 20190120.

Kennedy's views are valid. In focusing on extractive industries and the deployment of new mining technologies, Kennedy's conclusions match the sentiments expressed by individuals and community groups expressed during conflicts examined in Chapter 3. For the community,¹⁸ concepts of fairness, equal treatment before the law and environmental sustainability were often of greater importance than the individual's personal interest in the conflict. In this context then, if expert evidence is indeed 'privileged', then it should be underpinned by appropriately gathered and analysed data.

A practical starting point in data collection is adopting approaches that have been previously agreed, refined over time, and that the community is familiar with. For soils, the National Soil Strategy is one such approach.

A conceptual soil security framework and the National Soil Strategy

Proffering key nomenclature, Bennett et al (2019)¹⁹ argues that to integrate land management with ecosystem services and environmental, social, cultural and economic imperatives, a conceptual Soil Security framework should be adopted. Bennett provides the following (paraphrased) recommendations to establish a national framework:

- development of an agreed quantitative spatio-temporal framework to estimate the indicator variables locally and over time;
- development of a National Soil Capability Statement at a resolution that is effective across farm, regional and national scales to underpin a National Account for Soil;
- adoption of evaluation strategies of soil condition to inform best soil management, highlighting areas of vulnerability or poor condition;
- reporting the value of the Natural Capital soil asset;
- increasing society's connectivity with the soil by recognising it as one of Australia's greatest national assets;
- creating incentives for private industry and landholders to share their local soil data;
- creating a set of soil-specific best land-management practices at a regional scale; and
- development of financial incentives that reward soil security practices.

¹⁸ For example, see: *Gallo and Williams v Chief Executive, Department of Environment and Resource Management* [2012] QLC 15 where two farmers were found to have been treated differently to their neighbours in respect of irrigation entitlements. A central demand was to demonstrate a need for the water.

¹⁹ Bennett, J. M., et al. (2019). Soil Security for Australia. *Sustainability* 11(12): 3416.

Bennett et al's recommendations resonate. They emphasise the disparity between the normal planning horizon for impact assessments, and soil security and long-term agricultural sustainability. They are entirely different. A normal planning horizon for impact assessments, and the concept of inter-generational equity cited within the precautionary principle,²⁰ are each 25 years. This is related to the typical generational span of human life. Conversely, soil security seeks to make agriculture sustainable for hundreds, if not thousands of years into the future. The ideas of soil sustainability and longevity were developed further by Mulvey and Mulvey (2021)²¹ in linking landforms and agricultural practices to local rainfall deficits. Like Bennett et al, the Mulveys strongly advocated ensuring soil security and practising carbon storage and sequestration. These features were included in a National Soil Strategy, to be implemented in 2022, at significant expense.²²

Thus, there is increasing conflict with and between resource, mining and energy providers, fears that water supplies will be depleted, contaminated or lost altogether and counter-accusations concerning land



²⁰ Akins, A., et al. (2019). The universal precautionary principle: New pillars and pathways for environmental, sociocultural, and economic resilience. *Sustainability* 11(8): 2357.

²¹ Mulvey, P & F (2021). "Ground Breaking - Soil Security and Climate Change" 5th August 2021. ISBN: 9781875703449.

²² National Soil Strategy (2021) <https://www.awe.gov.au/agriculture-land/farm-food-drought/natural-resources/soils>

Plate 2. Farmland at Beegan, Harden, in New South Wales, where an intensive 25,000 head piggery is proposed within a potable water supply catchment. The matter is the subject of litigation in the Land and Environment Court. (Photograph by author, 2020).²³

degradation and pollution because of poor agricultural practice. The import of this is that the application of short-term planning decisions as to the protection of agricultural lands is inappropriate if the long-term sustainability of those lands is reduced or lost. The assessment of this long-term sustainability necessitates the consideration of data that is appropriately targeted, gathered and analysed. For agricultural features within the landform, the genesis and progression of land evaluation schemes are detailed in the next section.

Agricultural features

Land evaluation schemes estimate the potential of the landform to sustain alternative land uses. Such schemes are therefore critically important in land-use conflicts as they can provide an adjudicator with a comparative yardstick between competing uses. Similarly, that yardstick can be used between competing assessments.

Given significant differences in the histories, cultures and development timelines of agrarian societies around the world over the millennia, it is unsurprising that there is no single recognised worldwide standard assessment scheme for agricultural features. That said, the instrument most widely applicable is the United Nations Food and Agriculture Organisation 1976 land suitability scheme,²⁴ which provides the structure and basis for multiple national and regional schemes, approximations and adaptations worldwide.²⁵ Using rules-based classifications to assess the suitability of a regional-scale soil unit for a specific land use or crop, it forms a ‘ready-reckoner’ for agriculturalists and land use planners alike. The scheme was supplemented in 1984 with guidance for rainfed agriculture²⁶ and in 1985 for irrigated agriculture.²⁷

²³ The dispute, between Blantyre Farms and the Cunningham Valley Action Group (CVAG), centres on land capability issues including effluent disposal, geology, hydrogeology, surface water supplies, odour and soils. The claims to be tested include that the land cannot sustain the size and scale of the proposed operation in respect of nutrient balance (both inputs and outputs) and therefore risks downstream degradation. CVAG claims that the land capability assessment presented in support of the application is deficient on multiple counts. Blantyre Farms rejects this.

²⁴ FAO (1976) A framework for land evaluation. Food and Agricultural Organization of the United Nations, Rome

²⁵ It was this scheme that I have been able to readily use in Australia, Israel, Oman and the United Kingdom that (particularly in its form and structure) inspired this research.

²⁶ FAO (1984) Guidelines: land evaluation for rainfed agriculture. FAO Soils Bulletin 52, Rome

²⁷ FAO (1985) Guideline: land evaluation for irrigated agriculture. FAO Soils Bulletin, No. 55, Rome

In Australia, structured assessment of agricultural features can employ the Australian Land Use and Management (ALUM) Classification system.²⁸ The latest version of the classification (version 8 of 2016) links land-use datasets to the Australian Spatial Data Infrastructure (ASDI) standard. As a hierarchical system, the ALUM is directly aligned with two other codes: the Australian Valuation Property Classification Codes (AVPCC) and the Australian and New Zealand Standard Industrial Classification (ANZSIC). Overarching the state systems in Australia, the Commonwealth regulates activities that have (or could have) a significant impact on matters of environmental significance under the Environment Protection and Biodiversity Conservation Act (1999). For litigation purposes, the ALUM classification provides a common basis upon which land uses placed within the following six primary classes can be defined in order of generally increasing levels of intervention or potential impact on the natural landscape:

- Class 1. Conservation and Natural Environments: Land is used primarily for conservation purposes, based on the maintenance of essentially natural ecosystems already present.*
- Class 2. Production from Relatively Natural Environments: Land is used mainly for primary production based on limited change to the native vegetation.*
- Class 3. Production from Dryland Agriculture and Plantations: Land is used mainly for primary production, based on dryland farming systems.*
- Class 4. Production from Irrigated Agriculture and Plantations: Land is used mainly for primary production, based on irrigated farming.*
- Class 5. Intensive uses: Land is subject to substantial modification, generally in association with closer residential settlement, commercial or industrial uses.*
- Class 6. Water: Although primarily land cover types, water features are regarded as essential to the classification.*

Two aspects of the ALUM classification are significant. Firstly, the hierarchical structure allows for the aggregation and separation of related land uses and the addition of levels or classes and relevance at a range of scales, effectively allowing it to be employed at a site level. Secondly, the level of intervention – the degree of modification to the ‘natural’ landscape – is recorded. This can be a vexed issue both for landholders and in land-use conflict, particularly when sites revert to natural systems over time. For instance, when derelict agricultural land reverts to another type of ecosystem over time and becomes protected, where originally it was farming land (such as sugar cane

²⁸ ABARES 2016, The Australian Land Use and Management Classification Version 8, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 3.0 and can be found at this link: https://www.agriculture.gov.au/sites/default/files/abares/aclump/documents/ALUMCv8_Handbook4ednPart2_UpdateOctober2016.pdf

plantation).²⁹ To remedy this problem, any application of a land classification system must be underpinned by an appropriate data set with an acknowledgement of temporal impacts, otherwise land-use conflict is engendered.

New South Wales

At a state level in New South Wales, mapping of agricultural lands and industry clusters has been (and is being) completed for different purposes, through multiple schemes, each with its own limitations. Spatial information databases SEED³⁰ and ESPADE³¹ provide access to publicly available data. Whilst acknowledged within the publicly-held datasets (for example see NSW Department of Primary Industries (2017)³²), such limitations are simply not apparent to the end user. During litigation, unless the limitations are cited during the preparation of expert evidence or exposed under cross-examination, they will go unreported and thus may not be considered by the court.

Whilst visually helpful, mapping and the representation of data on illustrations or diagrams within expert reports, and even more importantly within those specifically prepared for the litigation itself, have potential to mislead a court. In many respects, this potential increases with each iteration of new spatial data sets in what are (often purported to be) ever-clearer modes of delivery.³³ Important authorities on the use and presentation of expert scientific evidence in Australian and British courts include Selby (1984³⁴ and 2010³⁵) and Selby and Freckelton (1989³⁶ and 2009³⁷). Whilst these are examined later, Selby critically links the presentation of numerical datasets to the deployment of visual aids (such as maps) that may increase confidence in the expert evidence.

The land capability schemes are:

²⁹ For example, see: *Planners North v Ballina Shire Council* [2021] NSWLEC 120 - where a bio-banking agreement was entered-into between the parties over former sugarcane land and found by the court to have no basis to support a development on the agricultural land component of the site.

³⁰ NSW Government (2021) <https://www.seed.nsw.gov.au/>

³¹ State of NSW and Department of Planning, Industry and Environment (2021) ESPADE soils data <https://espade.environment.nsw.gov.au/>

³² NSW Department of Primary Industries (2017) *Agricultural Land Use Mapping Resources in NSW - User's guide*. February 2017 Primefact 1538 first edition Helen Squires Agricultural Resource Management Officer, Agricultural Land Use Planning, Paterson. NSW

³³ This is discussed further in Chapter 5 and illustrated starkly by the difference between *Gazetted Mapping* and the publicly held datasets in New South Wales.

³⁴ Selby, H. (1984). *The Expert In Court: Educator or Puppet*. Legal Service Bull. 9: 11.

³⁵ Selby, H. (2010). When science comes to court. Issues arising in the presentation of expert forensic science evidence to the court *Australian journal of forensic sciences* 42(3): 159-167

³⁶ Selby, H. and I. Freckelton (1989). The use and abuse of experts. *Law Institute Journal* 63(1-2): 31-35.

³⁷ Freckelton, I. R. and H. Selby (2009). *Expert evidence: Law, practice, procedure and advocacy*, Thomson Reuters (Proux Science).

- Agricultural Land Classification (ALC)³⁸
- Biophysical Strategic Agricultural Land (BSAL)³⁹
- Critical Industry Cluster (CIC)⁴⁰
- Important Agricultural Land (IAL)⁴¹
- Land and Soil Capability (LSC)⁴²
- Regional farmland mapping⁴³
- State Significant Agricultural Land (SSAL)⁴⁴

The rural land evaluation system generally employed has been the Land and Soil Capability (LSC) assessment scheme.⁴⁵ This is based on rural land capability mapping completed in 1986. Initially developed for a property vegetation planning program under the Native Vegetation Act (2003), it was upgraded for the introduction of the NSW Natural Resources Monitoring, Evaluation and Reporting program. It retains the eight classes of the earlier system but places additional emphasis on specific soil limitations and their management. The scheme's authors recognise that the LSC is better suited to the broad-scale assessment of land capability, particularly for the assessment of lower intensity, dryland agricultural use. It is less applicable for high intensity land use or for irrigation where the suitability of land and water resources for particular crops is required to be demonstrated. The LSC assessment scheme selects biophysical features of the land and soil including landform position, slope gradient, drainage, climate, soil type and soil characteristics to

³⁸ ALC Primefact 1538 limitations: *Poor quality control of product, limited availability and suitability for digital conversion (available as paper maps only in some areas), does not identify specific industry needs and excludes non-soil based agricultural needs.*

³⁹ BSAL Primefact 1538 limitations: *The maps are at a state/regional scale with varying accuracies and degrees of confidence. A site verification process is required to determine if the maps are correct at the local scale. It does not identify land for industries that are not highly soil dependant (e.g., intensive agriculture) nor for extensive grazing industries (e.g., beef cattle).*

⁴⁰ CIC Primefact 1538 limitations: *The mapping is limited to only the equine and viticulture industries in the Upper Hunter. The mapping program no longer exists to identify other industries.*

⁴¹ IAL Primefact 1538 limitations: *Due to scale limitations IAL Maps are not suitable for assessing development proposals or for property specific planning purposes.*

Coverage does not include the whole state. It is completed at local scale for some councils only.

⁴² LSC Primefact 1538 limitations: *The mapping is broad-scale and should only be used at the scale of the soil map datasets that underpin the maps. These maps are not suitable for site assessment at the property scale. It is less applicable for high intensity land use or non-soil reliant industries (e.g., poultry).*

⁴³ RFM Primefact 1538 limitations: *It does not identify land for industries that are not highly dependent on biophysical attributes such as soils or landscapes (e.g., intensive agriculture or emerging industries such as blueberries). Mapping scale is not suitable for property level assessment.*

⁴⁴ NSW Department of Primary Industries (2021). Draft State Significant Agricultural Land Map.

<https://nswdpi.mysocialpinpoint.com/ssal> As to accuracy, the publication notes include the following:

The preliminary draft SSAL map is derived from existing statewide information where the most relevant characteristics related to the best agricultural lands are used. The layers used to build this map are the best available in NSW, however these input layers are of variable quality. There will also be real and perceived anomalies because of the factors used (such as slope, salinity, etc), some of which may not be evident in land values or other readily observable characteristics.

Through the process, public consultation was sought, allowing for mapping corrections to be made.

⁴⁵ NSW Office of Environment and Heritage (2012) The land and soil capability assessment scheme.

<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/land-soil-capability-assessment-scheme-120394.pdf> ISBN 978 1 74293 634 5 OEH 2012/0394 October 2012

derive rating tables for management and soil hazards. These hazards comprise water and wind erosion, soil structural decline, soil acidification, salinity, waterlogging, soil depth and mass movement. Each hazard is ranked from 1 (best, highest capability land) to 8 (worst, lowest capability land). A final LSC class of the land is based on the most limiting hazard.

A second, related scheme for land with high-quality soil and water resources and ‘capable of sustaining high levels of productivity’ was introduced in 2013. Defined as Biophysical Strategic Agricultural Land (BSAL), the land and water resources are assessed under 10 criteria in an interim protocol, ranked in ease of measurement:

- slope;
- rock outcrop;
- surface rock fragments;
- gilgai;
- soil fertility (soil type);
- effective rooting depth to a physical barrier;
- soil drainage;
- soil pH;
- salinity; and
- effective rooting depth to a chemical barrier.

Some 2.8 million hectares of BSAL were identified and mapped at a regional scale across New South Wales.⁴⁶ Recognising the potential for land-use conflict, the most recent incarnation of updated and revised mapping was incorporated in the form of State Significant Agricultural Land (SSAL). That the draft SSAL mapping was released for public consultation in a ‘preliminary draft’ form ‘using the best available (data) layers’ with accuracy caveats⁴⁷ underscores the difficulties in using spatial datasets of variable quality and origins. It renders the mapping unreliable and engenders conflict.⁴⁸

⁴⁶ Gilbert & Sutherland (2019) BSAL mapping from attributed Dataset
<https://www.arcgis.com/home/item.html?id=58b5c65ec2894125a260cfcf65eed6a6>

⁴⁷ NSW Department of Primary Industries (2021). Draft State Significant Agricultural Land Map.
<https://nswdpi.mysocialpinpoint.com/ssal>

⁴⁸ Koowarta v State of Queensland [2014] FCA 627 and dealt with in chapter 5.

Foody et al (2016)⁴⁹ and Hunter et al (2009)⁵⁰ illustrate why the relationship between data quality and a user's perception of mapping accuracy can differ. Hunter postulates that whilst international standards have been established, theoretical models of error have been developed, new visualization techniques introduced and for spatial datasets, metadata is now routinely documented, difficulties remain in the way data quality information is being presented (if it is being presented at all). Foody demonstrates that mapping accuracy is dependent on the reference dataset used in its construction and that, on testing, the largest impacts on accuracy occurred when mislabelling involved confusion between similar data classes.

That these various land assessment schemes have been less than successful in affording agricultural land protection during land-use conflicts is reflected in the range of supplementary planning measures and responses employed by the state government. These included cited measures⁵¹ to protect lands from mining and CSG impacts. The accuracy of spatial datasets is also limited. For example, Hu, Q., et al (2013)⁵² cite a 78% accuracy using Google Earth's high spatial resolution imagery for regional land use/cover mapping. Whilst this is deemed sufficiently accurate by the authors, the credibility of expert testimony that relies on such a level of accuracy is readily undermined when tested in courts, particularly when ground-truthing demonstrates such inaccuracy at the local (or site-based) scale. In respect of the data outputs and the mapping produced, there is a growing body of evidence demonstrating an inappropriate:

⁴⁹ Foody, G. M., et al. (2016). The sensitivity of mapping methods to data quality: Training supervised image classifications with imperfect reference data. *ISPRS International Journal of Geo-Information* 5(11): 199.

⁵⁰ Hunter, G. J., et al. (2009). Spatial data quality: problems and prospects. *Research trends in geographic information science*, Springer: 101-121.

⁵¹ NSW Department of Planning, Industry and Environment (2021). <https://www.planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/Safeguarding-our-Agricultural-Land>:

- *The NSW Government has introduced a range of measures designed to deliver greater protection to agricultural land from the impacts of mining and coal seam gas (CSG) activity. It has done this by:*
- *implementing coal seam gas exclusion zones across 2.7 million hectares of NSW, covering current and future residential land and Critical Industry Clusters in the Upper Hunter*
- *safeguarding 2.8 million hectares of biophysical strategic agricultural land across the state by applying the Gateway process for State significant mining and coal seam gas proposals*
- *implementing Critical Industry Clusters for the equine and viticulture industries in the Upper Hunter to ban new coal seam gas activity within those areas, and ensure proposals for State significant mining projects are scrutinised via the Gateway process*
- *establishing a Mining and Petroleum Gateway Panel to scientifically assess mining and coal seam gas impacts on strategic agricultural land and its associated water resources*
- *introducing regulations governing exploration activity, overseen by the Land and Water Commissioner*
- *introducing an Aquifer Interference Policy*
- *developing Guidelines and technical notes for preparing an Agricultural Impact Statement for State significant development applications*
- *introducing Codes of Practice; one for fracture stimulation and another for well integrity*
- *making all CSG activity subject to an environment protection licence issued by the EPA*
- *implementing the findings of the Independent review into CSG activity in NSW by the Chief Scientist and Engineer*
- *implementing the NSW Gas Plan*

⁵² Hu, Q., et al. (2013). Exploring the use of Google Earth imagery and object-based methods in land use/cover mapping. *Remote Sensing* 5(11): 6026-6042.

- level of understanding of underpinning data quality and limitations;
- reliance on fine-scale presentation of spatial data sets level in the absence of appropriate data quality limitations; and
- willingness to publish and rely on unreliable mapping.

In terms of expert scientific evidence, these collectively have the effect of fuelling land-use conflict when such data and representations do not assist a court to the degree they should, or indeed mislead a court. In the absence of any reference to data quality, Selby's (2010) stated risk⁵³ that "we start out with science and we end with a captivating magic show" is effectively realised. This emphasises the need (indeed the obligation or duty) for the expert scientist to ensure that appropriate data underpins the opinion evidence, to help the court as much as is possible, or as asked for.⁵⁴

Queensland

Since 1990, the Guidelines for agricultural land evaluation in Queensland⁵⁵ detailed procedures for agricultural land capability assessment. These were progressively used to develop (in 2013) a suitability framework for various regional study areas with the underpinning data also used for agricultural and regional planning, assessments for mining, gas and industrial projects and regulatory compliance.⁵⁶

Unlike in New South Wales, Queensland mining and petroleum projects (the cause of many land-use conflicts) are exempt from the state's principal land-use statute, the Planning Act 2016 (Qld) (the 'Planning Act'). Mining and petroleum development (including coal seam gas) in Queensland is regulated separately from other forms of land development. The State government has attempted to separate the promotion and regulation⁵⁷ of mining (using the Coordinator-General in a dual-role of both assessing and facilitating mines as 'coordinated projects' under the State Development and Public Works Organisation Act (1971)). Ownership, land access and use issues, together with royalties, are regulated under the Mineral Resources Act (1989), with disputes being heard in the Land Court of Queensland. Environmental protection from mining is regulated under the Environmental Protection Act (1994). Importantly, when a resource or regulated activity impacts

⁵³ Selby, H. (2010). When science comes to court. Issues arising in the presentation of expert forensic science evidence to the court. *Australian journal of forensic sciences* 42(3): 159-167

⁵⁴ This distinction is subtle. The independent expert must be ready to provide additional information in responses to questioning as opposed to what he or she thinks the court *should* hear.

⁵⁵ Guidelines for agricultural land evaluation in Queensland (1990) Land Resources Branch, Department of Primary Industries ISBN 0646027417 Bib ID 1976455

⁵⁶ Regional Suitability Frameworks for Queensland, Department of Natural Resources and Mines & Department of Science, Information Technology, Innovation and the Arts, 2013.

⁵⁷ Whether or not the separation and regulation has been successful is dealt with in chapter 5.

lands mapped as high-quality agricultural areas or strategic cropping lands, the State (as opposed to the landholder) can be compensated under the provisions of the Regional Planning Interests Act (2014). This dichotomy, creating a delineation between the treatment of private and community assets, is explored later in this chapter and discussed further in Chapter 5.

The second edition of the guidelines⁵⁸ was updated in 2015, accounting for the regional suitability framework. The framework indicates which crops are suitable for individual mapped areas of land or soil. Under this framework, the principal land evaluation methods are:

- agricultural land classification (ALC);
- good quality agricultural land (GQAL) – now superseded but still cited in local planning schemes;
- land capability;
- land suitability; and
- versatile cropping land (VCL).

Based on interpreted land evaluation information, the Agricultural Land Classification (ALC) is hierarchical and is used to map agricultural land in four classes (A, B, C and D). Class D land is unsuitable for any agricultural land use and Class A land exhibits the greatest use. Under the State Interest provisions of an over-arching 2017 State Planning Policy,⁵⁹ ALC data are used in local government planning schemes, regional plans and the state-wide Agricultural Land Audit, which informs trigger-mapping for land assessed to be Strategic Cropping Land.⁶⁰ The ALC scheme is displayed spatially in the state-wide ALC dataset which is part of a publicly available database known as the Queensland Spatial Catalogue,⁶¹ accessible through a web-based interface called the Queensland Globe.⁶² The ALC classes are:

Class A – Crop land

Land that is suitable for a wide range of current and potential crops with nil to moderate limitations to production.

⁵⁸ Guidelines for Agricultural Land Evaluation in Queensland (2nd Edition 2015, DSITI & DNRM). Queensland Government (Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines), Brisbane. <https://www.publications.qld.gov.au/dataset/bf5588bc-a0ee-4e1b-ab09-dc69e4e5680a/resource/d6591386-08e2-453f-a6fa-dff2a756215f/download/qldguidelinesforagriculturalandevaluation2e2015.pdf>

⁵⁹ State Planning Policy (2017) Department of Infrastructure, Local Government and Planning, Queensland Government, 1 William Street, Brisbane Qld 4000, Australia.

⁶⁰ Strategic Cropping Land was identified and protected under the (now repealed) Strategic Cropping Land Act (2011) but is now managed under The Regional Planning Interests Act (2014) (RPI Act) which regulates impacts from resource and other regulated activities on identified areas of regional interest.

⁶¹ The State of Queensland (Department of Resources) (2021), Queensland Government, Brisbane, Australia. <https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

⁶² The State of Queensland (Department of Resources) (2021), Queensland Government, Brisbane, Australia. https://qldspatial.information.qld.gov.au/Queensland_globe

A1 Suitable for a wide range of current and potential broadacre and horticultural crops

A2 Suitable for a wide range of current and potential horticultural crops only

Class B – Limited crop land

Land that is suitable for a narrow range³ of crops. The land is suitable for sown pastures and may be suitable for a wider range of crops with changes to knowledge, economics or technology.

Class C – Pasture land

Land that is suitable only for improved or native pastures due to limitations that preclude continuous cultivation for crop production. Some areas may tolerate a short period of ground disturbance for pasture establishment.

C1 Suitable for grazing sown pastures requiring ground disturbance for establishment; or native pastures on higher fertility soils.

C2 Suitable for grazing native pastures, with or without the introduction of pasture, and with lower fertility soils than C1.

C3 Suitable for light grazing of native pastures in accessible areas and includes steep land more suited to forestry or catchment protection.

Class D – Non-agricultural land

Land not suitable for agricultural use, including land alienated from agricultural use.

Complex codes (A/C, A/D, B/C, C/D)

Land that is a complex of class A, B, C or D land where it is not possible to delineate the land class at the map scale. The dominant class is the first code in the sequence and is assumed to be >50% of the area, but <70%.

Notes

- 1. A wide range of crops is four or more existing crops of local commercial significance.*
- 2. Horticulture includes intensively grown small crops (e.g. vegetables) as well as tree crops (e.g. grown for nuts, seeds or fruit). Silviculture (plantation forestry) is not included.*
- 3. A narrow range of crops is three or fewer crop types (broadacre or horticulture) of local commercial significance. Silviculture (plantation forestry) may be included. Crops with similar agronomic requirements e.g. maize and grain sorghum, peaches and nectarines are not generally regarded as different crop types. Different management regimes (including irrigation strategies) for the same crop do not increase the number of crops.*
- 4. Non-agricultural land includes land that cannot be placed in any of the other land classes and includes land such as urban areas and stream channels.*
- 5. In cases where two or more land classes are equally dominant and none are greater than 50%, judgement is used to identify the most appropriate agricultural land class/es for the unit.*

The former Good Quality Agricultural Land (GQAL) system was a two-class system in which land was either good quality land or not. Class A land was classified as GQAL. This has now been superseded using the more-specific regional frameworks and (obviously) has had the effect of

increasing the specificity of assessments, illustrating the complexity and variation within assessments. In respect of land suitability, decreasing progressively, five suitability classes are defined for use with classes 1 to 3 deemed suitable for agricultural production. Class 1 land is highly productive, requiring only simple management practices to maintain economic production, with minimal degradation to the land resource. Class 5 land has extreme limitations that preclude the possibility of successful, sustained use of the land. The suitability classes are:

Class 1 – Suitable land with negligible limitations

Class 2 – Suitable land with minor limitations

Class 3 – Suitable land with moderate limitations

Class 4 – Unsuitable land with severe limitations

Class 5 – Unsuitable land with extreme limitations

Yet another land capability classification is used for broad-scale assessment. The system uses eight classes, with limitations and hazards to agricultural and pastoral use becoming progressively greater from class I to class VIII:

Class I – Land suitable for all agricultural and pastoral uses

Class II – Land suitable for all agricultural uses but with slight restrictions for cultivation

Class III – Land suitable for all agricultural uses but with moderate restrictions for cultivation

Class IV – Land primarily suited to pastoral use but which may be safely used for occasional cultivation with careful management

Class V – Land that in all other characteristics would be arable but has limitations that make cultivation impractical and/or uneconomic

Class VI – Land that is not suitable for cultivation but is well suited to pastoral use

Class VII – Land that is not suitable for cultivation but on which pastoral use is possible only with careful management

Class VIII – Land that has such severe limitations that it is unsuited for either cultivation or grazing

Finally, versatile cropping land (VCL) is a two-class system in which land is deemed to be either VCL or not. It is assessed based on crop requirements and the physical limitations of the soil type. Where the soil properties meet a specific crop requirement, the crop is deemed suitable. If the land is suitable for four or more crops, it is classified as VCL (similar to an ALC Class A).

Like the systems and classifications used in New South Wales, the differences between land suitability, capability, ALC, VCL and GQAL (still referenced in local planning schemes) creates confusion about which lands have been protected. In Queensland, land-capability assessment was largely abandoned in favour of the regional framework approach, together with the ALC system.

Conversely, whilst the New South Wales' State Significant Agricultural Land mapping was intended to be locally updated, to date the State's existing data disclaimers warning against reliance on the mapping remain.



Plate 3. Coastal erosion of former sugarcane land on the northern bank of the Clarence River and subsequent colonisation by mangroves. A proposed development on this site was the subject of litigation in the Land and Environment Court where the impacts of climate change were to be determinative. (Photograph by author, 2020).⁶³

Regionally-specific approaches represent an important concept in the context of local land-use conflicts. A crop or agricultural practice that is desirable in one region or location may be problematic in another. Agriculturally, this is in the same vein as a weed being a plant in the wrong place⁶⁴ (Nelson, 1946). It is similarly illustrated by the pasture species issues identified in *Graving v APLNG* (Queensland PEC 2016) and *Swan v Santos* (Queensland PEC 2017), where the same

⁶³ This dispute involved contentions regarding appropriate scientific responses to climate change, flooding impacts and shelter-in-place arrangements for new residents. With respect to land capability, the impacts of filling land below the level of the highest astronomical tide, a feared loss of freshwater wetlands and the impacts of rising sea levels on (disputed) groundwater dependent ecosystems were also considered by the Land and Environment Court of NSW.

⁶⁴ Nelson, A. (1946) *Principles of Agricultural Botany* Chapter XXII 'Weeds' (Page 439), Thomas Nelson and Sons Ltd. Provides this definition:

'A weed has been defined as "a plant in the wrong place". This definition includes crop plants when they appear in land where they are not wanted. In an oat crop, potato plants sprung from tubers inadvertently left in the soil (ground-keepers) provide an example of such a case. More usually, however, the term is applied to all those plants for which man has found no use and which in their evolution have developed such powers of aggression, persistence, or reproduction as to make them a menace to the best possible development of a crop. In short, this means that weeds are those plants which can compete with some degree of success against the plants specially favoured by the farmer.'

grass species in those matters, some fifty kilometres apart, were regarded by one farmer as a pasture, and as a weed by the another.⁶⁵

The literature Indicates, firstly, that the accuracy of spatial data can be highly variable from region to region and within different assessment schemes themselves. Secondly, the available data sets were often originally gathered for different purposes, resulting in a misuse and/or misapplication of those data. Thirdly, that the data must be appropriately matched with the interpretative documented rules used to make the assessment, if it is to be of any utility. As with all interpretive assessments, data requirements must appropriately accord with end-point requirements.

It is a truism that in Australia, more so than on other continents, successful agriculture is dependent on surface and ground water resources. The next section assesses the current literature relating to water resource evaluation in the context of land-use conflict litigation.

Surface and groundwater resources

In Australia, against a backdrop of variable rainfall and recharge, drought and climate change, surface and groundwater resources are now heavily regulated. Water abstraction rights are traded as a commodity across several markets within bounded geographical areas. In both NSW and Queensland, further water access regulation has been implemented in response to increased demand as local allocations of both surface waters and groundwaters have become fully subscribed.

Over the last two decades, drought impacts, together with an increased appetite for water security driven by climate change awareness, have resulted in significant increases in water prices.⁶⁶ In good seasons, with plentiful rains, the market price falls. These changes have been accompanied by

⁶⁵ Graving v APLNG (QPEC 2016) in which instructions were given to complete a pasture assessment of the disturbed and undisturbed pastures and provide recommendations for rehabilitation to the pipeline owner, based on access licence conditions and the wishes of the landholder. This matter was resolved through the proactive involvement of the Landholder's lawyers and the Queensland PEC's Joint Expert Process. In Graving v APLNG, Sabi grass (*Urochloa mosambicensis*) invaded rehabilitated pastures 50km south of Biloela, Queensland after the installation of a gas pipeline, where land access was gained under the Mineral Resources Act (1989). The grazier, took exception to Sabi grass, maintaining the analogue (or pre-disturbance) pastures specified for rehabilitation were predominantly creeping Bluegrasses (*Bothriochloa insculpta*). To him, Sabi grass was a weed. However, in another pipeline conflict (Swan v Santos (QPEC 2017) and cited in Chapters 3 and 4) at Moura, some 46 km west of the Graving v APLNG property, Sabi was deemed to be a useful pasture grass by another experienced grazier.

⁶⁶ Department of Agriculture, Water and the Environment (2021) Australian Government.

<https://www.awe.gov.au/abares/research-topics/water/water-market-outlook>

Water prices are forecast under four representative climate scenarios '*aligned with state water agency allocation outlooks: extreme dry, dry, average and wet*'. These scenarios are normally presented as Probability of Exceedance (PoE) where the probability that storage inflows will be equalled or exceeded, based on historical records where; *extreme dry* flows are those which would have been exceeded in 99 out of 100 years (or 99%), *dry* in 75%, *average* in 50% and *wet* in 20% of years.

increased policing of water ‘take’ throughout all industry sectors and successful prosecutions for water theft, where unmetered supplies have been stolen or under-reported.

As water is now traded on these open markets, usage requirements are separated from the ownership of the resource itself. In respect of cross-border flows, such as those within the Murray-Darling Basin (dealt with later in this chapter), rains in the MDB’s northern catchments directly result in agricultural prosperity and ecological benefits downstream.

Unless for stock or domestic use, regulators increasingly require agricultural enterprises to demonstrate a need or a use for feasible water supplies. In respect of need, these are normally in the form of crop water requirement calculations and a farm plan. In respect of feasibility, they are in the form of rights, ownership and yield.

Withers and Vipond (1988)⁶⁷ presented the following summarised overview assessing the typical information required for an irrigation feasibility assessment.

<u>Surface water and groundwater</u>	<u>Data as collected</u>
River stage and discharge and/or borehole yield and drawdown	Mean annual values
Total solids in suspension	Mean monthly values
Total dissolved solids	Maximum and minimum values for given return periods
Specific substances in suspension and solution	

The Withers and Vipond approach is hard to fault. It captures two metrics that are repeatedly overlooked in assessments that develop into significant issues in land-use conflicts. Firstly, the calculation of minimum values for river (or streamflow) discharge, and secondly, maximum groundwater yield and drawdown. The first requirement captures surface water impacts when the downstream receiving environment, riparian zones and groundwater dependent ecosystems (GDE) are at their most vulnerable. However, the way flows are reported becomes critical, as averaging effectively masks impacts. This is a central issue and one where stakeholders are rightly sceptical. It is in drought that receiving environments are at their most vulnerable to increased water use upstream. In variable climates, masking impacts by citing seemingly ‘inconsequential’ changes through flow-averaging is simply misleading.

Primarily to determine priority needs for water sector policy interventions, Sullivan et al (2006)⁶⁸ identified weaknesses embodied in conventional water-resource assessments where models built

⁶⁷ Withers, B., & Vipond, S. (1988). *Irrigation: design and practice*. London: Batsford Limited.

⁶⁸ Sullivan, C., et al. (2006). Application of the Water Poverty Index at Different Scales: A Cautionary Tale. *Water International* 31(3): 412-426.

from data representing averaged conditions do not represent the actual conditions. They also cited a dependence on available (and perhaps of dubious quality) data which, when scaled up or down, generated model inaccuracies and decreased reliability.

To move away from deterministic approaches that relied primarily on modelling large-scale data, they proposed the Water Poverty Index (WPI), a mathematical data-driven tool to estimate water stress at household and community levels. As a site-specific water-resource basis assessment, it took a holistic approach using five components: resources, access, capacity, use and the environment. The index, yielding a score of between 0 and 100, was derived from the weighted average of each component and was trialled in Barbados, Guyana, Jamaica, Suriname, Trinidad and Tobago, Venezuela and the United Kingdom. Since then, the WPI has been internationally applied at various areal levels (Foguet & Garriga 2011⁶⁹, Manandhar et al. 2012,⁷⁰ Wilk & Jonsson, 2013,⁷¹ van den Vyver 2013,⁷² & ⁷³ and Wurtz et al. 2019).⁷⁴ Van den Vyver (2013) went on to compare traditional and simplified methods for the WPI calculation and concluded that whilst there was no change between the results, the scale at which the data was collected, the chosen components and the data sources could all influence the results. He determined that the method comparisons were critical in ensuring the relevance of the chosen method.

Droop and Matthew (2012),⁷⁵ in a critical review of the Murray Darling Draft Basin Plan (2011),⁷⁶ focussed on the hydrologic modelling of farm dams and the subsequent assessment of water allocations used to inform that plan. They highlighted what they viewed as significant errors around the interpretation of the modelling input parameters, criticising the use of mass survey techniques to generate estimates of the catchment water take. They concluded that the techniques used “are prone to significant uncertainty and consequential error that must be identified and explicitly accounted-for in any model outputs. Without this, the underpinning reliability of the generated

⁶⁹ Pérez-Foguet, A. and R. G. Garriga (2011). Analyzing water poverty in basins. *Water Resources Management* 25(14): 3595-3612.

⁷⁰ Manandhar, S., et al. (2012). Application of water poverty index (WPI) in Nepalese context: A case study of Kali Gandaki River Basin (KGRB). *Water Resources Management* 26(1): 89-107.

⁷¹ Wilk, J. and A. C. Jonsson (2013). From water poverty to water prosperity—A more participatory approach to studying local water resources management. *Water Resources Management* 27(3): 695-713.

⁷² van der Vyver, C. (2013). Water poverty index calculation: additive or multiplicative function. *Journal of South African Business Research* 2013: 1-11.

⁷³ Van der Vyver, C. (2013). A comparison of the traditional and simplified methods for Water Poverty Index Calculation. *Mediterranean Journal of Social Sciences* 4(6): 229-229.

⁷⁴ Wurtz, M., et al. (2019). A spatial application of the water poverty index (WPI) in the State of Chihuahua, Mexico. *Water Policy* 21(1): 147-161.

⁷⁵ Droop, O.P. and Matthew P.L. (2012) Proposed Basin Plan - Public Submission to Murray Darling Draft Basin Plan, Murray Darling Basin Authority, Australian Government, Canberra, Australia.

⁷⁶ Murray Darling Basin Authority (2011). Draft Basin Plan. Australian Government, Canberra, Australia
<https://www.mdba.gov.au/publications/archived-information/basin-plan-archives/steps-development-basin-plan>

results and any degree of reliance (particularly by decision makers working with the limited information presented) will be brought undone.” Their recommendations were as follows:

- Any estimation of water take should necessarily influence the sustainable allocation limits and the proportioning of environmental flows.
- The estimation process adopted should report accurately on the uncertainties of all parameter estimations which, currently, it does not.
- Where regression techniques are used, the levels of uncertainty should be reported in terms of the Prediction Intervals, as opposed to the Confidence Intervals.
- The practical application of single/discrete outcomes of regression analyses requires accurate, robust data sets and/or strongly related variables. The available information does not provide confidence that either of these requirements has been met.
- Regression analyses based on inputs that have themselves been generated by regression equations causes additional cumulative and propagated uncertainties, which should be acknowledged and accounted for.
- The estimated parameters (aggregated to a catchment scale) should reflect appropriate rainfall, runoff, evaporation and seepage characteristics pertinent to the catchments and/or basins being considered, together with a reported error attributable to the data collection and/or arithmetic technique employed.
- The estimation of hydrological impacts within any catchment requires an examination of hydrological processes. Any adopted method must address hydrological processes such as the non-linear contribution of catchment to total streamflow and channel losses. If not, this leads to a potential for the inaccurate estimation of impacts.
- The scale of this inaccuracy becomes greater with increasing catchment areas and hydrological variability. Based on the limited technical information available to us, we have significant concerns that without greater scientific rigour being applied to the techniques underpinning the Plan, the policy and management decisions based on that Plan risk being undermined.
- Employing methods that have not been properly expressed in terms of the potential error in the results are not meaningful in practical terms or in any useful policy context.
- Furthermore, should inappropriate hydrological methods be relied upon in terms of sustainable diversion limits, water allocations or environmental flows, then there is a risk that such reliance could result in a collection of liability. The accusation could be made that the method, its results and any consequential decisions based upon them had been unreliable in the first instance.

Droop and Matthew’s early prediction that the underpinning reliability of results and reliance could be brought undone was prescient. Seven years later, significant criticism was levelled at the final Murray Darling Basin Plan by the South Australian Government Royal Commission⁷⁷ (2019). The Commissioner wrote (at page 304):

- “...of particular concern were the Expert Advisory Panel’s ‘other issues and observations’. In that section of the report, the Panel noted that there was a “lack of enquiry and investment” in addressing uncertainty in modelling, and that as a result:
- A culture of reactionary information management is inevitable in the current poorly resourced environment, with a strong reliance on expert opinion and models that lack rigorous testing and transparent documentation. This is coupled with a philosophy of ‘making do’ with the current tools available whilst assuming that comparisons of models may ‘factor out’ uncertainties.
- This highly undesirable state leaves management of environmental watering in the Basin open to confusion, error and potential abuse. Much of concerning the use of base data and modelling.”

The literature confirms that, both theoretically and experientially, employing methods that have not been properly expressed in terms of data quality and potential error in the results are not meaningful in practical terms or in any useful policy context. This is equally true for expert evidence called to help courts during litigation.

The second Withers and Vipond metric assesses the unsustainable groundwater yield and drawdown or what has become colloquially known as ‘groundwater mining’ – where its abstraction rate exceeds recharge. Kalf et al⁷⁸ (2005) reviewed the definition and methodology for determining sustainable groundwater yield. Their review of the available definitions and concepts assessed them to be ambiguous and non-physically based, rendering them unsuitable for quantitative application. The review noted that the notion that all groundwater can be defined as sustainable is invalid and that using a sustained yield policy, particularly where ecological constraints are applied, is sometimes impracticable. They derived sustainable yield sums for basin sustainable, partial (non-sustainable) mining and total (non-sustainable) mining yields using numerical modelling methods on a constraints basis.

⁷⁷ Murray-Darling Basin Royal Commission Report (2019). South Australian Government Royal Commission. Government of South Australia. Adelaide. South Australia. ISBN 978-0-6484670-2-1.

⁷⁸ Kalf, F. R. P. and D. R. Woolley (2005). Applicability and methodology of determining sustainable yield in groundwater systems. *Hydrogeology Journal* 13(1): 295-312.

Barnett et al's 2012 publication of the Australian Groundwater Modelling Guidelines⁷⁹ sought to standardise approaches to groundwater modelling. The result is that an assessment of groundwater availability generally requires the development of a Hydrogeological Conceptual Model (HCM), even for relatively low⁸⁰ yields, before groundwater bores can be developed and exploited. However, in the context of this research, no minimum requirements for the number of bores were set. This contrasts with the minimum construction requirements for water bores in Australia⁸¹ for which there are comprehensive rules, enforcement and policing.

Reed et al (2000)⁸² postulated a methodology for sampling plan design to reduce the costs associated with long-term monitoring of contaminated groundwater sites. It combined fate-and-transport modelling, plume interpolation, and an algorithm to plan dissolved contaminant sampling. It concluded that inverse distance weighting was shown to be the most effective screening tool in assessing whether geostatistical modelling was warranted. In 2004, Reed and Minsker⁸³ demonstrated the use of high-order Pareto optimisation (system optimising for more than two objectives) on a long-term monitoring application. It concluded that such high-order optimisation held significant potential as a tool that can be used in the balanced design of water resources systems.

Reed and Kollat (2012)⁸⁴ went on to demonstrate how many objective long-term groundwater monitoring (LTGM) network design trade-offs evolve over time, given systematic model errors (i.e. predictive bias), groundwater flow-and-transport forecasting uncertainties, and contaminant observation uncertainties. Using a framework of 'Adaptive Strategies for Sampling in Space and Time' (ASSIST) in experimental aquifers, both the influence and consequences of plume dynamics and alternative cost-savings strategies were assessed. It was demonstrated that least-cost, purely statistical monitoring frameworks needed to be expanded to consider many-objective evaluations. It was postulated that the ASSIST framework provided a highly flexible approach for measuring the value of observables that simultaneously improves how the data are used to inform decisions.

⁷⁹ Barnett B, Townley LR, Post V, Evans RE, Hunt RJ, Peeters L, Richardson S, Werner AD, Knapton A and Boronkay (2012). Australian groundwater modelling guidelines. The National Water Commission 95 Northbourne Avenue Canberra ACT 2600. ISBN: 978-1-921853-91-3.

⁸⁰ Other than basic stock and domestic bores.

⁸¹ National Uniform Drillers Licensing Committee (2020) The minimum construction requirements for water bores in Australia. 4th Edition (First published 1997 Second edition 2003 Third edition 2012 Fourth edition 2020 ISBN 978-0-646-81881-8).

⁸² Reed, P., et al. (2000). Cost-effective long-term groundwater monitoring design using a genetic algorithm and global mass interpolation. *Water Resources Research* 36(12): 3731-3741.

⁸³ Reed, P. M. and B. S. Minsker (2004). "Striking the balance: long-term groundwater monitoring design for conflicting objectives." *Journal of Water Resources Planning and Management* 130(2): 140-149.

⁸⁴ Reed, P. M. and J. B. Kollat (2012). "Save now, pay later? Multi-period many-objective groundwater monitoring design given systematic model errors and uncertainty." *Advances in Water Resources* 35: 55-68.

The literature confirms that, both theoretically and experientially, there are multiple tools available to better apply sampling and analysis quality principles to both surface and groundwater assessments. However, in respect of a minimum number of bores and observations to inform an HCM, an examination of the literature indicates there is only a limited body of research available. Whilst the method in the next chapter nominates a minimum of four bores, this represents a research gap that should be the subject of another study.

Having assessed water resources in respect of quantity, the next section details the assessment approaches in terms of water quality, which is equally important in respect of agricultural use and environmental impacts.

Water quality

This section assesses current literature and developments relating to water quality. The policies, principles and recent practice of water quality assessment in Australia have been progressively developed from the National Water Quality Management Strategy (1994).⁸⁵ Under that strategy the following guidelines were developed:

- Australian and New Zealand guidelines for fresh and marine water quality (2000^a)⁸⁶ and (2018)⁸⁷
- Australian guidelines for water quality monitoring and reporting (2000)⁸⁸
- Australian Drinking Water Guidelines (2004)⁸⁹ and (2011)⁹⁰
- Australian Guidelines for Water Recycling – Phase 1, Managing Health and Environmental Risks (2008)⁹¹

⁸⁵ ARMCANZ–ANZECC (1994). National Water Quality Management Strategy: Policies and Principles—A Reference Document; Paper No 2; Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand: Canberra, Australia.

⁸⁶ ANZECC–ARMCANZ (2000^a). Australian and New Zealand guidelines for fresh and marine water quality. National Water Quality Management Strategy; Paper No 4; Australian and New Zealand Environmental and Conservation Council, Agriculture Resource Management Council of Australia and New Zealand: Canberra, Australia.

⁸⁷ Water Quality Australia (2018). Australian and New Zealand Guidelines for Fresh and Marine Water Quality. 2018. Available online: <http://www.waterquality.gov.au/guidelines/anz-fresh-marine>

⁸⁸ ANZECC–ARMCANZ (2000). Australian guidelines for water quality monitoring and reporting. In National Water Quality Management Strategy; Paper No 7; Australian and New Zealand Environmental and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand: Canberra, Australia.

⁸⁹ NHMRC–NRMMC (2004) (National Health and Medical Research Council and Natural Resource Management Ministerial Council, 2004) Australian Drinking Water Guidelines; NHMRC, NRMMC: Canberra, Australia, Available online: http://www.nhmrc.gov.au/publications/_files/adwgs_11_06.pdf

⁹⁰ Water Quality Australia (2011). Australian Drinking Water Guidelines. <https://www.waterquality.gov.au/guidelines>

⁹¹ NRMMC; EPHC & AHMC (2006). Australian Guidelines for Water Recycling: Managing Health and Environmental Risks. NWQMS Document 21 <http://www.waterquality.gov.au/guidelines/recycled-water>

- Australian Guidelines for Water Recycling – Phase 2, Augmentation of Drinking Water Supplies (2008)⁹²
- Australian Guidelines for Water Recycling – Phase 2, Managed Aquifer Recharge (2009)⁹³
- Australian Guidelines for Water Recycling – Phase 2, Stormwater Harvesting and Reuse (2009)⁹⁴

Collectively, these guidelines have been:

- revised, refined and updated;⁹⁵
- readily accepted and employed in the formulation of licences and environmental authorities⁹⁶, allowing for discharge criteria to be set for surface waters and investigation triggers for groundwaters;
- cited within the National Environmental Protection (Assessment of Site Contamination) Measure⁹⁷ for use in defining the scale, extent and type of contamination; and
- accepted as appropriate compliance measures by the courts in multiple jurisdictions in both planning and enforcement litigation.⁹⁸

As such, the collective ‘ANZECC Guidelines’ (as they have become colloquially known) form an effective and recognised comparative reference set for assessing water quality within Australia. A key commercial issue is that data collection assessing multiple parameters is costly, but necessary for assessing sites and projects for assessments and compliance purposes. It is for this primary

⁹² NRMMC; EPHC & NHMRC (2008) Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2). In Augmentation of Drinking Water Supplies; NWQMS Document 22 <http://www.waterquality.gov.au/guidelines/recycled-water>

⁹³ NRMMC; EPHC & NHMRC (2009) Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) Managed Aquifer Recharge. National Water Quality Management Strategy Document 24 National Water Resource Management Ministerial Council, Environment Protection and Heritage Council, National Health and Medical Research Council: Canberra, Australia <http://www.waterquality.gov.au/guidelines/recycled-water>

⁹⁴ NRMMC; EPHC & NHMRC (2009) National Water Quality Management Strategy. Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2). In Stormwater Harvesting and Reuse; NWQMS Document 23 <http://www.waterquality.gov.au/guidelines/recycled-water>

⁹⁵ This has been completed on an ongoing basis and is evidenced by the updated versions of the guidelines.

⁹⁶ See, for example the Queensland Department of Environment and Science EA Register: <https://apps.des.qld.gov.au/public-register/search/ea.php>

⁹⁷ National Environmental Protection (Assessment of Site Contamination) Measure (2013) Schedule B2. National Environmental Protection Council Australia <http://www.nepc.gov.au/nepms/assessment-site-contamination>

⁹⁸ See, for example *Histpark Pty Ltd & Anor v Maroochy Shire Council* [2001] QPEC 59 [2002] Q.P.E.L.R. 135 (00/0018) Robertson DCJ. 20 September 2001 and *Environment Protection Authority v Dyno Nobel Asia Pacific Pty Ltd* [2017] NSWLEC 64.

reason that composite water quality indices, where results can be inferred from fewer parameters, are attractive.

Esty et al's (2008) Environmental Performance Index (EPI)⁹⁹ included a water quality index (WATQI) based on five quality parameters: dissolved oxygen, electrical conductivity, pH and total nitrogen, and phosphorus concentrations. In combination, these parameters represent key ecological indicators in respect of acidification, nutrient enrichment, oxygen depletion and salination. Building on Esty, Srebotnjak et al (2012)¹⁰⁰ used hot-deck imputation of missing values to expand WATQI's geographical coverage where water quality data was limited. The method was able to reliably correlate imputed and non-imputed data to the extent that spatial coverage of limited data could be increased. Jahan and Strezov (2017)¹⁰¹ expanded the use of water quality evaluation indices in assessing physicochemical and biological variables affecting port water quality at 30 sampling stations across six New South Wales ports.¹⁰² Determining a Water Quality Index, Heavy metal Evaluation Index, Contamination Index and an Environmental Water Quality Index, the results indicated a 'medium' water quality index and 'high' and 'medium' heavy metal evaluation index at three of the study ports and high contamination index in almost all study ports.

Assessing the water quality impacts of coal mining and coal seam gas production on surface water quality in the Sydney basin, Australia, Ali et al (2017) used trace metal concentrations to determine water quality impacts. The study revealed that impacted water downstream of the mine discharge points contained higher metal content than the upstream reference locations. Using a water quality index, the WQI value of surface water at and downstream of the discharge point was lower (worse) when compared to upstream or reference conditions in most cases.

Of the view that there should be an emphasis shift from water quality indexes (WQI) to a more complete River Health Index (RHI), Singh and Saxena (2018)¹⁰³ postulate that by including algae, macroinvertebrates and fish species as measurable parameters along with routine physicochemical characteristics of river water, an effective RHI can be developed without the need for expensive testing of organic pollutants.

⁹⁹ Esty, D. C., et al. (2008). Environmental performance index. New Haven: Yale Center for Environmental Law and Policy 382.

¹⁰⁰ Srebotnjak, T., et al. (2012). A global Water Quality Index and hot-deck imputation of missing data. *Ecological Indicators* 17: 108-119.

¹⁰¹ Jahan, S. and V. Strezov (2017). Water quality assessment of Australian ports using water quality evaluation indices. *PloS one* 12(12): e0189284.

¹⁰² The ports were Port Jackson, Botany, Kembla, Newcastle, Yamba and Eden.

¹⁰³ Singh, P. K. and S. Saxena (2018). Towards developing a river health index. *Ecological Indicators* 85: 999-1011.

The water quality literature indicates that a combination of targeted measured and imputed data based on both physicochemical and biological monitoring can derive appropriate water quality measurements for planning, impact assessment, compliance and enforcement. In the context of this research, it is the combination of appropriate sampling design, appropriate data collection and targeted interpretation that will most help litigants.

Having assessed land, soil and water resource evaluation methods and the underpinning science, the next section addresses the background of land-use conflicts where those evaluations may be used.

The nature and causes of land-use conflicts and jurisdictional responses

This section defines land-use conflict as a term, then examines the literature as to the history of public interest litigation and the prediction of future disputes. It then examines the current knowledge in respect of jurisdictional responses relating to scientific expert evidence. Whilst the term ‘land-use conflict’ can readily encompass national and international, social, economic and political disputes and aggression and the like, this research adopts a narrower definition.

Land-use conflict defined

The New South Wales Department of Primary Industries (2011) published a Land Use Conflict Risk Assessment Guide that defines land-use conflict as where one party (or parties) infringe upon the rights or values of land, agricultural and water resources owned by or ascribed to another party(s) and litigation has either been threatened or has ensued. This over-arching concept is reflected in contemporary land management policies, regulations and guidelines recognised by industry and Australian courts.¹⁰⁴

At first blush, even this definition might appear too broad, given that it is capable of encompassing, for example, the impounding and use of the Nerang River¹⁰⁵ in Queensland, the Oxley River¹⁰⁶ in

¹⁰⁴ For instance: the NSW Department of Primary Industries (2011) Land Use Conflict Risk Assessment Guide. Resource Planning & Development Unit. NSW Department of Primary Industries 134 first edition ISSN 1832-6668.

¹⁰⁵ Water, Gold Coast (2006). The Gold Coast Waterfuture Strategy. Gold Coast, Gold Coast City Council & Gold Coast Water, Queensland, Australia.

¹⁰⁶ Corporation, S. M. E. (2007). Integrated Water Supply Options for north-east NSW and south-east Queensland. National Water Commission, Canberra, Australia.

New South Wales, the Jordan River¹⁰⁷ in Lebanon, the Murray River¹⁰⁸ in South Australia and the Nile River¹⁰⁹



Plate 4. Resource recovery plant at a landfill¹¹⁰ in the Barron River floodplain, north of Cairns in Queensland. The offshore fines were to come onshore from a shipping channel expansion in the Great Barrier Reef Marine Park. As they contained pyrite, it was necessary for them to be either alkali-treated or interred below the lowest seasonal groundwater level where they would remain anoxic. (Photograph by author, 2019).

In Egypt. Similarly, it has application to the construction of agricultural settlements in the Golan Heights in Israel¹¹¹ (or Syria, if you are a Syrian)¹¹², the development (or clearance, if you were a crofter) of land for sheep in the far north of Scotland¹¹³ and the mining of groundwaters to enable

¹⁰⁷ Wine, M. L., et al. (2019). Agriculture, diversions, and drought shrinking Galilee Sea. *Science of The Total Environment* 651: 70-83.

¹⁰⁸ Gilbert & Sutherland (2011). Peer Review of report by SKM Consulting titled 'Improved assessment of the impact of stock and domestic dams in Queensland' Review of Farm dam impoundment modelling by Sinclair Knight Merz. Report for Department of Environment and Resource Management (DERM), Brisbane. Queensland Unpublished. DGLIP, Brisbane.

¹⁰⁹ Elbarbary, H (2021) Hydro-conflicts in the Nile Basin: An Analysis of The Grand Ethiopian Renaissance Dam (GERD) Project. <https://urn.fi/URN:NBN:fi-fe2021052531644>. Åbo Akademi University, Finland.

¹¹⁰ The dispute involved the regulation of the dredged Acid Sulfate fines into a former sand-mine and operational landfill and their ongoing management. The conflict arose because of a change to the Great Barrier Reef Marine Park Regulations (1983) banning the offshore disposal of fines from capital dredging. This was to ostensibly improve water quality within the park. The offshore disposal of fines from channel maintenance purposes is still allowed (Great Barrier Marine Park Authority (2021) <https://www.gbrmpa.gov.au/our-work/Managing-multiple-uses/ports/ban-on-capital-dredge-material-disposal>).

¹¹¹ Tal, A. (2019). Israeli Agricultural Innovation: Assessing the Potential to Assist Smallholders.

¹¹² Kastrinou, A. M. A., et al. (2020). The stateless (ad)vantage? Resistance, land and rootedness in the Israeli-occupied Syrian Golan Heights. *Territory, Politics, Governance*: 1-20.

¹¹³ MacIver, E. (1905). *Memoirs of a Highland Gentleman: Being the Reminiscences of Evander MacIver of Scourie Sutherland, Scotland*. TA Constable, Edinburgh, Scotland.

gas production in Queensland's Surat Basin¹¹⁴ or indeed for oil in the southern interior deserts of Oman.¹¹⁵ However, it is the striking commonalities of these far-apart examples¹¹⁶ – each involving a form of land capability assessment by individuals in respect of land quality, land tenure and water supply where conflict was subsequently engendered – that provides such utility in this definition. Irrespective of location, value and ownership, each of these assets was ascribed a value deemed high enough to map, acquire, seize and/or fight over. In the current Australian context, these conflicts can and do embroil diverse groups – from traditional owners, farmers, pastoralists, and community groups to developers and miners – as parties to litigation.

Where asset values, compensation and protections can be agreed by negotiation between parties (or alternatively via an arbitrated adjudication pathway), reconciling their competing interests, then litigation may be avoided. Where disagreement remains and a legal remedy in a jurisdiction is available, then litigation can (and will often) ensue. Such litigation is likely to involve the tenure, capability and reliability of the asset(s) as well as its value. Thus, it is the *differences* in how the asset is valued by the parties that becomes the natural focus of the litigation. If these differences involve scientific knowledge and information that a jurisdiction does not possess, then scientific expert evidence is engaged. If that evidence meets the court's requisite standards, it may be relied upon. In practice, court-applied expert evidence standards are arguably broad.¹¹⁷ The central point being that the quality of evidence can vary considerably.

Faigman et al (1993)¹¹⁸ explain that variance in quality led to the court's ambivalence towards science. An essential difficulty being a fundamental admissibility dilemma. It is this: A court cannot admit invalid evidence, as to do so would violate the fundamental principle of evidence law. Only relevant evidence may be admitted. Similarly, a court may not exclude valid information (or data

¹¹⁴ Sreekanth, J., et al. (2018). Probabilistic modelling and uncertainty analysis of flux and water balance changes in a regional aquifer system due to coal seam gas development. *Science of The Total Environment* 634: 1246-1258.

¹¹⁵ Li, C., et al. (2021). Status of the treatment of produced water containing polymer in oilfields: A review. *Journal of Environmental Chemical Engineering* 9(4): 105303.

¹¹⁶ Each example cited in the preceding paragraph constitutes personal or professional experience for me.

¹¹⁷ The Federal Court Rules 2011 (http://classic.austlii.edu.au/au/legis/cth/consol_reg/fcr2011186) include a dictionary with the following definitions:

'expert' means a person who has specialised knowledge based on the person's training, study or experience.

'expert evidence' means the evidence of an expert that is based wholly or substantially on the expert's specialised knowledge.

'expert report' means a written report that contains the opinion of any expert on any question in issue in the proceeding based wholly or substantially on that expert's specialised knowledge, including any report in which an expert comments on the report of any other expert.

Note: For the admissibility of the evidence of the opinion of an expert, see section 79 of the Evidence Act.

¹¹⁸ Faigman, D. L., Porter, E., & Saks, M. J. (1993). Check your crystal ball at the courthouse door, please: Exploring the past, understanding the present, and worrying about the future of scientific evidence. *Cardozo L. Rev.*, 15, 1799.

from a science perspective), for to do so would violate the equally fundamental principle that all relevant evidence is admissible.

Faigman et al (2014) cite the concept of *helpfulness*. Opinion evidence that is judged to be helpful¹¹⁹ to the court could still be based on deficient data without being exposed. It is here that the courts need further assistance in discerning opinion that is based on deficient data. Similarly, as the scientific expert's duty can only be met by opining based on sufficient, precise and correct data, experts too need assistance in clearly enunciating where data may be deficient. Whilst to do so may perceivably disadvantage their instructing client, it will ultimately help the courts, to which an expert's ultimate duty rests. Whilst there may be valid reasons why data are deficient (e.g., land access, drought, temporal variability and cost of data acquisition and analysis) it remains the duty of the expert to inform the court of those deficiencies. Then the court can reasonably weigh the evidence in a more comprehensive and appropriate scientific context. This is a central proposition. Again, this goes to evidentiary quality based on data sufficiency and the degree of validation.

Australian public interest litigation

It is no accident¹²⁰ of history that the Australian states of NSW and Queensland lay claim to the world's oldest specialist land¹²¹, planning and environment courts.^{122,123} It is a matter of record that Australian state legislatures benefited from the selected transposition of laws from the United Kingdom.¹²⁴ Under common law (as opposed to statute law) these were and continue to be

¹¹⁹ Faigman, D. L., et al. (2014). Group to Individual (G2i) Inference in Scientific Expert Testimony. The University of Chicago Law Review 81(2): 417-480.

¹²⁰ Naval Orders (1768) https://www.foundingdocs.gov.au/resources/transcripts/nsw1_doc_1768.pdf. The Admiralty of the United Kingdom's Royal Navy issued additional secret instructions to Lieutenant James Cook that were made public in 1928. These indicate that Cook's voyage to be an empire-building project as well as a scientific project to track Venus across the Sun, supported by the Royal Society. They read: '*You are also with the Consent of the Natives to take Possession of Convenient Situations in the Country in the Name of the King of Great Britain: Or: if you find the Country uninhabited take Possession for his Majesty by setting up Proper Marks and Inscriptions, as first discoverers and possessors.*' Cook claimed possession in 1770 and Governor Bourke proclaimed *Terra Nullius* in 1835, which was overturned in *Mabo v. Queensland* in 1992.

¹²¹ Queensland Courts (2021) <https://www.courts.qld.gov.au/courts/land-court/about-the-land-court/history-of-the-land-court>. Established in 1898 to determine rental and compensation issues relating to Crown leasehold land, the Queensland Land Court assesses resource, mining and petroleum applications and determines cultural heritage and indigenous issues.

¹²² Walton, M. (2012) An evaluation of the administrative law role of the Queensland Planning and Environment Court. <https://www.mondaq.com/australia/court-procedure/191326/an-evaluation-of-the-administrative-law-role-of-the-queensland-planning-and-environment-court>. Originally called the Local Government Court, the Queensland Planning and Environment Court was established by section 27 of the City of Brisbane Town Planning Act 1964 (the 1964 Brisbane Planning Act) and commenced sitting in 1966.

¹²³ Land and Environment Court of New South Wales (2021) <https://www.lec.nsw.gov.au/#>. Established in 1980, the NSW Land and Environment Court was the first specialist superior environmental court in the world.

¹²⁴ Castles, A.C. (1963) <https://hdl.handle.net/2440/14894> The reception and status of English law in Australia. Adelaide Law Review, 1963; 2(1): 1-32. Adelaide Law Review Association, School of Law, University of Adelaide. The reception of statutes from the UK was complex and varied between states. It was not without ongoing controversy until the Colonial Laws Validity Act (1865) was passed. A series of colourful disputes followed the interpretations of the South Australian Supreme Court's Justice Benjamin Boothby, of whom his biographer said had learning that '*was neither deep as a well, nor as wide as a Church door, was at least as extensive as that of the average barrister who was a candidate for a colonial judgeship*'.

progressively reformed and improved through jurisprudence where lessons learnt from others' litigation effectively benefit the community at large.¹²⁵ The balance between Australian parliaments and the courts, traditional rights and freedoms, their place under the Constitution together with an adaptive 'principle of legality', effectively affords protection to landholders and citizens alike:

*[T]he principle of legality means that Parliament must squarely confront what it is doing and accept the political cost. Fundamental rights cannot be overridden by general or ambiguous words. This is because there is too great a risk that the full implications of their unqualified meaning may have passed unnoticed in the democratic process. In the absence of express language or necessary implication to the contrary, the courts therefore presume that even the most general words were intended to be subject to the basic rights of the individual.*¹²⁶

That these basic rights include the protection of an individual's private property rights has been long established, deeply rooted and deemed worthy of recognition and protection.¹²⁷ Under law, a property or leaseholder has a right to unfettered 'quiet enjoyment'¹²⁸ of a property or an asset. The conflict nexus comes where another party infringes upon those rights to, or values of, that asset. During litigated land-use conflicts, courts will determine property rights, just terms of compensation and compulsory acquisition, together with the torts¹²⁹ of nuisance and trespass. However, the nexus broadens further when community assets¹³⁰ are used, devalued, or deleteriously impacted. Such community assets are 'silent parties', unrepresented in the litigation. For the purposes of this

¹²⁵ Australian Law Reform Commission (2016) Traditional Rights And Freedoms—Encroachments By Commonwealth Laws (ALRC Report 129) <https://www.alrc.gov.au/publication/traditional-rights-and-freedoms-encroachments-by-commonwealth-laws-alrc-report-129/2-rights-and-freedoms-in-context/common-law-foundations/>.

¹²⁶ Lord Hoffmann in Australian Law Reform Commission (2016) Traditional Rights And Freedoms—Encroachments By Commonwealth Laws (ALRC Report 129) <https://www.alrc.gov.au/publication/traditional-rights-and-freedoms-encroachments-by-commonwealth-laws-alrc-report-129/2-rights-and-freedoms-in-context/common-law-foundations/> at 2.30

¹²⁷ Australian Law Reform Commission, Traditional Rights and freedoms—Encroachments by Commonwealth Laws, Issues Paper No 46 (2014) Ch. 19.

¹²⁸ Collins Dictionary of Law (2006), <https://legal-dictionary.thefreedictionary.com/quiet+enjoyment> accessed 1 November 2021.

¹²⁹ Or *wrongful acts*

¹³⁰ These community assets are in the forms of the surface water, groundwater, minerals, agricultural potential, ecosystem services, traditional ownership and cultural and spiritual heritage. In Australia, the issue of traditional ownership goes directly to Lt. Cook's assessment of the 'Country [being] uninhabited [and his orders to] take Possession for his Majesty by setting up Proper Marks and Inscriptions, as first discoverers and possessors.'

research, the silent parties are taken to include both the public good¹³¹ and the receiving environment.^{132,133,134}

Individual vs community assets

Australian post-European settlement laws were largely transposed from the United Kingdom, where the ability to secure debt against land had significantly increased from 1604¹³⁵ onwards. Such individual land parcels make up but one part of the landform. On those parcels, the community enjoys assets that are not just held by the landholder, or a mortgager, but also the Crown.¹³⁶ These community assets¹³⁷ (specified in the footnotes here) are in the forms of the surface water,¹³⁸ groundwater,¹³⁹ minerals,¹⁴⁰ agricultural potential¹⁴¹ and ecosystem services.¹⁴² They remain common property, not vested in the surveyed parcel itself but closely interrelated with it. This distinction underscores the economic, social and political relevance of this thesis to the active and silent parties – the stakeholders. Within an economy, surveyed land parcels effectively constitute collateral. This explains the monetary imperative over and above the project value itself.

Socially, the courts' adjudication, or the deterrent threat of it, is critically important. Individuals, enterprises, the community and the receiving environment all rely on the court system for protection, dispute resolution and as an arbiter of last resort through determinations. In Australia, whilst numerous pieces of legislation and ordinances, both Federal and State, afford the community assets

¹³¹ Rackemann, M (2015) The Planning and Environment Court – Changing Faces, Longevity and a Stable Core. Queensland Environmental Law Association Conference Gold Coast, Queensland. Friday 15 May 2015.

¹³² Detailed in Chapter 5, the nexus between the public good and the protection of the receiving environment often becomes apparent only when the capacity that environment to absorb impacts is measured, understood or exceeded.

¹³³ For example, see: Miller, J. D. and M. Hutchins (2017). The impacts of urbanisation and climate change on urban flooding and urban water quality: A review of the evidence concerning the United Kingdom. *Journal of Hydrology: Regional Studies* 12: 345-362,

¹³⁴ For example, see: Abbasnia, A., et al. (2019). Evaluation of groundwater quality using water quality index and its suitability for assessing water for drinking and irrigation purposes: Case study of Sistan and Baluchistan province (Iran). *Human and Ecological Risk Assessment: An International Journal* 25(4): 988-1005.

¹³⁵ The first Enclosure Act gained British Parliamentary assent in 1604 (Thompson, 2008 p 624).

¹³⁶ As in other parts of the Commonwealth, 'the Crown' can be used interchangeably with 'the Community at large', implying common ownership by way of birthright or citizenship.

¹³⁷ Issues of traditional ownership and cultural and spiritual heritage are intertwined with any reasonable valuation of assets. Whilst not the focus of this thesis, they are acknowledged as often being central to land values.

¹³⁸ Not including rights sold or water allocations in respect of stock and domestic uses and harvestable rights above the vadose zone in the landform. Whilst often limited, these rights are vested in the land.

¹³⁹ Not including rights sold or historically vested in the land. These tend to be volumetrically low.

¹⁴⁰ Not including minerals above the maximum root zone depth of any apposite agricultural crops or native species.

¹⁴¹ Agricultural potential refers here to land identified as worthy of protection for the purposes of producing food, fibre or forestry.

¹⁴² Bennett, J. M., et al. (2019). Soil Security for Australia. *Sustainability* 11(12): 3416.

various protections to differing degrees, it is legislatures and case law that allows a progressive response to new issues and disputes.

Politically, aside from potent local controversies that often swirl around development application determinations, land use conflicts can also be charged when a function of the jurisdiction is to review the decisions of government agencies¹⁴³ whilst still respecting the separation of powers.¹⁴⁴ When such matters are litigated, the court performs the function of a decision-maker in litigation, as opposed to an agency implementing government policy.¹⁴⁵

With population pressures, the impacts from climate change and increasing competition for these community assets, it is inevitable that land-use conflicts will become more complex over time. In such conflicts, the collection, presentation and explanation of accurate and appropriately-interpreted scientific data can make the difference between an informed decision and a harmful mistake that may blight a community and its receiving environment for generations to come.

In the United Kingdom, the concept of quiet (or peaceful) enjoyment of one's land was reinforced through the Enclosure Acts and resulting transformations¹⁴⁶ in land use (and to a lesser extent in the landform, through drainage) that heralded what was to become known as the Agrarian Revolution.¹⁴⁷ Whilst the Enclosure Acts were introduced in the 17th Century, they were further and more widely enacted during the 18th Century. In respect of land-use and capital, there were two consequences: Livestock were enclosed, allowing unimpeded cropping in the absence of grazing; and individual 'lots' of land could be readily surveyed, marked with pegs and then those lots represented on a 'plan' which could be used as proof of title, or ownership. Interestingly, the United Kingdom is not yet fully registered by survey (HM Land Registry 2021). The Government there says that by 2030,

¹⁴³ Rackemann, M. (2017) 29 Environmental Law and Management: How Green is my ECT? The challenge of impartial objectivity. Judge of the Planning and Environmental Court and District Court of Queensland. This goes to the relationship between a legislature and a jurisdiction.

¹⁴⁴ Australian Law Reform Commission (2015) <https://www.alrc.gov.au/publication/traditional-rights-and-freedoms-encroachments-by-commonwealth-laws-alrc-interim-report-127/16-delegating-legislative-power/the-separation-of-powers>. In Australia it is explained thus: "*Under the constitutional doctrine of the separation of powers, parliaments make laws, the executive administers or enforces laws, and the judiciary adjudicates disputes about the law. The doctrine is reflected in the structure of the Australian Constitution: Chapter I is entitled 'The Parliament'; Chapter II, 'The Executive Government'; and Chapter III, 'The Judicature'.*"

¹⁴⁵ The particular importance of this difference is illustrated in the case study of *Hungtat Worldwide v Chief Executive of the Department of Environment and Heritage Protection QPEC1366 of 2013 (2017)* where a Court overturned Clean-up notices issued by a Government Agency pursuing a policy relating to environmental harm.

¹⁴⁶ By formalising the exclusion of livestock with fencing, crops could be more readily grown and harvested.

¹⁴⁷ Kent, N. (1796). *General view of the Agriculture of the County of Norfolk with observations on the means for its improvement*. Published by Richard Phillips, Bridge Street, Blackfriars, London.

Oliver Cromwell's 17th Century assertion that English Land Law is "a tortuous and ungodly jumble" should be resolved when the whole of the United Kingdom will be registered.

That a lot could be surveyed and a plan produced meant that monies could be secured against that property. This allowed for investment in capital improvements and infrastructure. It is no coincidence that it was the East of England, a flat, alluvial landform that could be readily improved by drainage, that became one of the principal areas of early agricultural development and, as a consequence, land-use conflict.¹⁴⁸ With the transposition of English laws across Australian colonies and states, access to rules of law such as land ownership were deemed a 'birthright' for colonists and convicts alike, regardless of country of origin.^{149, 150} For a resource-rich country like Australia, this stable and predictable rule of law²² meant the ready import of capital could be matched by the export of raw materials and agricultural produce,¹⁵¹ initially gold and wool. For the United

¹⁴⁸ Golan (2009) cites Sir John Turner as a recognised leader of the 'Norfolk science of agriculture', who helped Norfolk become a principal site of what contemporaries such as Sir Joseph Banks (President of the Royal Society) and King George III (also known as 'Farmer George') heralded 'the agricultural revolution' and lead Nathaniel Kent (1796) to describe Agriculture as 'unquestionably the first of all sciences, as it nurses and supports the rest'. Notably, Banks' expeditions to Newfoundland and (with James Cook) to Australia preceded his time as President of the Royal Society, dispelling the notion that the first fleet and subsequent settlers came from a land of already commercialised or industrialised farming. That was not the case across the United Kingdom. This is also borne-out by McIvor (1905) who recorded the development (and land clearing) of the Scotland's far north as concurrent with the sectioning and clearing of lands in the New South Wales' Tweed Valley in the 1840's.

¹⁴⁹ Crawford, L.B. (2017) *The Rule of Law and the Australian Constitution*. Australia: Federation Press.

¹⁵⁰ Castles, A.C., (1963) <https://hdl.handle.net/2440/14894> The reception and status of English law in Australia. *Adelaide Law Review*, 1963; 2(1): 1-32. Adelaide Law Review Association, School of Law, University of Adelaide. Scotland had been added to the United Kingdom in 1707. In respect of farming, this was to become significant to the emigration of Scots to Australia, New Zealand and Canada after the upheaval of the Highland Clearances (see also: MacIver, E. (1905). *Memoirs of a Highland Gentleman: Being the Reminiscences of Evander MacIver of Scourie Sutherland, Scotland*. TA Constable, Edinburgh, Scotland).

¹⁵¹ Ville, S. and D. T. Merrett (2020). Investing in a Wealthy Resource-Based Colonial Economy: International Business in Australia before World War I. *Business History Review* 94(2): 321-346. The context and importance of the institutional stability is stated thus at p343:

'...the unpredictable effects of (these) disturbances were constrained within a stable environment. Australia provided a highly stable but also flexible set of institutions. It inherited modernizing British institutions that had provided the political, legal, and commercial foundations for Britain's economic hegemony in the mid-nineteenth century. At the same time, the Australian colonies successfully modified some of these institutions to make them more appropriate for a different national setting. Two important changes were the introduction of no-liability company legislation from 1870 to encourage mining investment and greater accommodation of lending on rural land to facilitate agricultural and pastoral development from the mid-nineteenth century.

A variety of resources in the host economy can be attractive to foreign firms, including natural resources, skilled labour, and government incentives. Australia possessed an abundance of natural resources, which provided a substantial comparative advantage in the production of resource industries, including a wide range of pastoral products and mining ores.

Since most of Australia's extracted resources were exported, this provided opportunities for multinational enterprises with extensive geographic reach to value add in distributional channels along the supply chain to and from Australia as well as in production and financing... Multinationals found their way into many nations that were abundant in natural resources but often still at an evolving stage of economic development. Australia, by contrast, was by the late nineteenth century already emerging as a successful resource-based economy whose population, though relatively small and scattered, enjoyed one of the very highest per capita incomes in the world'.

Kingdom, this meant that capital could be confidently invested abroad¹⁵² and that a tradition of home-nation emigration could be fostered, effectively extending its national interest.¹⁵³ Promoted by the ‘Establishment’ in London to extend influence and generate trading income, chartered investment vehicles such as the Hudson Bay and East India Companies traded in Canada and China respectively, enjoying monopoly trading arrangements afforded by the Crown and protected by the Royal Navy. This model of investment limited shareholder liability and effectively managed competition. The formula was repeated by, for example, the Australian Agricultural Company (AAC), cited as “a powerful combination of free and state enterprise”.¹⁵⁴

A necessarily sophisticated management of land tenure and the use of chartered investment vehicles, represented by local agents, resulted in Australia economically leap-frogging other New World countries. These same circumstances in combination resulted in ongoing progressive policy changes and legal responses to land-use conflicts. Whilst New South Wales has a longer history of case law than Queensland, in more recent decades the latter’s planning and environment apparatus has arguably been tested to a greater degree. This period (starting in 1989)¹⁵⁵ saw in Queensland the focus of significant legislative change, coincidental interstate migration (resulting in rapid land development), resource booms in gas and coal (resulting in further resource exploitation of the Surat and Bowen basins) and, with increased use of groundwaters, ongoing agricultural development.¹⁵⁶ Thus, it is natural that the degree of land-use conflict will become ever larger and more wide-spread. This in turn, through the litigation process, elicits further reforms and responses from the legislatures and courts.¹⁵⁷

In the Australian context, that a small, scattered regional populous is afforded the same protective rights under law as an investing multinational enterprise remains a central, underlying tenet of environmental protection, sustainability, intergenerational equity and confidence in the courts. In the context of this research, it is evident that an historical reliance on the principles and the absolute

¹⁵² Taylor, A. M. and J. G. Williamson (1994). Capital Flows to the New World as an Intergenerational Transfer. *Journal of Political Economy* 102(2): 348-371. In this order, the New World countries of Australasia, the United States, Canada and Argentina saw significantly greater real wage and population growth in the period from 1870 – 1913 than the United Kingdom, by far the largest capital provider.

¹⁵³ Marczuk, Karina Paulina, *Origins of Immigration to Australia, 1787-1914* (2017). Arhivele Olteniei, 31, 39-50, SRN: <https://ssrn.com/abstract=3309591>.

¹⁵⁴ Holcomb, J. (2012). George Bunn and Co: A study in British venture capital and company formation in early-colonial Australia. *Journal of Australian Colonial History* 14: 29-48 (quoting Atkinson, A.).

¹⁵⁵ In Queensland, this period saw the Fitzgerald (anti-corruption) Inquiry outcomes enforced, the election of the Goss Labor Government, the end of the ‘Beljke-Peterson era’ and the proclamation of Environmental Protection Act (1994).

¹⁵⁶ Sutherland, N. (2011). The efficacy of joint reports in narrowing technical issues during litigation. *National Environmental Law Review* (1): 50-53.

¹⁵⁷ Tan, P.-L., et al. (2012). Continued challenges in the policy and legal framework for collaborative water planning. *Journal of Hydrology* 474: 84-91.

nature of data collection, recording and veracity all underpin the economic, social and legal settings of the common law system. As such, expert opinion (which is also relied upon by the courts) should also reflect these principles.

Predicting future land-use conflicts and litigation

The management of land resources in many instances benefits from a process that identifies the what, where and why of land-use conflicts. Jing et al (2021) sought to identify the nature of land-use conflicts using a suitability analysis to predict the location of future land-use conflicts ('the what') using multi-objective suitability criteria.¹⁵⁸ The 'where' of land-use conflict was the subject of Iojă et al.'s (2014) study¹⁵⁹ that focussed on spatial distribution of conflict using land surface, population density, infrastructure and loss of agricultural lands as key indicators. Based on similar criteria, Brown and Raymond (2014)¹⁶⁰ studied conflict mapping methods. The 'why' of land-use conflict was studied by Izakovičová et al (2018)¹⁶¹ and Torre et al (2021).¹⁶² They found that conflicts were inevitable when there was competition for limited resources (such as land) between private and/or community interests, yielding a need for mitigation.

The next stage is how land use conflict is mitigated and/or managed. Hersperger et al (2015)¹⁶³ focussed on strategies to reduce conflicts (primarily by conflict negotiation). Similarly, Pe'er et al (2020)¹⁶⁴ focussed on ecological sustainability and land-use conflicts relating to agricultural practice and climate change mitigation, with an emphasis on government intervention through funding. In essence, both approaches seek to broker 'a deal'. A global view of these issues was taken by Scheidel et al (2020)¹⁶⁵ who proposed the Environmental Justice Atlas to map and therefore bring attention to land-use conflicts and environmental defenders. Kim and Arnhold (2018)¹⁶⁶ proposed

¹⁵⁸ Jing, W., et al. (2021). Potential Land Use Conflict Identification Based on Improved Multi-Objective Suitability Evaluation. *Remote Sensing* 13(12): 2416.

¹⁵⁹ Iojă, C. I., et al. (2014). Using multi-criteria analysis for the identification of spatial land-use conflicts in the Bucharest Metropolitan Area. *Ecological Indicators* 42: 112-121.

¹⁶⁰ Brown, G. and C. M. Raymond (2014). Methods for identifying land use conflict potential using participatory mapping. *Landscape and Urban Planning* 122: 196-208.

¹⁶¹ Izakovičová, Z., et al. (2018). Integrative assessment of land use conflicts. *Sustainability* 10(9): 3270.

¹⁶² Torre, A., et al. (2021). Socioeconomic conflicts and land-use issues in context of infrastructural projects. *Asia-Pacific Journal of Regional Science* 5(1): 241-260.

¹⁶³ Hersperger, A. M., et al. (2015). Comprehensive consideration of conflicts in the land-use planning process: a conceptual contribution. *Carpathian Journal of Earth and Environmental Sciences* 10(4): 5-13.

¹⁶⁴ Pe'er, G., et al. (2020). Action needed for the EU Common Agricultural Policy to address sustainability challenges. *People and Nature* 2(2): 305-316.

¹⁶⁵ Scheidel, A., et al. (2020). Environmental conflicts and defenders: A global overview. *Global Environmental Change* 63: 102104.

¹⁶⁶ Kim, I. and S. Arnhold (2018). Mapping environmental land use conflict potentials and ecosystem services in agricultural watersheds. *Science of The Total Environment* 630: 827-838.

an agricultural land-use suitability index, applying the Revised Universal Soil Loss Equation to assess soil erosion. All these approaches, methods and assessments require at least one definitive data set of an appropriate quality.

In respect of recent advances in data acquisition, storage and assessment, the use of increasingly accurate remote and geo-sensing¹⁶⁷ data for resource mapping and predictive modelling¹⁶⁸ across all industry sectors can yield users a competitive advantage.¹⁶⁹ Here, the argument will be made that these data not only yield litigants particular advantages but also the courts. The inference is that the better the data, the less likely it is that conflict will result. These advantages are not only wrought from the data themselves but from the context of the data sets. Conceptually, if a data set can be objectively ascribed a statistical *context* in respect of its error rate, reliability and repeatability, an adjudicator can confidently make an assessment. By this I mean, the adjudicator is made aware of any caveats on how he or she should interpret the data. Thus, such an assessment can be made in the knowledge of precisely what it has been based on, not just ‘the best information available’ (as is so often cited).¹⁷⁰

Most stock exchanges, including those in Australia, the United Kingdom and the United States, classify companies based on their primary business activities allowing for investment in specific interests or financial diversification. For example, the Standard and Poor’s Sectors Index¹⁷¹ groups 11 sectors (in descending size) as follows: Information Technology, Health Care, Financials, Consumer Discretionary, Communication Services, Industrials, Consumer Staples (including listed agricultural enterprises), Energy, Utilities, Real Estate, and Materials (including mining). It is in (and between) the sectors of agriculture, energy, utilities, real-estate development and mining that most land-use conflicts are fought. These conflicts are, in large part, market-driven and are foreseeable. Under the common law system, they are resolved through litigation and the case law that ensues.

¹⁶⁷ Giezen, M., et al. (2018). Using remote sensing to analyse net land-use change from conflicting sustainability policies: the case of Amsterdam. *ISPRS International Journal of Geo-Information* 7(9): 381.

¹⁶⁸ Karimi, A. and G. Brown (2017). Assessing multiple approaches for modelling land-use conflict potential from participatory mapping data. *Land Use Policy* 67: 253-267.

¹⁶⁹ Kuhn, S., et al. (2018). Lithologic mapping using Random Forests applied to geophysical and remote-sensing data: A demonstration study from the Eastern Goldfields of Australia. *Geophysics* 83(4): B183-B193.

¹⁷⁰ ‘The best information available’ see for example: NSW Department of Primary Industries (2021). Draft State Significant Agricultural Land Map. <https://nswdpi.mysocialpinpoint.com/ssal>

¹⁷¹ S&P Sectors Index: <https://www.spglobal.com/spdji/en/landing/investment-themes/sectors/>

Land-use conflicts – jurisdictional responses

This thesis deals with the treatment of conflicts that have already progressed to litigation through legal proceedings which relate to expert evidence, specifically those dealing with land capability. In such litigation, the judge's application of statutory criteria (from the laws in force at the time) together with some guidance from previous court decisions (particularly in relation to the interpretation of statutory provisions, to the facts presented to him or her, including facts based on expert opinion) is in the public good. It is a honed system, adapting over time, reflecting not only changes in statutes but also better knowledge and enlightenment that through its use acts for the good of the community.

There is a distinction between laws and subordinate policies enacted by legislatures and those enunciated through the courts by case law, where the adjudicator interprets the laws of the land and precedents to settle a dispute. Definitionally, active parties to a legal proceeding either represent themselves in court or have others (generally lawyers and barristers) to do it for them. Unrepresented stakeholders that still have an interest in the proceedings are 'silent parties'. In this, matters heard in such jurisdictions can form public interest litigation where silent parties' interests, such as the public good, are effectively protected by the courts.

It has been long accepted that in hearing public interest litigation, the courts act in the public good. Viewing the public good as a silent party, whose interests should be considered, is a relatively new but fundamental concept, promulgated by Rackemann (2015).¹⁷² He points out that litigation in land, planning and environment courts is often broader than debt-related disputes in other jurisdictions. It is in the public interest that the underlying issues in the dispute are considered and resolved in a way that results in a better outcome for the community and the environment.

In a practical sense, no land use occurs in isolation. The land that is put to a use exhibits certain characteristics which give rise to values that can be qualified and quantified. The ecosystems surrounding it, the atmosphere above, the landform and groundwaters below and the surface waters downstream of a given use, individually or collectively, can each be impacted by that use. Relative to the use, they form the receiving environment. This concept implicitly acknowledges that any use that employs surrounding physical assets (usually as its waste treatment facility or a component of it), at little or no cost, is effectively transferring wealth from its neighbour(s) and/or the broader community, to the owner. This thesis seeks to refine this concept by postulating that the receiving

¹⁷² Rackemann, M (2015) The Planning and Environment Court – Changing Faces, Longevity and a Stable Core. Queensland Environmental Law Association Conference Gold Coast, Queensland. Friday 15 May 2015.

environment, as it relates to any land use application or project, is in effect another silent party. It follows then that the protection of the receiving environment is, in itself, a public good.

Whilst the degree of infringement of rights or values is often contested between the parties, this thesis assumes that litigation will be brought principally in one of two ways: Firstly, as a civil case involving just the parties; or secondly, as a criminal case between a party and the state, representing the broader community.



Plate 5. Grassland after flood along the river flats of Blacks Creek, downstream of Turner's Pit and south of Kings Forest, a development of 4500 dwellings on the Tweed Coast of northern New South Wales. The project remains the subject of considerable upset in the local community and has involved various litigations. Assessors of this project have faced the vexed question of when highly disturbed ecosystems, previously used for agriculture, have adapted enough to warrant protection. The project has now commenced. (Photograph by author, 2020).¹⁷³

Because the sanctions in the latter are generally higher, there is a higher burden of proof required. As opposed to the required establishment of facts 'on the balance of probabilities' (in a civil case), in a criminal case, facts need to be proven 'beyond reasonable doubt'. For an expert witness in any discipline of science, this presents a particular challenge in communicating data limitations, mapping accuracy, modelling error, uncertainty and statistical validity.

In respect of a party's rights, this thesis assumes that these are usually defined in the context of in-force statutes or laws. Often, some lesser weight is given to those that have been repealed or those

¹⁷³ The disputes, across different jurisdictions, have involved contentions regarding zoning, approvals, land clearing, groundwater protection, koala management and coastal development in respect of climate change.

that are in a draft form with some prospect of enactment. In certain circumstances, the rights are not defined or the statute itself infringes or limits land-uses itself, as was the case in *Koowarta*¹⁷⁴ where the state sought to curtail land-use rights along water courses. This was a physical landform dispute, where the essential disputed characteristics (in this case land and water resources) were capable of being measured and assessed. Here the expert's role was clear – to gather and interpret the data and report upon it. In essence, they were *tangible* values.

The infringement of a party's *intangible* values is altogether more complex. Depending on individual circumstances, by definition, any infraction must go beyond that which can be measured and compensated for by money.¹⁷⁵ In that way, compensation (or 'injurious affection') would be generally higher than the land value itself, reflecting a diminution of the party's ability to use the land – a reduction in the capability of both the party and the land. Similarly, 'rights or values' must include visual, cultural, heritage and spiritual values, not just legally-enforceable tenures of land purchases or water allocations. To an extent, they are intangible.

Whilst the science of land assessment does not extend to the valuation of these intangibles, not appreciating these values risks arbitrarily disenfranchising those who do not have the necessary means to defend their rights. In addition to the silent parties, those most vulnerable are the poor and weak. Such disenfranchisement engenders further conflicts in itself – either contemporaneously or effectively storing them up for the future – a societal necrosis. Where there is a nexus between survey and disenfranchisement, where the tangible and intangible must be separated, is precisely when land-use conflicts come before the courts. Given that such disputes typically combine the tangible and intangible into one set of 'issues in dispute', it is both the expert's duty (and to the benefit of the courts) to separate the tangible from the intangible. Herein lies the land-capability assessment problem in land-use conflicts: Courts appreciate certainty, in a milieu of imperfect data and competing opinion. In this, courts need *context* to understand the weight that should be placed upon the opinions based on the cited data.

Having established the causes and nature of land-use conflicts, the next section addresses the role of expert scientific evidence within them.

¹⁷⁴ *Koowarta v State of Queensland* [2014] FCA 627 where, based on inaccurate mapping, the State of Queensland had sought to curtail rights along water courses using the *Wild Rivers* Legislation.

¹⁷⁵ Unless one party purchased a resource asset in the knowledge of the conflict.

The characteristics and role of specialist, scientific expert evidence

When a court has insufficient information or knowledge in any area, it seeks opinion-based help from qualified and/or experienced individuals in the form of expert evidence. Whilst any expert is required to observe rigid rules in preparing and producing evidence, a scientific expert needs to collect adequate data to assess the issues in the matter, analyse the data, evaluate the analysis¹⁷⁶ and then synthesise a view¹⁷⁷ that forms his or her expert opinion. As such, the evaluation and the synthesis do not directly form part of this research, as they remain the purview of the individual expert and, as previously stated, an ethical responsibility attached to providing evidence.

Whilst there is variation in court rules, peculiar to each jurisdiction, they follow central dicta concerning who and what may be admissible to the court. The Australian High Court Rules¹⁷⁸ provide that:

“...an expert ‘in relation to a question, means a person who has specialised knowledge about matters relevant to the question based on that person’s training, study or experience’.”

Similarly, the Australian Federal Court Rules¹⁷⁹ define terms around who is an expert and what constitutes expert evidence. Such evidence is routinely deconstructed and tested by each party, its counsel or its representatives in an adversarial arena.¹⁸⁰ Under this system, the expert witness holds a unique, privileged position of being the only witness that may express their *opinion* in a way that is admissible in court. In this, whilst treated like any other court witness, the expert necessarily carries an additional, significant duty to the court.

Common principles apply, although the exact form of that duty differs from jurisdiction to jurisdiction. Accepting that the courts apply the law to facts, the overwhelming aim of those principles is the pursuit of objective truth to inform the court, so that it may be helped in dispensing the most just decision. Thus, the expert evidence’s degree of ‘helpfulness’ can be critical in deciding

¹⁷⁶ Here, the analysis may be in the form of a laboratory or statistical analysis without an evaluation or interpretation.

¹⁷⁷ The synthesis of a view within the preparation of expert evidence follows the evaluation of an analysis as to its significance to the issues in dispute. This then goes on to form the expert’s opinion, which is tested by the court.

¹⁷⁸ Australian High Court Rules at Order 34 Rule 1A.

¹⁷⁹ The Federal Court Rules 2011 (http://classic.austlii.edu.au/au/legis/cth/consol_reg/fcr2011186) include a dictionary with the following definitions:

“expert” means a person who has specialised knowledge based on the person’s training, study or experience.

“expert evidence” means the evidence of an expert that is based wholly or substantially on the expert’s specialised knowledge.

Note: For the admissibility of the evidence of the opinion of an expert, see section 79 of the Evidence Act.

“expert report” means a written report that contains the opinion of any expert on any question in issue in the proceeding based wholly or substantially on that expert’s specialised knowledge, including any report in which an expert comments on the report of any other expert.

¹⁸⁰ Gallagher, J (2016). John Gallagher QC Pers. Comm.: “*Court is the last Colosseum*”.

what is preferred by the court, and that concept underpins this thesis. It is in this context then, where scientific facts are incomplete, obsolete, partial or contentious, that the court may be left to rely on an individual's performance during the proceeding, whether by the expert witness and/or the counsel advocating the case. This can mean that the determination of the issues may turn on the theatre of the presentation – the performance, as opposed to the epistemic substance of the underpinning assumptions, information, data and assessments.

Accepting the premise that substance should prevail over theatre, the courts face the difficult task of reliably weighing scientific assessments in the absence of sufficient objective facts. In the context of current court procedures in Queensland and NSW, the principal aim of this thesis is to develop an objective, replicable method (an '*indicant*') for assessing the relative substance of each expert's landform, agricultural and water resources evidence. Aside from specific circumstances,¹⁸¹ in the absence of their own data, experts can rightfully only diverge with another expert about the synthesis of the view, not the data itself. Where an indicant could usefully work is where experts' own evaluations are directly contrasted.¹⁸²

The derivation, adducing and presentation of scientific expert evidence for litigation was identified by Golan (2009)¹⁸³ as being "long-overlooked" at the institutional intersection of science and law. His text *Laws of Men and Laws of Nature* is an authority in the examination of the history of case law and the use of scientific evidence in both the United Kingdom and the United States. He argues that the modern trial judge is no longer a passive umpire but an active gatekeeper "charged with the responsibility of screening unreliable expert evidence." From the perspective of formulating landform, agricultural and water expert evidence in Australian courts, this review draws on Golan's observations as to the history of this nexus between science and law, but also develops a further theme from more recent research. This is that expert evidence needs to be *helpfully* placed in sufficient context for the court to understand its quality and thus its reliability. This is a key part of this research. That this is largely the responsibility of the expert providing the evidence becomes apparent through this review.

Golan's examination of the development of the scientific method, together with the emerging use of expert testimony effectively explains the structures, strictures and rules in many common law

¹⁸¹ The specific circumstances relate to an expert who has been instructed not to collect data for any reason. For example, a Respondent by Election retaining an expert may resolve to take a lesser role in a proceeding, placing a direct limitation on costs. In any event, this would need to be declared by the expert.

¹⁸² For example, experts could be critical of another expert's data-based opinion in the absence of collecting any data themselves. In that case, it would be apparent that such criticism should be weighted accordingly.

¹⁸³ Golan, T. (2009). *Laws of men and laws of nature: the history of scientific expert testimony in England and America*. Cambridge (Massachusetts): Harvard University Press.

jurisdictions. During litigation, lawyers need to manage their clients: appellants, respondents or defendants and any expert witnesses (whom, by definition, would not be required if the court had their requisite specialist knowledge or experience). If the matter cannot be settled, the lawyer must also contend with the judge, adjudicator, tribunal, panel or jury, each bringing their own particular experiences, interests and knowledge to the contest. Additionally, a scientist untrained in litigation may not fully appreciate or comprehend the role and impact of their evidence within a case or a court's processes and procedures. There are published rules, often peculiar to the jurisdiction, that have a common aim. As expressed by Chief Judge of the Land and Environment Court of New South Wales (Preston, 2008) the rules are designed to achieve the "just, quick and cheap resolution of proceedings."¹⁸⁴ Then there are the lawyer's techniques, procedures and (also honed) professional manipulations that, under an adversarial approach, are designed to dismantle and expose any opinion that is not based in fact, whilst establishing doubts about data or assertions that do not benefit their case. It is on this point, by ensuring the underpinning data quality is understood in its context, that the scientist can better help the courts.

Science and law – the cultural gap

*"Lawyers are shy of meddling with the Law on their own account: knowing it to be an edged tool of uncertain application, very expensive in the working, and rather remarkable for its properties of close shaving than for its always shaving the right person."*¹⁸⁵

*"Trial by combat of wits in disputations has no attraction for the seeker after truth; to him, the appeal to experiment is the last and only test of the merit of an opinion, conjecture, or hypotheses."*¹⁸⁶

What Faigman et al (2014)¹⁸⁷ cite as "a basic cultural and language gap ...bridged by courts everyday"¹⁸⁸ is, in essence, a tightrope that a scientific expert must walk during each stage of contract acceptance, data collection, analysis, the preparation of evidence and cross examination.

¹⁸⁴ Preston, B. (2008). Operating an environment court: The experience of the Land and Environment Court of New South Wales. The Hon. Justice Brian J Preston Chief Judge Land and Environment Court of NSW. Inaugural Distinguished Lecture on Environmental Law, The Environmental Commission of Trinidad and Tobago, 23 July 2008, Port of Spain Trinidad and Tobago.

¹⁸⁵ For a party to proceedings on lawyers and experts: Charles Dickens (1848). The Old Curiosity Shop ... With a Frontispiece. From a Painting by Geo. Cattermole, Etc, p.168 in Schlicke, P. (2011). Old Curiosity Shop, The, Oxford University Press.

¹⁸⁶ For the lawyer on scientists: Joseph Mellor, Chemist 1869 to 1938 (unknown date).

¹⁸⁷ Faigman, D. L., et al. (2014). Group to Individual (G2i) Inference in Scientific Expert Testimony. The University of Chicago Law Review 81(2): 417-480.

¹⁸⁸ Each land, planning and environment jurisdiction in New South Wales and Queensland is now actively engaged in offering participatory training to potential witnesses to better explain jurisdictional expectations of experts.

That the expert is duty-bound to help a court is writ large throughout this thesis. The legal concept of ‘helpfulness’, in this context, is a central tenet.

However, the cultural gap is not a new concept. In reviewing the text *Law and Science*, Edmond (2000)¹⁸⁹ cites conspicuous absences that “re-affirm the breath of the field” and critically notes one essay author talking to science’s “mythological qualities”. If the science underpinning evidence needs to be deconstructed to a molecular level for a court to understand the underpinning propositions of an expert’s evidence, then so be it. That must be the scientific expert’s job.

Fundamentally, the scientist and the lawyer pull in opposite directions. The scientist strives to generalise wherever possible, grouping measurements and reporting them statistically. The lawyer seeks to particularise each individual circumstance¹⁹⁰, so differences in evidence can be adduced and presented in a way that favours their client more so than the opposition – in essence so that he or she can *win* the case.

Consequently, a scientific expert must explain scientific concepts relevant to a particular site or project to non-scientists who, for their own ends, may want to (naturally and deliberately) ignore, conflate or seek to marginalise generalities in the interests of time, expense or advocacy. Edmond et al (2018) go to the central issue of the perceived quality of opinion-based expert evidence:

*“Quality is an ambiguous concept. It could refer to the performative quality of the evidence – whether the witness is clear, confident, answers questions without evasion and so on – or to its epistemic quality: whether it accurately communicates good reasons for and against believing a (disputed) proposition. Performative quality is like the quality of a sharp knife – it enhances the effectiveness of the evidence for good or ill.”*¹⁹¹

In land-use conflicts, and in the absence of adequate information, legal practitioners, allied professionals and recidivists alike may be tempted to cloak, twist or otherwise discard the truth for their own purposes or those of others.¹⁹² To overcome this, the Australian political and social system

¹⁸⁹ Edmond, G. (2000). "Law and Science: Current Legal Issues Volume 1 Reviews." *Int'l J. Evidence & Proof* 4: 137.

¹⁹⁰ Faigman, D. L., et al. (2014). "Group to Individual (G2i) Inference in Scientific Expert Testimony." *The University of Chicago Law Review* 81(2): 417-480.

¹⁹¹ Edmond, G., Ferguson, A., & Ward, T. (2018). Assessing concurrent expert evidence. *Civil Justice Quarterly*, 37(3), 344-366. <http://nrl.northumbria.ac.uk/32674/>

¹⁹² McGinnis, J. O. (2003). Lawyers as the Enemies of Truth. *Law and Truth: Twenty-First Annual National Student Federalist Society Symposium on Law and Public Policy - 2002: Roundtable: The Lawyer's Responsibility to the Truth*. *Harvard Journal of Law & Public Policy* 26(1): 231-234.

relies on an independent judiciary, free from interference.¹⁹³ It adjudicates through the courts where competing interests are weighed, having heard advocated positions for, or by, parties to the dispute.

As noted, the Australian High Court Rules¹⁹⁴ provide that an expert “in relation to a question, means a person who has specialised knowledge about matters relevant to the question based on that person’s training, study or experience.” Similarly, the Australian Federal Court Rules¹⁹⁵ define terms around who an expert is and what constitutes expert evidence. Such evidence is routinely deconstructed and tested by each party, its counsel or its representatives in an adversarial arena.¹⁹⁶ Whilst these rules vary between jurisdictions in relation to procedure, the principles relating to experts are largely the same.

There is no doubt that clarity of expression by a witness, and giving answers without evasion, will help the court to assess the epistemic quality of the witness’s evidence, or in other words whether it is in substance correct. Whilst the court’s conclusion may not favour the witness, that is not the objective of the evidence. Faigman et al (2014)¹⁹⁷ identify a divide between what scientists do and what is demanded of them as expert witnesses. This goes to inquiry at a group level as opposed to litigation at an individual level. They argue that scientific knowledge derived from studying groups can be helpful in the individual cases (referred to as ‘G2i’ – ‘Group to Individual’ inference). The authors propose an evidentiary distinction between framework evidence for general scientific propositions and diagnostic evidence that applies the general propositions to the case in point. They also propose admissibility standards that differ depending on whether experts are proffering framework or diagnostic evidence.

Edmund et al (2018)¹⁹⁸ argue for court reform, guidance and advice based on serious assessment using recognisable analytical tools rather than the “bare impressions of a few participants.”¹⁹⁹ They

¹⁹³ Feldman, D. (1990). "Democracy, the Rule of Law and Judicial Review". *Federal Law Review* 19(1): 1-30.

¹⁹⁴ Australian High Court Rules at Order 34 Rule 1A,

¹⁹⁵ The Federal Court Rules 2011 (http://classic.austlii.edu.au/au/legis/cth/consol_reg/fcr2011186) include a dictionary with the following definitions:

‘expert’ means a person who has specialised knowledge based on the person's training, study or experience.

‘expert evidence’ means the evidence of an expert that is based wholly or substantially on the expert's specialised knowledge. Note: For the admissibility of the evidence of the opinion of an expert, see section 79 of the Evidence Act.

‘expert report’ means a written report that contains the opinion of any expert on any question in issue in the proceeding based wholly or substantially on that expert's specialised knowledge, including any report in which an expert comments on the report of any other expert.

¹⁹⁶ Gallagher, J (2016). John Gallagher QC Pers. Comm.: ‘*Court is the last Colosseum*’.

¹⁹⁷ Faigman, D. L., et al. (2014). Group to Individual (G2i) Inference in Scientific Expert Testimony. *The University of Chicago Law Review* 81(2): 417-480.

¹⁹⁸ Edmond, G., Ferguson, A., & Ward, T. (2018). Assessing concurrent expert evidence. *Civil Justice Quarterly*, 37(3), 344-366. <http://nrl.northumbria.ac.uk/32674>

¹⁹⁹ Ibid, p19 (of original text).

argue that “*such assessment should be grounded in procedures that are demonstrably valuable, have clearly understood mechanisms of operation, and can be guided by evidence as to the conditions in which they are most likely to produce desirable and undesirable results. Moreover, reformers should directly address these non-trivial role changes.*” Rather than planning an emphasis on court procedures they call for reforms “to be informed by rigorous empirical research.”

As a tangible example, Holley et al (2021)²⁰⁰ argue that ‘regulator capture’ is a demonstrable risk where well-resourced energy sector firms operate in an environment where regulators are under-resourced. Amongst others, they use the regulation of the gas industry in Queensland to highlight the problem. In turn, this highlights the importance of enforcement proceedings and the courts to the broader community.

In a statistical analysis of expert testimony, Perillo et al (2021)²⁰¹ argue that experts who initially favoured the prosecution or defence showed adversarial allegiance regardless of the way their testimony was delivered (concurrently or sequentially). This is not peculiar to experts. This is, in part, a human condition where loyalty to your provider or employer is expected, or “Don’t bite the hand that feeds you.”

In an overall sense then, litigation is a small but vital part of any land tenure and environmental legal system.²⁰² It therefore plays a critical environmental protection role. Litigation is expensive, burdensome and importantly, deterring. Litigation’s very threat (and sanctions of fines and incarceration) deters individuals breaching approvals and conditions or committing crimes. It also gives individuals or submitters the ability to have their side of the story heard if they face a richer, better-resourced foe.

In jurisdictions such as Queensland’s Planning and Environment Court and Land Courts together with NSW’s Land and Environment Court, submitters are given the same standing and possibly greater latitude, as they often lack legal training. However, submitters often find sourcing expert evidence to oppose a litigant too expensive, if they are unable to rely on volunteers or pro-bono

²⁰⁰ Holley, C., Kennedy, A., Mutongwizo, T., & Shearing, C. (2021). Public Servants and Regulator Capture in Energy and Environmental Governance. In *The Palgrave Handbook of the Public Servant* (pp. 835–852). Springer International Publishing. https://doi.org/10.1007/978-3-030-29980-4_7

²⁰¹ Perillo, J. T., et al. (2021). Testing the waters: An investigation of the impact of hot tubbing on experts from referral through testimony. *Law and Human Behavior* 45(3): 229.

²⁰² McGrath, C., (2011) ANU College of Law. Graduate Program in Law. Environmental Litigation Course Materials. LAWS8187 CLASS 7561 6-8 July 2011.

services.²⁰³ As well as relying on donations, the Environmental Defenders Office in Australia receives public funding from States and Territories.²⁰⁴

Having addressed then the evaluation of land and water resources, the nature of land-use conflicts and how those evaluation data may inform any particular conflict, the next section addresses issues resulting from expert evidence in these areas.

The issues resulting from expert landform, agriculture and water resource evidence

Faigman et al²⁰⁵ (2014) describe a key dichotomy. The scientist seeks to generalise wherever possible, grouping measurements and reporting them statistically. The lawyer seeks to particularise each individual circumstances so differences in evidence can be adduced and presented in a way that favours their client more so than the opposition, in essence so that he or she can *win* the case. The result for the scientific expert is that the more general, non-specific and broad their evidence is, the greater their ability to side-step making specific concessions which might damage their client's case. This might help the instructing lawyer who has called that expert (and may ensure further work for the expert in the future) but is less helpful to the court.

The fact that courts find assessing competing expert scientific evidence, particularly in respect of testing, analyses, modelling and statistics, singularly difficult is well recognised and documented in the literature. Selby (2010)²⁰⁶ explores the debate among investigative scientists presenting results in litigation where “numerical ratings are eschewed.”

Whilst acknowledging key legal differences between the systems used in Australia (and the United Kingdom) and the United States, and these are reflected in the legal writings, there are common difficulties evident in attempting to measure expert evidence.

²⁰³ Bragg, J.-A. (2006). Community litigants in the Queensland planning and environmental legal system, National Environmental Law Association. March 2006 ISSN:1445-405X.

²⁰⁴ Environmental Defenders Office: Our Funding https://www.edo.org.au/our-funding/?gclid=EAIaIQobChMIzr-Fy5Hn8gIVS5JmAh2DKwniEAAYASAAEgL4LfD_BwE

²⁰⁵ Faigman, D. L., et al. (2014). Group to Individual (G2i) Inference in Scientific Expert Testimony. The University of Chicago Law Review 81(2): 417-480.

²⁰⁶ Selby, H. (2010). When science comes to court. Issues arising in the presentation of expert forensic science evidence to the court Australian journal of forensic sciences 42(3): 159-167.

Difficulties in measuring expert evidence

Prefontaine (2019)²⁰⁷ cites the billion-dollar Johnson & Johnson case to argue that the inconsistent application of evidentiary standards of expert testimony admissibility creates ambiguity and unpredictability in litigation. Recognising the trial judge's gatekeeper duties, she argues for a detailed application of the Frye test²⁰⁸ to minimise the harms of "litigation tourism."

Haack (2019)²⁰⁹ argues that past legal efforts to assess the reliability of expert testimony are inadequate, offering little practical guidance. She argues not for the amendment of evidentiary rules, but for guidance to assist judges and lawyers on questions or standards they should ask of the expert evidence.

Andretta et al (2019)²¹⁰ propose a Structured Statistical Judgement (SSJ) code for court-appointed experts to allow judges to assess the admissibility of expert witness testimony "on the reliability and validity of empirical observations." This code attempted to derive and apply a simple statistical reliability to court-appointed expert witness testimony by critically evaluating 93 published psychiatry articles against a list of criteria used to describe the statistical data sets in those articles. The code employed a 'yes/no' survey method that sought to identify which of the 93 articles had the most appropriate statistical treatment of the data in that article. This research was extended to assess evidence used by the court by two independent assessors as a basis for the assessment of the reliability of the information. Whilst this would not work in practice as the code cannot be readily applied to land capability assessment, the principle of comparative analysis that it adopts can indeed be applied here.

Chin et al (2020)²¹¹ assess whether procedural reforms can effectively regulate expert witnesses, exploring the duty of the expert and arguing for robust codes of conduct that experts cannot interpret

²⁰⁷ Prefontaine, N. (2019). Talcum Powder and Expert Power: Admissibility Standards of Scientific Testimony. *Jurimetrics* 59(3): 341-374. Haack, S. (2019). Judging Expert Testimony: From Verbal Formalism to Practical Advice. *QF Quaestio facti. Revista internacional sobre razonamiento probatorio*(1).

²⁰⁸ The Frye test relates to a 1923 Case in the United States where a blood pressure test was called into question. The court determined that scientific methods and expert testimony based on them should be 'generally accepted' by scientists. In the United States, this has been superseded by the Daubert standard where the court defined "scientific methodology" in a series of illustrative factors.

²⁰⁹ Haack, S. (2019). Judging Expert Testimony: From Verbal Formalism to Practical Advice. *QF Quaestio facti. Revista internacional sobre razonamiento probatorio* (1).

²¹⁰ Andretta, J. R., et al. (2019). Applying statistics to the gatekeeping of expert evidence: Introducing the Structured Statistical Judgement (SSJ). *Behavioral Sciences & the Law* 37(2): 133-144.

²¹¹ Chin, J. M., et al. (2020). The new psychology of expert witness procedure, University of Sydney. Can procedural reforms effectively regulate expert witnesses?

as “ethically permissive.” No definitive criteria were presented. Chin’s approach was dissimilar to that of Andretta because it did not propose a method for assessing the duty or obligations identified.

Aside from the continuous (largely technology-driven) improvement in land capability assessment, the issue remains of how courts can improve procedures relating to expert evidence and its interpretation and treatment. Here, that debate is broader, and it is for scientific experts to better understand what form of information the legal system requires of them. Scientists are duty-bound to explain theories, laws, concepts and ideas in such a way that the non-scientist is truthfully and helpfully²¹² informed.

Having addressed resource evaluation, the nature of conflicts and the issues with expert evidence, the next section assesses where this thesis acknowledges the work of others and identifies the research gaps.

Research similarities

Each of the key pieces of research detailed above contributes, in part, to my research. In Kennedy’s examination of environmental justice, she identified an expansive disquiet, where citizen’s opinions were not heard. Andretta’s SSJ and Bennett’s conceptual Soil Security framework sought to integrate land management measures, as this research does in respect of land capability.

This research can be understood as a response to Edmund’s call for recognisable analytical tools and reforms “to be informed by rigorous empirical research.” In respect of procedure, it acknowledges and builds upon Faigman’s distinction between framework and diagnostic evidence. The methods employed by Andretta et al can be usefully adapted, with the distinction being that the indicators of data sufficiency for land and water assessment are explicitly published in the statutory and industry guidelines and codes. In this way, the indicant I propose is similar, but exceeds the conceptualisation of Andretta’s SSJ by also including a process to rank the evidence, reflecting a potential competitive distinction between the litigants. This is required because of the adversarial setting in which the experts produce and present their opinion as evidence.

²¹² Consistent with the definition proffered by Faigman, 2014.



Plate 6. Ian Moore on his beef and fodder farm at Appletree Flat,²¹³ near Jerrys Plains in New South Wales, the site of the proposed Doyle's Creek Coal Mine, the subject of both civil and criminal proceedings. For decades he profitably exploited a near-surface aquifer to grow lucerne (*Medicago sativa*) under rainfed conditions, utilising that species' deep tap roots before litigating his opposition to coal exploration (Photograph by Isabella Moore, 2021).²¹⁴

Research gaps

Noting the limitations of Andretta's research, the research gaps addressed by this thesis are where:

- incorrect or insufficient data is afforded preference because of the unique, privileged position of the scientific expert (being the only type of witness that may express their opinion in a way that is admissible in court);
- land use sustainability, having a long-term time horizon, is being compared with short-term planning horizons and where the data to characterise the land must be appropriate to ensure longevity of use;

²¹³ The disputes involved the regulation of an exploration licence for coal underlying alluvial soils that constitute a highly valued near-surface freshwater aquifer. The civil proceedings centred on the risks associated with the construction of coal exploration bores through the alluvial aquifer. The author was retained by the farmer in the matter of *Moore v Doyles Creek Mining Pty Ltd NSWLEC 173* (2011) of which the outcome is reported here:

<https://www.farmonline.com.au/story/3614550/miner-made-to-move>.

Whilst data on bore integrity is limited, a failure rate range of 4.5 – 18% has been reported (Sinclair Knight Merz Pty Ltd (2014) Bore Integrity – a background review, commissioned by the Department of the Environment on the advice of the Interim Independent Expert Scientific Committee on Coal Seam Gas and Coal Mining. In this instance and unusually, his fodder enterprise was groundwater dependent.

The criminal proceedings involved charges, relating to the issuance of the exploration licence, being brought against the Minister for Primary Industries and Minister for Mineral Resources (Ian Macdonald) and an executive of the mining company, John Maitland. Those proceedings are ongoing at the time of writing.

²¹⁴ The Guardian (2021) 'They seem to have gone coal mad'. <https://www.theguardian.com/australia-news/2021/may/15/they-seem-to-have-gone-coal-mad-major-parties-sing-as-one-but-upper-hunter-voters-are-not-so-sure>.

- land characteristics or classification systems are data-driven, that the reliability of a classification system for land is directly related to the reliability of the data set used;
- the scale of the assessment varies from site to site, and with the specifics of each land use conflict, that the data set is consistent with the scale required;
- the purpose of each assessment varies from conflict to conflict and varies between industry sector to sector, that the data is consistent and sufficient for the activity being assessed;
- the courts rely on information and data, that it is absolute, independent, permanent and not subject to qualification; and
- a precedent for absolute data has been set, that the experts' degree of data certainty must be equal to that task – complete and unqualified or, if incomplete, appropriately qualified.

The courts have adjusted rules and procedures in an effort to tailor, guide and control expert evidence to better suit their requirements. In the context of the widespread stakeholder disquiet identified by Kennedy and Edmund's separation of "junk" science from empirical research, scientific experts, as a body, have not yet assisted courts in respect of process-based evidence as identified by Andretta and Faigman. The next chapter seeks to address these gaps by proposing methods to assess and report on data sufficiency for expert evidence.

Methods

Overview

In the previous chapter, the current state of knowledge in relating land capability to litigation was reviewed. From the legal perspective, the literature centred on procedural improvements during litigation where experts can be better managed. The improvements built on court rules, such as the use of concurrent evidence, court-appointed experts and the more refined use of legal processes. With few exceptions, the emphasis was on how judiciaries (through rules, tighter case management and process) can elicit better performances from experts. One of those exceptions was in the use of process-based evidence where, by following a structured process, omissions could be readily exposed.

It was postulated that features of landforms, agricultural capabilities, surface waters and groundwaters can be assessed, measured, mapped and predicted with degrees of confidence and certainty. By recording this, the science might be better communicated in forms more helpful to courts by providing context and reasoning that can be readily defined. Thus, whilst published debate has centred on the issue of how courts can improve procedures, it was also postulated that it is for scientific experts to better understand what form of information a legal system might require of them.

This chapter explains the methods used to test the hypothesis. It is divided to two sections: firstly, the analysis methods and secondly, the research methods. It defines land capability as a function of land quality, tenure and water supply. Each of these primary indicators displays characteristics, or attributes, that critically combine to describe how capable a site is, what capacity it might have, and how sustainable a proposed use of its resources could be.

An exercise is then undertaken to identify critical landform, agricultural, water resource and data indicators and attributes (or criteria). This is presented in a visual, land capability hierarchy.

Based on that hierarchy, research methods are then proposed to develop, test and validate an indicant in order to match the critical criteria to land capability assessments. In a survey format, the indicant poses questions allowing the user to score information and data underpinning an assessment where it can be ranked against other assessments.

Analysis methods

In postulating that to contribute to a better understanding of land capability matters during litigation, the principal research goals here were to:

1. identify the critical landform, agricultural and water resource science indicators and attributes relating to the assessment of landform, agricultural and water resources relating to expert evidence;
2. further identify critical indicators and attributes of data sufficiency;
3. employ those indicators and attributes to objectively compare the substance of the assumptions, information, data and assessments that ultimately underpin the preparation the evidence;
4. conceptualise and document a function or an indicant to describe the data adequacy supporting the evidence; and
5. test and validate the indicant.

Critical indicators and attributes for landform, agricultural, water resource assessment and data sufficiency

Building on the literature cited in the previous chapter, critical indicators and attributes of land capability were identified and organised in a visual hierarchy (the ‘hierarchy’). The basis for the selection of the criteria was simple. Indicators were taken to be landform, agricultural and water resource features that could be measured numerically. Attributes were inherent characteristics or features under natural conditions.

For example, under natural conditions, a site’s landform dictates the land quality as indicated by the landform elements, sedimentary records, the slope and the soil quality. Each of these aspects can be readily mapped, estimated or measured either from first principles or as defined within a local land capability assessment scheme.

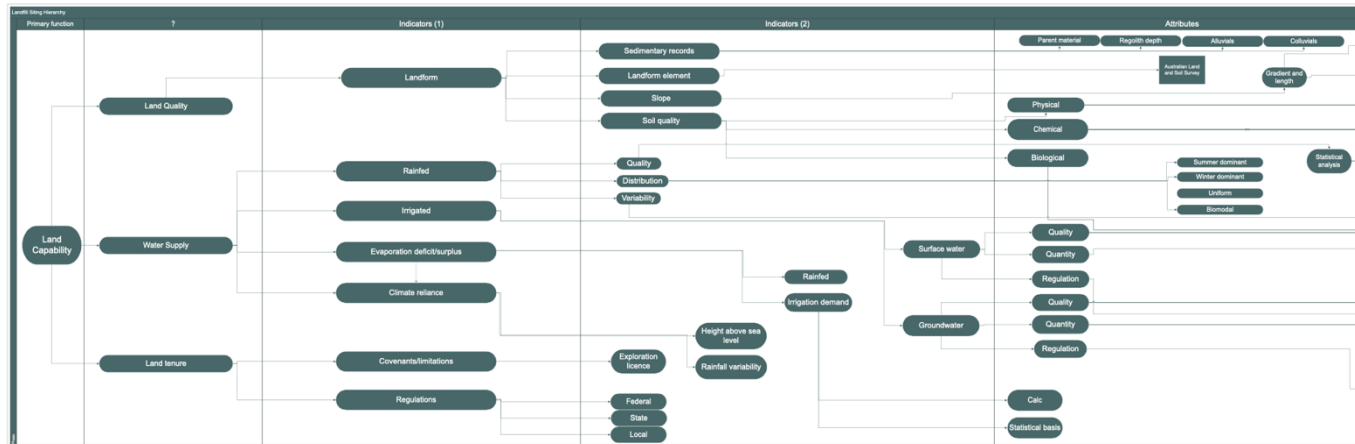
Similarly, the distribution, quality and variability of rainfall are primary water supply indicators. As such, they are represented in the hierarchy at the same level as irrigation sources (both surface water and groundwater) and climate (evaporative demand and resilience). The direct correlation between land capability and water supply is a function of water underpinning the cultural, ecological, economic and environmental values of a land parcel.

Lastly, land tenure also represents a primary capability indicant in that covenants, limitations and regulations will dictate what practices may or may not be conducted on that land. As such, security of tenure is also fundamental to long-term land capability. Without such tenure, investment decisions can only be viewed as temporary. The hierarchy also acknowledges the regulating impact of covenants, licences and development limitations in respect of land tenure.

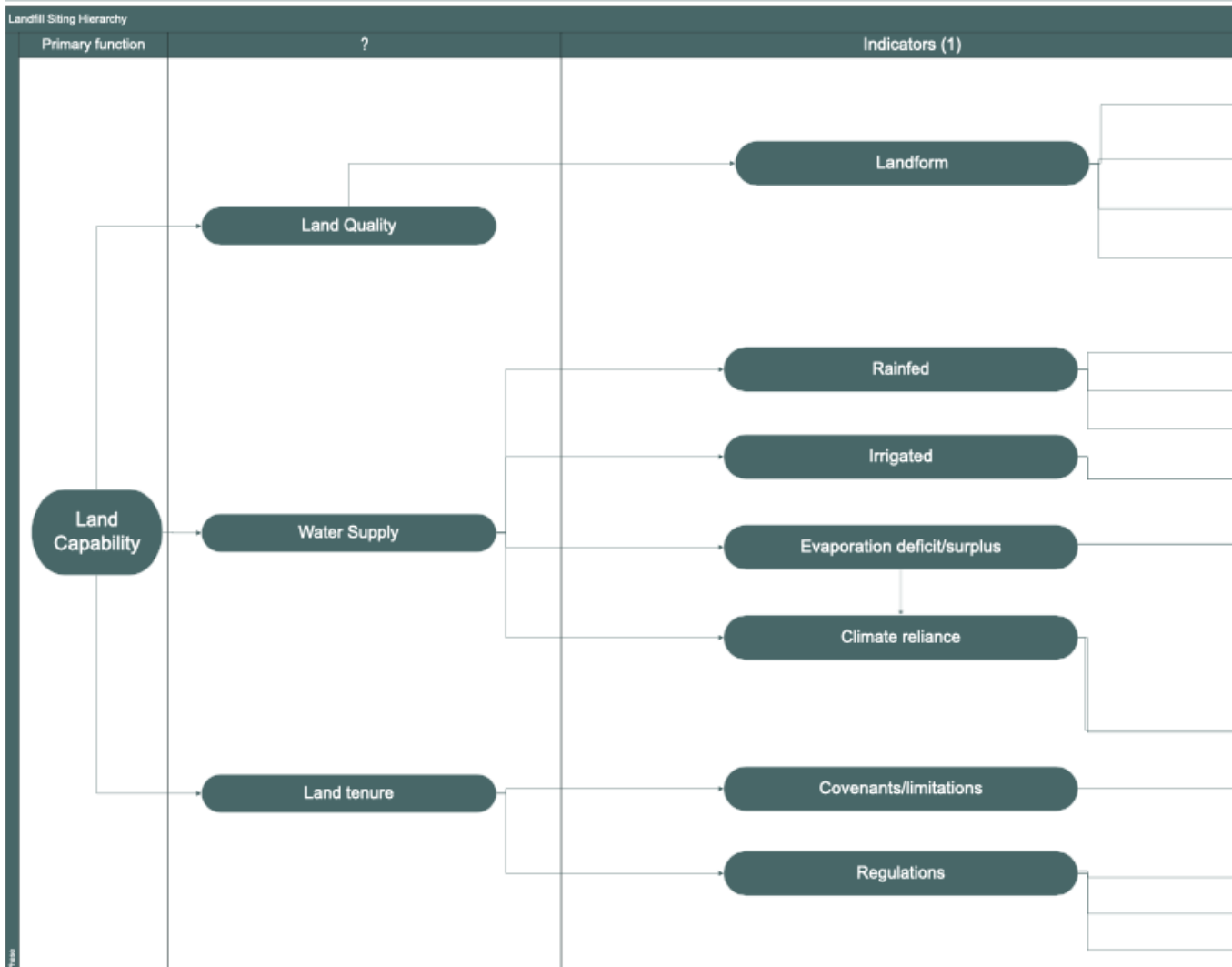
Thus, for the purposes of this research (and as placed in the hierarchy) land capability is in combination, a function of land quality, water supply and land tenure. Whilst the connections within the hierarchy are self-evident, this section details the critical indicators and attributes in identifying the landform, agricultural and water resource, and data sufficiency indicators central to this research.

The visual hierarchy is presented here in Figure 1. It sets out the critical indicators and attributes that allow not only for the direct comparison of sites but also of competing evidence relating to the same site and its receiving environment.

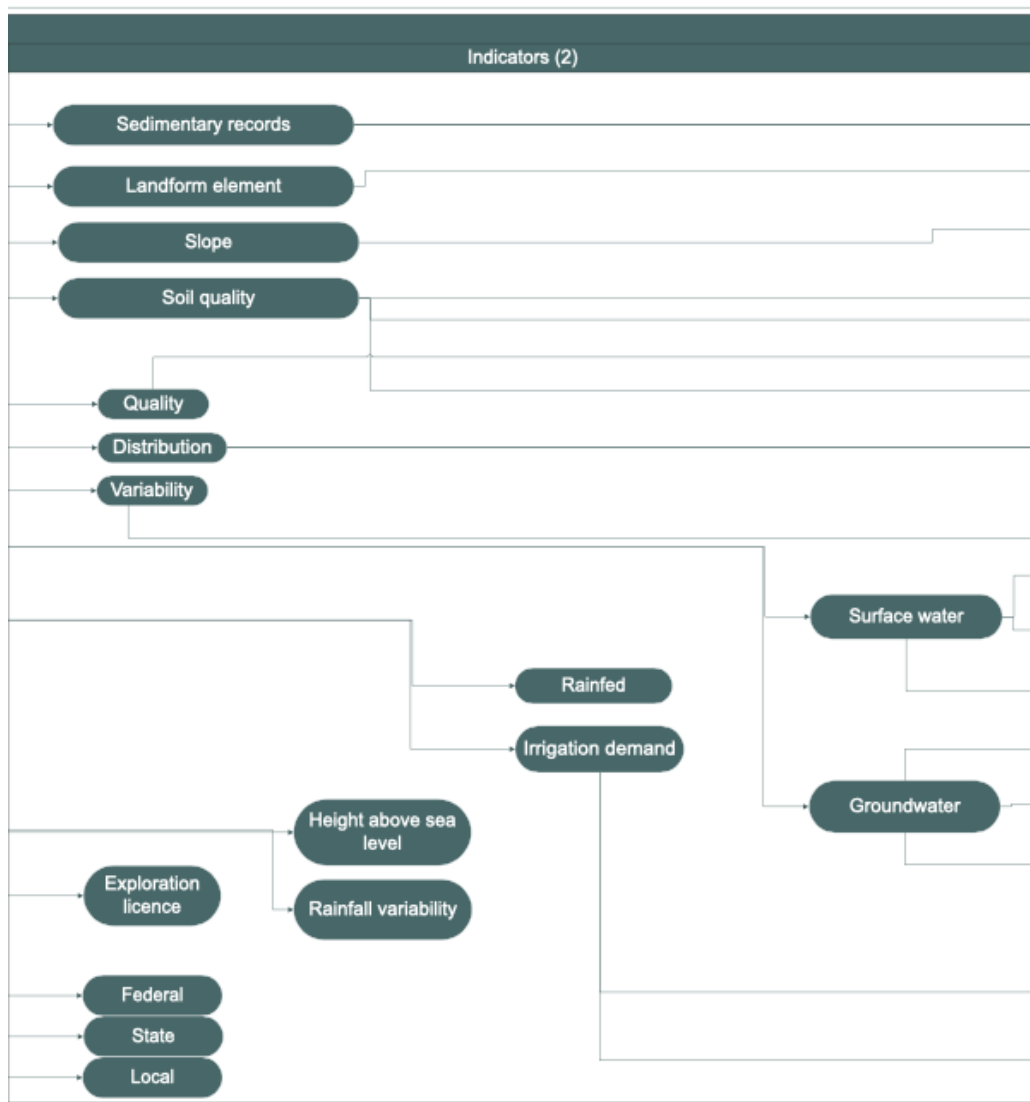
Figure 1. Hierarchy of critical indicators and attributes for landform, agricultural, water resource assessment and data sufficiency:



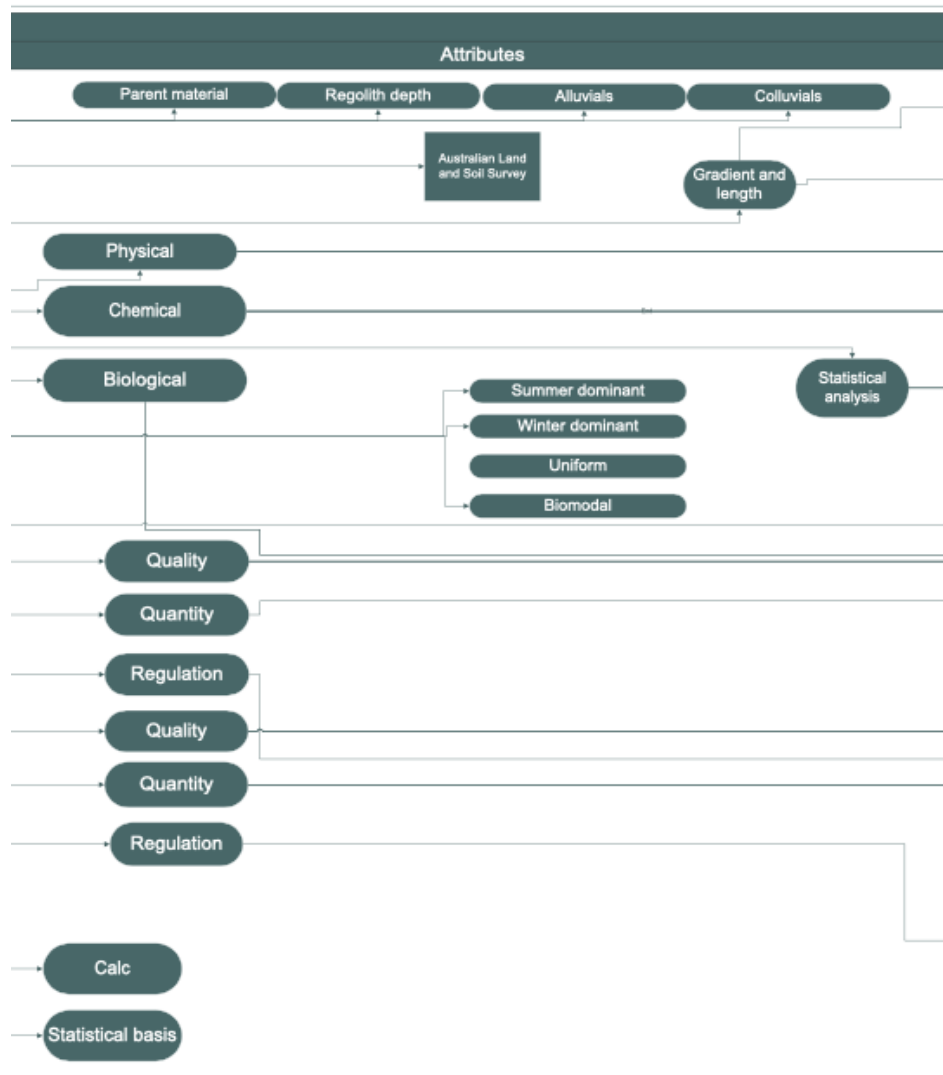
The overall hierarchy (above) is presented as zoomed tiles 1 to 4 (below).



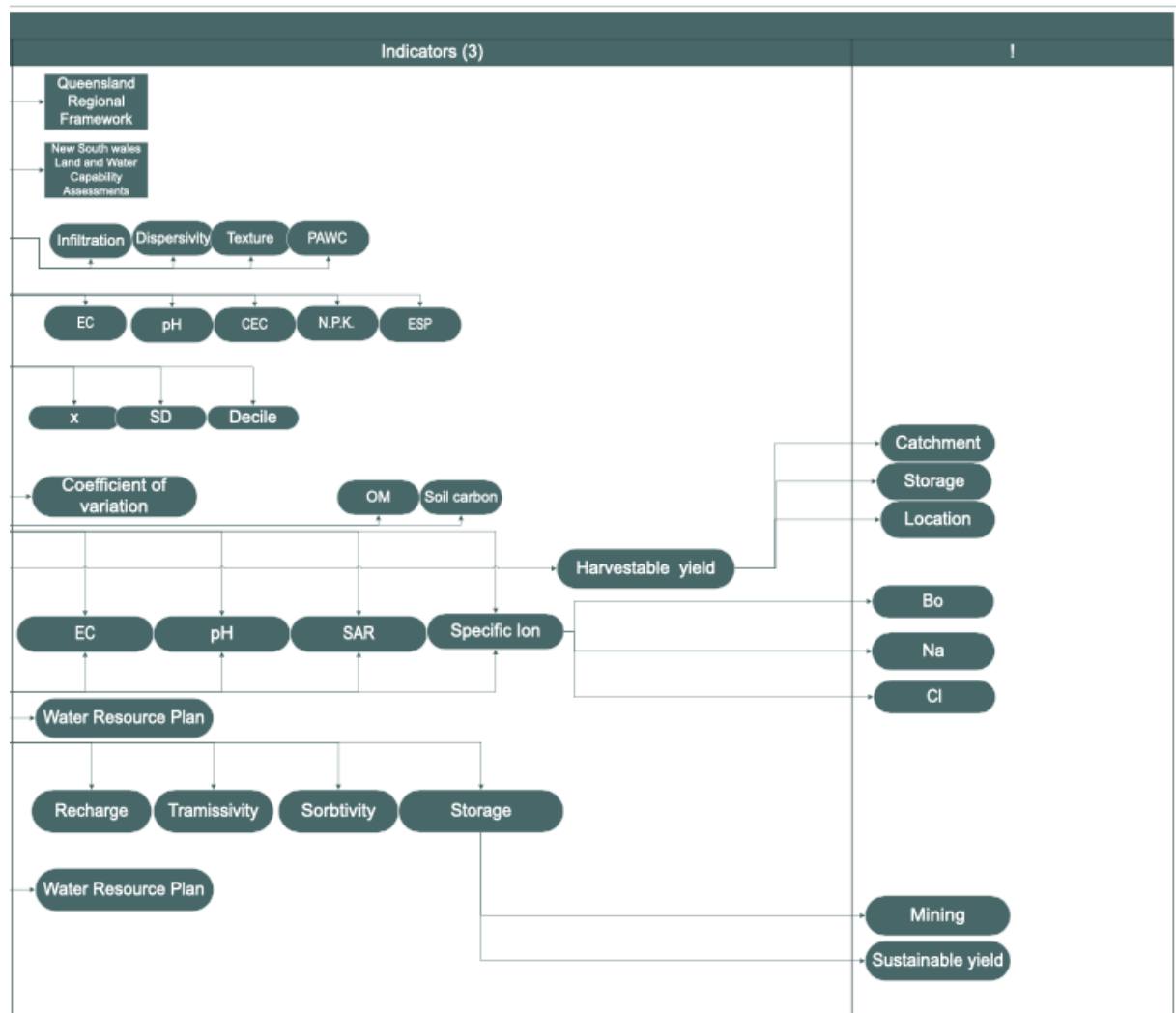
Tile 1.



Tile 2.



Tile 3.



Tile 4.

In the next sections, those critical indicators and attributes within the hierarchy that are not self-evident are grouped and tabulated with explanatory reasoning as to their inclusion.

Landform

The table below identifies the critical indicators and attributes when examining landforms for the purposes of litigation.

Table 1. Landform critical indicators and attributes.

Indicator	Attributes	Explanatory reasoning
Sedimentary records	Parent material	Identifying a site soils' parent materials necessarily involves discernment of geology and/or sedimentary placement
	Regolith depth	Regolith depth indicates available water capacity, landform drainage, maximum presence of plant-limiting pans and plant root ramification potential
	Alluvial soil (presence of)	Indicates agricultural/ecological productivity potential, available water capacity, drainage features, fertility and soil origin
	Colluvial soil (presence of)	Indicates agricultural/ecological productivity potential, available water capacity, distance to rock outcrop, drainage features, soil fertility and origin
Landform element^{215&216}	Slope	Gradient and length indicate agricultural/ecological productivity potential, available water capacity, distance to rock outcrop, drainage features, erosion potential, geology and/or sedimentary placement, soil fertility and origin, stability
	Morphological type(s)	Regolith depth indicates maximum plant root ramification potential, landform drainage, available water capacity and presence of plant-limiting pans
	Element dimensions	Indicates soil origin, fertility, available water capacity, drainage features and productivity
	Mode of geomorphological activity	Indicates origin, history and future expectations, liabilities and vulnerabilities. Includes aeolian, coastal, fluvial, glacial, karst, mass-movement, tectonic, volcanic and weathering agents

²¹⁵ Gunn, R., et al. (1988). Australian soil and land survey handbook: guidelines for conducting surveys. Inkata Press.

²¹⁶ McKenzie, N. J., et al. (2008). Guidelines for surveying soil and land resources, CSIRO Publishing.

Indicator	Attributes	Explanatory reasoning
	Geomorphological agent(s)	Indicates origin, history, future expectations and potential impacts of change. Includes anthropogenic and biological agents, dissolution, gravity, groundwater, ice, precipitation, stream flow, tectonic movement, volcanic eruptions, wave action and wind
Soil quality characteristics	Physical (dispersivity, infiltration, plant available water capacity)	Indicates agricultural/ecological productivity potential, available water capacity, drainage, drought resilience, erodibility, infiltration capacity and stability
	Chemical characteristics (Electrical Conductivity (EC), Cation Exchange Capacity (CEC), Exchangeable Sodium Percentage, Nitrogen: Phosphorus:Potassium ratio (N:P:K), pH)	Indicates agricultural/ecological productivity potential as a combination of acidity/basicity, erodibility, macro nutrient status, nutrient availability, salinity and sorbtive/storage capacity
	Biological (soil organic matter, soil carbon)	Indicates agricultural/ecological productivity potential in available water capacity, drought resistance, nutrient response and sorbtive capacity
	Contamination ^{217&218} and natural toxicants (conceptual site model, sampling and analysis, gases, groundwaters, soils and surface waters)	Indicates whether site use history or the exposure of naturally occurring toxicants is a possible/probable impact and illustrates the importance/likelihood of gaseous, waste and water vectors for impacts on receiving environment

Agriculture

Excluding water resources²¹⁹ but in addition to the landform characteristics above, the table below identifies the critical indicators and attributes when examining land capability for agriculture during litigation.

Table 2. Agriculture critical indicators and attributes.

²¹⁷ National Environmental Protection (Assessment of Site Contamination) Measure (2013) Schedule B2. National Environmental Protection Council Australia <http://www.nepc.gov.au/nepms/assessment-site-contamination> with reference to NEPM field checklist draft-2010.xls

²¹⁸ Water Quality Australia (2018) National acid sulfate soils identification and laboratory methods manual Prepared by Leigh Sullivan (Federation University), Nicholas Ward, Nadia Toppler and Graham Lancaster (Southern Cross University) on behalf of the Department of Agriculture and Water Resources, 2018.

<https://www.waterquality.gov.au/issues/acid-sulfate-soils/identification-and-laboratory-methods-manual>

²¹⁹ Water resource indicators and attributes, whilst critical for land capability assessment, can be independently critical and, as such, are here the subject of a separate section

Indicator	Attributes	Explanatory reasoning
Land resources	Site capability	Surveying a site's land resources within the context of its receiving environment indicates site capabilities and likely project impacts
	Survey intensity and cartographic scale	Proportion of detailed profile descriptions, deep borings, profiles for sampling and mapping observations dictated by intensity and selected cartographic scale to ensure reliable resource interpretation ²²⁰
	Minimum observations for survey intensity	Related to the survey purpose and for most litigation will comprise >25 observations per square km (i.e., "Very High Intensity" survey ²²¹)
	Survey 'fit for purpose'	Indicates whether the survey can be relied upon in the context in which it is being relied upon for the land-uses proposed. If not 'fit for purpose' conflict likely to be generated and/or exacerbated
Site history	Historical and current agricultural use	Indicates land resource capacity to sustain agriculture

Water resources

In addition to the landform and agricultural characteristics above, the table below identifies the critical indicators and attributes when examining water resources during litigation.

Table 3. Water resource critical indicators and attributes.

Indicator	Attributes	Explanatory reasoning
Rainfall	Quantity (statistical analysis of average (mean), standard deviation and decile distributions) and variability (coefficient of variation)	Quantity indicates reliability and rainfall variability, based on historical records adjusted for the projected effects of climate change
	Distribution (summer or winter dominant, uniform or bimodal)	Indicates what plants may be grown or the reliability of rainfed supplies for livestock
Surface water	Community values and management goal identification	Indicates current community expectations. Without understanding these, land-use conflict is generated

²²⁰ As usefully defined in McKenzie, N. J., et al. (2008). Guidelines for surveying soil and land resources, CSIRO Publishing

²²¹ McKenzie, N. J., et al. (2008). Guidelines for surveying soil and land resources, CSIRO Publishing

Indicator	Attributes	Explanatory reasoning
	Definition of relevant water quality guidelines	Indicates how community expectations will be enforced
	Current water quality objective compliance	Indicates current level or risk of environmental nuisance or harm
	Future water quality objective compliance	Indicates project impacts, prospects of discharge compliance and water quality treatment requirements
	Identification of surface water features	Locations, areas of catchments, volumetric storages all indicate the degree of landform and community resilience to impacts
	Quality: Electrical conductivity, pH, Sodium Adsorption Ratio and specific ion (Sodium and Chloride)	Key indicators for surface water use for agriculture. Nutrients (Nitrogen and Phosphorus), would be added during ecological and contamination assessments
	Quantity: harvestable yield	Indicates the amount of rainfall runoff that can be sustainably harvested from the catchments upstream of the site
	Regulation: local water resource planning, tenure and abstraction limits	Indicates maximum yields either allocated or available, ownership and drought resistance of resource
Groundwater	Hydrogeological conceptual model	Indicates degree of understanding of surface and groundwater interactions. In Australia, is modelled under National Groundwater Modelling Guidelines ²²²
	Depth to regolith and basement	Indicates understanding of (unsaturated) vadose zone and aquifer(s)
	Site flows up and downgradient	Indicates receiving environment sensitivity to impacts
	Flow on site	Indicates site sensitivity to impacts
	Flow direction	Informs monitoring design and requirements
	Flow velocity(velocities)	Indicates potential groundwater yield and risk
	Minimum of four groundwater bores referenced for each aquifer	Indicates reliability of groundwater data, flow direction and velocities

²²² Barnett B, Townley LR, Post V, Evans RE, Hunt RJ, Peeters L, Richardson S, Werner AD, Knapp A and Boronkay (2012) Australian groundwater modelling guidelines. The National Water Commission 95 Northbourne Avenue Canberra ACT 2600 ISBN: 978-1-921853-91-3

Indicator	Attributes	Explanatory reasoning
	Quality: Electrical conductivity, pH, Sodium Adsorption Ratio and specific ion (Sodium and Chloride)	Key indicators for surface water use for agriculture. Nutrients (Nitrogen and Phosphorus), would be added during ecological and contamination assessments
	Quantity: recharge, transmissivity, sorptivity, storage	Indicates potential groundwater yield and risk in differentiating between sustainable yields and groundwater mining (where abstraction exceeds recharge)
	Regulation: local water resource planning, tenure and abstraction limits	Indicates maximum yields either allocated or available, ownership and drought resistance of resource
Hydrography	Identification of surface water and groundwater users for site and locale	Indicates understanding of risk to existing users: commercial, community or receiving environment
	Identification of 10%ile hydrologic indices	Demonstrates drought risk and likely resilience
	Identification of surface water flow direction and velocity	Indicates siting for storages and where drainage, erosion and offsite impacts would be controlled
Irrigation	Irrigation demand (statistical analysis)	Peak irrigation demand and variability dictates infrastructure sizing and capacity
Evaporation deficit/surplus	Rainfed (statistical analysis)	Indicates agricultural/ecological productivity potential, available water capacity, drainage and drought resilience
	Irrigation	Peak irrigation demand dictated by water balance, supplies and available storages
Climate resilience	Height above sea level	Indicates vulnerability to rising sea levels
	Vulnerability to rainfall variability	Indicates resilience to increased rainfall variability resulting from climate change

Data sufficiency

In addition to any of the landform, agriculture or water resource characteristics above, the table below identifies the critical indicators and attributes when examining data sufficiency and procedures during litigation.

Table 4. Data sufficiency critical indicators and attributes.

Indicator	Attributes	Explanatory reasoning
Expertise	Experience and qualification(s) that allow witness to claim expertise	As an attribute, if expertise cannot be rightfully claimed then the witness and any evidence is of no use to the court or adjudicator
	Jurisdictional rule compliance	Each jurisdiction has rules that if not complied with devalues the expert evidence
	Retention of records, datasets and draft reports	The base data, evaluation, view synthesis and reasoning underpinning the evidence must be accessible and able to be deconstructed to a first-principal level by non-scientists
	Adequate legal briefing with 'issues in dispute' identified	The expert witness must have been adequately briefed and provided the 'issues in dispute' to focus and tailor the assessment accordingly, otherwise court time is wasted
	Site visit(s)	Indicates the witness is familiar with the site, in person. A site visit preceding the provision of any evidence would be made to ensure data employed remains reliable.
Site specific data	Site boundary	Indicates impact extent
	Federal, State or local regulations	Indicates legal constraints
	Site history	Indicates whether site use history has been sustainable and whether rehabilitation required
	Risk assessment	Indicates whether the site has been assessed for acute and chronic risks in both current and proposed condition
	Environmental nuisance/harm	Indicates whether the site has been assessed for environmental nuisance/harm in its current. If identified, then the liability needs to be quantified and addressed
	Security of tenure	Determines whether proposed use is sustainable, and investment warranted
	Site covenants and exploration licences	Linked to security of tenure and similarly can determine whether investment warranted
Data quality	Site specificity	Indicates whether the data can be readily applied to the site and whether the data collected on the site may be appropriately applied to the issues in dispute
	Accuracy	Indicates whether the form and content of the collected data value are correct for what is being measured. For existing data, relies on provenance reliability and for new data, relies on

Indicator	Attributes	Explanatory reasoning
		sampling and analysis quality planning. ²²³ Low accuracy data would not attract the same interpretive weight as high accuracy data in the context of litigation
	Precision	Indicates to what degree the same dataset could be reproduced under the same conditions – how repeatable it is. Again, low precision data would not attract the same interpretive weight in the context of litigation, if made apparent
	Spatial representation	Indicates that the dataset reflects a sampled population, across each of the landforms, that are in the issues in dispute. A representative sample would correctly reflect all the essential properties of the population
	Temporal representation	Indicates that the dataset reflects a sampled population in the issues in dispute, across each of the seasons, over time.
	Central tendency	Indicated by the mean, median or mode averages and relevantly provides context when considered together with representation
	Data dispersion	Indicates how much the data varies or spreads from the average and how wide that spread is. Relevantly provides context in disputed issues
	Data inadequacy	Indicates whether absent adequate data, an opinion should be rightfully proffered in the context of the disputed issues
Data analyses	Evaluation	Indicates the method(s) of how the available datasets have been treated and analysed and would provide, for context purposes, an understanding of the margin of error
	Synthesis of view	Synthesis is the process of gathering the available data together to drawing conclusions or form a view about a body of evidence

²²³ National Environmental Protection (Assessment of Site Contamination) Measure (2013) Schedule B2. National Environmental Protection Council Australia <http://www.nepc.gov.au/nepms/assessment-site-contamination> with reference to NEPM field checklist draft-2010.xls



Plate 7. Standing waters downslope of a food processing facility effluent disposal scheme²²⁴ on the Atherton Tablelands in far North Queensland. Elevated nitrates, identified in both surface and groundwaters, were the subject of an Environmental Investigation under Section 326 of the Environmental Protection Act (1994) (Photograph by author, 2019).

Philosophically, the use of an (ostensibly) objective process cannot be fully reconciled with the use of a subjectively-designed hierarchy upon which the indicant is based. But a scientific expert's opinion will always be subjective to a degree. It is not based on a single algorithm but on qualification, training and experience. In that context then, where time will be saved (and conflict reduced) is when the expert's evidentiary basis is more easily assessed by others.

So, whilst the selected individual characteristics are critical, it is in combination that such data improves the degree of knowledge, increasing the epistemic value of the scientific expert evidence. This concept is examined in detail in Chapter 5.

A degree of objectivity is provided in the experts assessing each other's work on a common basis. In practice they could easily agree to add or subtract attributes, on a joint basis. It is this joint approach that is of importance to the court as it amounts to a formal peer review.

The same is true of data sufficiency and completeness. For example, some hydrogeologists and groundwater managers will accept the use of three bores' data for triangulation, whilst others will

²²⁴ The dispute involved a food processing facility and its overall land capability. The investigation focused on waste minimisation, the effluent disposal area and the underlying landform, irrigation management, the ongoing beneficial uses of two groundwater aquifers and the veracity of monitoring data collected under a Site Based Management Plan. It was settled with the enforcement of a series of measures including the proscription of exceeding a maximum groundwater nitrate level.

only accept four – allowing for multidirectional flow estimation. Whether the data are sufficient and complete will depend on the context and issues in that particular landform and conflict. With a proposal that is only 5% reliant on groundwater for its overall supply, a lower threshold of sufficiency and completeness may be acceptable to both experts. The analysis goal is met when the data analysis meets the threshold applied by the law. Provided that justification of the analysis withstands scrutiny under cross examination, the evidence will usually be considered sufficient.

The thesis here is that a court is more likely to benefit from sufficient evidence if the experts have agreed at least a basis of critical indicators and attributes relating to their areas of expertise. Here it is organised into a hierarchy.

Research methods

Taking then the hierarchy of critical indicators and attributes for landform, agricultural, water resource assessment and data sufficiency, the research methods used were as follows:

- Selection of comparative method
- Survey design and Indicant conceptualisation
- Evaluation
- Validation
- User engagement survey
- Evaluation of expertise level

Selection of a comparative method

For the purposes of this research and to be able to objectively compare the substance of the assumptions, information, data and assessments underpinning expert landform, agricultural and water resource evidence, it was necessary to combine the critical indicators and attributes and combine them into a comparative tool, or an ‘indicant’. This then could be used as a method of comparison before, during and even after litigation.

Whilst acknowledging that not all critical indicators and attributes would be applicable in all cases, by examining land-use conflicts that had been already litigated, the indicant results could be reviewed on comparative bases. The selection of such historical conflicts was made using the following criteria:

- information, data and selected reports used in the matter were readily available;²²⁵
- the matters were litigated, or preparations were made for litigation; and
- judgment or an adjudication had been made (and hence was publicly available).

It was postulated that by using the same information base, the areas of agreement and disagreement might become apparent in the context of the judgment or adjudication.

Survey design and indicant conceptualisation

The development of an indicant and an application method allows for the objective assessment of evidence by identifying and focusing on the areas of disagreement between the experts. Over the past two to three years in contested matters in both NSW and Queensland, individual Statements of Evidence have become less and less necessary. Instead, there is a growing expectation from the courts that all contested matters should be dealt with by a Joint Experts Report (JER).

A JER is produced when two or more experts meet in a conclave, quarantined from their clients or instructing lawyers. The meetings are completed under specific rules and a report is prepared detailing the areas of agreement and disagreement between the experts. Whilst the process encourages the experts to state in the JER the technical basis upon which disputed issues may have been narrowed or resolved, typically it is the areas of disagreement that are of most interest to the court and of greatest consequence to the parties. This is because it is there that competing and contentious evidence is found.

The timing of the Joint Expert process varies. In NSW the JER is often prepared after the Statements of Evidence (SoE) are prepared. In Queensland's Planning and Environment and Land Courts, the JER precedes any statements. A principal benefit of the JER process is one of peer review. One expert is faced with a critical examination by another, allowing for a process of adaptation and refinement in the face of reasoned arguments. This benefit accrues more readily under the Queensland system where 'hard' positions have not been committed to yet in the form of an SoE.

The method chosen here then, is one that seeks to refine this process further, but from the viewpoint of the scientist. The idea is that by forcing the distillation of competing views, an adjudicator could benefit from more refined, clearer evidence, which it may compare or rank. Apart from where they affect other disciplines, areas of agreement between the experts can be dealt with readily, rapidly and efficiently: There is no contest. By identifying the areas of disagreement using a confining

²²⁵ By necessity, this criterion resulted in the cases being those for which I had either prepared evidence for and/or given evidence in. As such, all the relevant data and the public records of the proceedings and their outcomes was to hand.

method – forcing the scientist to confront questions of data quality, evaluation and opinion synthesis – the theory is that the scientific expert, the court and the parties will benefit. By extension that benefit should also accrue to the silent parties as unrepresented stakeholders and relates to the research hypothesis by providing the crucial link between epistemic assessment and the expert evidence.

Whilst an indicant could initially be tested on the basis of fictitious case materials designed for testing purposes, generated results could (rightly) be viewed as overly simplistic compared to complex real-world disputes. Similarly, because of issues of process, privacy and legal professional privilege, it is necessary when retrospectively analysing matters that have already been adjudicated. Acknowledging the limitation where validators may be influenced by publicly-available decisions, the chosen application method to generate the indicant is a participatory survey. This is where the expert's attention is focused on the data that underpins an opinion which is to be presented to the court, compared to established practices and relevant guidelines in the fields of Acid Sulfate Soils, Agriculture/Land Resources, Environmental Management, Groundwater, Hydrography, Land Contamination, Surface Water Quality and Water Supply.

Each of these fields, where expert evidence is regularly sought, contains specific and related elements of landform, agricultural and water resource science. It was postulated that the established scientific methods in the sciences would translate effectively into expert evidence if an appropriate process or indicant was developed. Having elected to develop an indicant, the processes considered were:

- Guideline/standard reference and compliance,
- Direct data comparison, absent evaluation and synthesis, and
- External peer review by an expert not briefed in the matter.

Sequentially, the reasons these were rejected were as follows:

- There may be valid reasons why guidelines and standards may not be applicable at a site-specific scale. This may be that the site history indicates a use where those standards may not apply. Similarly, there may be limited site access or no assessment budget.
- The data may not be comparable or may be obsolete.
- Funding an external expert would have to be either agreed by the parties or the subject of a court order. In that regard, the courts in the New South Wales and Queensland jurisdictions favour contending experts who are expected to critically examine their counterpart's evidence.

Building on Sullivan et al's 2006 Water Poverty Index²²⁶ and the River Health Index,²²⁷ a method was constructed using a survey format that matched the identified critical landform, agricultural and water resource indicators to the fields of expertise in which the expert evidence is sought.

Using the web-based software package Qualtrics XM, the survey was further developed by distilling the critical indicators and attributes into tailored questions. Not all the criteria were formed into individual questions as it was judged that a general question posed in the right form was enough to trigger the equivalent level of self-examination brought through the JER's peer review, but through a more rapid process.

This then formed an indicant tool to describe the data adequacy supporting the evidence. It comprised a total of 91 primary questions (principally multiple-choice) that could be automatically tailored depending on the field of evidence being presented. Based on the answers to the questions, the user generates a score.

Figure 2. Digital whiteboard representation of the Indicant structure

A digital whiteboard representation of the Indicant structure on the Miro software platform, too large to meaningfully depict in the body of this text as Figure 2, can be found at this link:

https://miro.com/app/board/o9J_lheNG2I=?share_link_id=97768218713

²²⁶ Sullivan, C., et al. (2006). Application of the Water Poverty Index at Different Scales: A Cautionary Tale. *Water International* 31(3): 412-426.

²²⁷ Singh, P. K. and S. Saxena (2018). Towards developing a river health index. *Ecological Indicators* 85: 999-1011.

Figure 3. Exemplar screen shots of the Indicant on the Qualtrics XM software platform (presented as tiles 1 to 5 below).

0% ————— 100%



Australian
National
University

Expert Evidence Indicant

Your full name

Litigation (name of case or matter)

Please select Jurisdiction

☐ New South Wales Land & Environment Court

☐ New South Wales Supreme Court

☐ Queensland Land Court

☐ Queensland Planning & Environment Court

☐ Queensland Supreme Court

☐ Other (please specify)

Tile 1.



Expert Evidence Indicant

Expert Qualification

Please answer the following questions in respect of your retention as an expert in the litigation

	Yes	Unsure	No
Does your experience and/or qualification(s) allow you to claim expertise in the area of evidence that you have been instructed to give?	☐	☐	☐
Have you been informed of (and can you comply with) the jurisdiction's rules?	☐	☐	☐
Are you prepared to retain all your draft calculations, records, data sets and reports for scrutiny should they be needed?	☐	☐	☐
Do you feel you been adequately briefed on the activity, allegation, project or proposal	☐	☐	☐
Have the issues in dispute been identified by others and provided to you?	☐	☐	☐
Have you been to the site since the collection date of the last physical, chemical or spatial data that you have relied upon?	☐	☐	☐

Tile 2.

Have the issues in dispute been identified by others and provided to you?

Have you been to the site since the collection date of the last physical, chemical or spatial data that you have relied upon?

Area(s) of expertise - select one or more as appropriate

☐ Acid Sulfate Soils

☐ Agriculture/Land Resource

☐ Environmental Management

☐ Groundwater

☐ Hydrography

☐ Land Contamination

☐ Surface Water Quality

☐ Water Supply

Powered by Qualtrics

Tile 3.

83

Were the minimum number of observations for the survey intensity met?

- ☐ Reconnaissance/overview (minimum observations 0.04 per square km)
- ☐ Low (minimum observations 0.25 per square km)
- ☐ Medium (minimum observations 1 per square km)
- ☐ High (minimum observations 4 per square km)
- ☐ Very high (minimum observations 25 per square km)
- ☐ No - the criterion was not met

Was the land resource survey fit for purpose?

- ☐ Intensive land uses, detailed farm planning, land development, mines or similar: Very high intensity survey (<1:10,000)
- ☐ Strategic planning for intensive land uses or similar: High intensity survey (1:10,000 to 1:25,000)
- ☐ Shire planning for rural land for rural land or similar: Medium intensity survey (1:25,000 to 1:100,000)
- ☐ Strategic planning for broad-acre agriculture and regional plans or similar: Low intensity survey (1:100,000 to 1:250,000)
- ☐ Land resource planning and pasture development or similar: Reconnaissance/overview survey (>1:250,000)
- ☐ No - the relevant criterion was not met



Tile 4.

0% ————— 100%



Expert Evidence Indicant

We thank you for your time spent taking this survey.
Your response has been recorded.

299.98/319.98

93.7%

Expert Qualification

Please answer the following questions in respect of your retention as an expert in the litigation **60/60**

	Yes	Unsure	No
Does your experience and/or qualification(s) allow you to claim expertise in the area of evidence that you have been instructed to give?	✓		
Have you been informed of (and can you comply with) the jurisdiction's rules?	✓		
Are you prepared to retain all your draft calculations, records, data sets and reports for scrutiny should they be needed?	✓		
Do you feel you been adequately briefed on the activity, allegation, project or proposal	✓		
Have the issues in dispute been identified by others and provided to you?	✓		
Have you been to the site since the collection date of the last physical, chemical or spatial data that you have relied upon?	✓		

Please answer the following questions in relation to the land tenure of the Site, the subject of this litigation **70/70**

Tile 5.

Mathematical procedure

In the initial analysis, a straightforward procedure was thought to be desirous, allowing for transparency, replication and future adaptation and refinement. Thus, in the first instance, determinative questions were posed and the answers simply assigned additive scores.

Because each criterion was included in the survey, a positive answer would gain 10 points and negative answers would cost points. Selecting ‘unsure’ at any stage would also yield a negative score for that question (as a primary objective is to assist the court, based on certainty). Where multiple attributes were required to determine a critical indicator, the score was equally split. For example, the critical indicator of Sedimentary Record is informed by three attributes: Parent materials, Regolith depth and Alluvial/colluvial content. So, each attribute was assigned 3.33/10 meaning the greater the detail, the higher the score. Similarly, slope lengths and gradients need to be matched with the soil quality of dispersity if an informed view of a site’s erosion potential is to be made. Again, a score of 10 was assigned for each positive response and -10 for each attribute absence.²²⁸ Using the indicant in this way yielded a definitive score out of wide range possible points (such as 50/390) that was reported to the user at the end.

Applying a point cost – in effect ‘marking down’ one assessment where measurement of critical indicators is lacking or absent – was used not only to highlight the omission but also to assist in the comparative ranking of the assessments made. In turn, this allowed the comparison or ranking of assessments where one expert relies on data and where another chooses to opine on limited data or no data at all.

Weighting and sensitivity testing

Within the indicant, a minimum critical indicator set was devised for each area of expertise. These sets were then used to inform the participatory survey questions. A survey logic was used where the same questions were required for more than one area of expertise, allowing for the relevant questions to be posed once only.

As stated above, where multiple attributes were required to determine a critical indicator, the score was equally split. Aside from these splits, almost all the questions were given equal weight. The

²²⁸ In eight of the twelve subject areas the positive maximum score mirrors the negative minimum score. In the remaining four areas (Agriculture/Land Resource, Hydrography, Surface Water Quality and Water Supply the point cost for lack of data is less due to the ‘Unsure/No’ division described in the section ‘Weighting and sensitivity testing’.

exceptions to this were where a question answered in the affirmative or the negative gained 10 points, but the selection of ‘unsure’ cost 10 points.

Again, this is because the courts are seeking accurate certainty, as opposed to unhelpful equivocation. An example of this is the land tenure question: “Does any aspect of the Site history impact your evidence?” ‘Yes’ or ‘No’ gains 10 points but ‘Unsure’ costs 10 points. Being unsure is simply of less help to the adjudicator. Aside from these exceptions, the reasons for the equal weighting were that firstly, it is the total score that allows for a comparative ranking and secondly, the expert (or other user) gains the opportunity to judge if there may be an evidentiary weakness (perceived or otherwise). Whilst not all comparative rankings will be meaningful, evidentiary weaknesses identified before the matter is heard will benefit the parties in that Counsel will know of ‘pinch-points’ in their case, and experts and stakeholders alike will be able to identify problem areas and court time should be saved.

Sensitivity testing was completed by weighting selected questions on the evaluation matters. Whilst the score was sensitive to the weighting, the fact that minus scores were applied to a negative or ‘unsure’ answer meant that any weighting introduced another, unnecessary hierarchy. The problem with that is that some experts may become focussed on why they disagree with the hierarchy as opposed to submitting to a simple process of data sufficiency examination. This means that the indicant was sensitive to score-weighting but the overall outcome was not. On that basis, all primary indicators and attributes were attributed an equivalent score of 10, aside from the component splits described above.

Expert qualification and analysis

Reflecting a Daubert approach²²⁹ where a judge’s ‘gatekeeper’ role is defined in relation to expert evidence, the survey similarly applies a series of questions relating to expertise, legal briefing, and jurisdictional rules which, if not answered in the affirmative, would prevent further progress through the indicant. The reason for this is that it should alert both the expert and the instructing lawyer to issues of credit before court time is wasted or expended. This feature was not activated during the evaluation and validation processes to ascertain if these gatekeeper questions caused difficulties for the experts.

²²⁹ Applied in United States jurisdictions and not formally applied in Australian Courts

Indicant evaluation

The indicant was evaluated using expert evidence from five land-use conflict matters litigated or heard between 1999 and 2020 in the Australian jurisdictions of Queensland and NSW (the ‘Evaluation matters’).

Evaluation matters

As stated above, the five evaluation matters were selected using the criteria that information and data were available, that the matters had been litigated and that judgment had been made. The matters are summarised in the following sections. The judgments, published reasons or relevant articles provided to each of the validators for the purposes of this research can be readily accessed at the electronic links cited in each section.

Bickham Coal Project (2010)

The Bickham Coal Project proposed to develop a new open-cut coal mine approximately 13 kilometres southeast of Murrurundi in New South Wales’s Upper Hunter Valley. If approved, the mine would have extracted 36 million tonnes of coal over 25 years.

Within the NSW planning process, the Minister for Planning could refer projects to an independent Planning Assessment Commission (PAC), outside of the court process. He did this on 30 October 2009, principally directing the Commission to advise on the water-related risks of the project, and whether those risks could be satisfactorily managed. The Commissioners, each an expert in a different field, visited the site and locale, met with interested parties and agencies, reviewed the Water Resource Assessment and the draft Water Management Plan, received submissions, conducted public hearings, and examined other experts.

On 14 May 2010, because of the Commission’s report,²³⁰ the Government rejected the proposal, largely on the grounds of surface water and groundwater-related risks and uncertainties, and the interactions between surface and groundwaters. In the Commission’s view these risks included the adequacy of the hydrogeological field investigations and modelling, together with the lowering of local water tables and the depressurisation of confined coal seam aquifers. In turn this would have caused a reduction in base flow and groundwater discharge to the Pages River, or leakage from the Pages River to the pit, a reduction in groundwater discharge to Kingdon Ponds, and an increase in the contribution of groundwater to mine water balance. Furthermore, the Commission cited reduced

²³⁰ NSW Government Independent Planning Commission (2010). The Commission’s Report can be found at this link: <https://www.ipcn.nsw.gov.au/projects/2009/11/bickham-coal-project>

flows in the Pages River and Kingdon Ponds due to reduced runoff from the mine site, the loss of streamflow through leakage from the Pages River to the mine pit, and potential changes to water quality due to removal of a specific flow component.

Of key importance was the use of average flows, of which the commission said:

“The reduction in groundwater discharge to the Pages River is acknowledged by the proponent although its potential significance is masked by the proponent’s use of average flows as the benchmark. Average flows are meaningless in the context of the Pages River since the river rarely flows at or above its average. It is the dry weather flows that matter most and it is the loss of contribution from groundwater to those dry weather flows that is important”.

In the context of widespread public disquiet, vulnerable over-allocated water resources and the proponent’s failure to define where compensatory water supplies would come from in the event of an impact, the Commissioners focussed on data sufficiency and treatment. The proposal’s failure to win approval was thought to be the first time that a coal mine had been rejected in NSW history.

QCLNG Pipeline Pty Ltd v McConnell Dowell Constructors (Aust) Pty Ltd & Anor (2011)

This was a matter relating to the construction of liquified natural gas (LNG) pipelines over a distance of 528 km from the Surat Basin to Gladstone in Queensland. The initial capital cost of the project was significant (circa \$730 million) and was claimed to service more gas wells than any other liquefaction plant in the world with an overall cost of \$20.4 billion.²³¹ The project was the subject of delays due to the gaining of environmental approvals, rain delays, flooding and unanticipated soil conditions. The cost of these delays was disputed and litigated through the Queensland Supreme Court and two separate adjudications. The claimed amount is irrelevant and remains confidential. The awarded amount to the construction firm (McConnell Dowell Constructors) was \$50.5 million.²³²

During the dispute, evidence was adduced on several expert areas including (relevantly for this research) sediment and erosion control and soil sodicity. Part of the claim made was that the interception of sodic soils could not have been anticipated. Mapping was completed, combining available soils data, to assess the degree of sodic soils along the route.

²³¹ Australian Mining November 26, 2015, Newspaper Article *Handover of QCLNG to BG Group complete* quoting BG Group chief executive Helge Lund

²³² Aveng Annual Report 2017 <https://aveng.co.za/pdf/investors/annual-reports/2017/aveng-iar-2017.pdf>

Hume v Paterson (2013)

This was an insurance claim concerning a catastrophic tetraplegia injury caused during ‘wakeskating’ – a water sport where one is towed behind a speedboat. At first blush, this matter of a sporting accident within a river and the consequent litigation does not present as a land-use conflict. In fact, it is. Whilst Carter (2013)²³³ summarised the matter outcome, the case revolved around the tenure of a mapped channel within a river, the unsafe water depth over, or very close to, the sandbar that created the hazardous circumstance and the measurement of flow velocities and directions. The defence maintained that the victim had floated onto the sandbar after the accident had occurred within the channel, where his friends were able to support him, allowing him to breathe. Through spatial mapping, hydrography and data collection within and outside of the navigation channel it was demonstrated that this was highly unlikely.

²³³ Carter, P (2013) September 26 <https://cartercapner.com.au/blog/skier-towed-onto-sandbank-insurer-argues-boat-sport-unsafe/> wrote the following summary:

“The tragedy occurred at picturesque Chinderah, about 1 km south of the Barney’s Point Bridge as the Tweed bends gently northwards for its last long sweep before emptying through its mouth, the Heads that bear its name. It was a warm Sunday afternoon in November 2007. Martin Hume had finished his supermarket shift at the Tweed mall early. He hurried to the Chinderah boat ramp whereas another group was dropped ashore by driver Timothy Patterson – he boarded the Cruise Craft ski boat with friend Bryan Woodford to act as an observer.

Belting on a lifejacket and over the side of the boat with wakeboard and ski rope in hand, he has towed on his wake run upstream towards Tumbulgum. After his first few runs on the wakeboard, Hume switched to a wakeskate: a similar device but wider; with no boots or foot straps; and with a grip tape topside surface to allow riders to flick and jump the board like a skateboard.

The two very similar wake-riding activities involve jumping or riding the boat’s wake. The repertoire of a skilled rider includes manoeuvres of breathtaking aerobic complexity but for beginners, all efforts are directed to getting out of the water and just staying upright behind the boat. Both forms of the sport require a relatively benign tow speed of around 15–20 knots, significantly slower than for conventional water skiing.

For Hume, it was his first-ever attempt on a wakeskate but he was an experienced skier and boarder. Almost as soon as he got up on the board from his third “deep water” start – this time heading downstream – he came off, falling forwards and striking a shallow sandbank, headfirst.

Hume sued Patterson’s insurer for the catastrophic tetraplegia resulting from the compression fracture his neck sustained in the impact. The factual issue before the New South Wales Supreme Court was exactly where in that reach of the river the spill had occurred.

An eight-day trial on the separate issue of liability only heard testimony from numerous witnesses and expert biomechanical engineers. His Honour concluded the driver had towed Hume outside the main channel, into the vicinity of a sandbank over which water depth was less than 1.5 m. Patterson’s evidence that the injury must have resulted from an unseen submerged obstacle inside the main channel was rejected.

The marine insurer opposing the claim asserted, that regardless of the fault of its insured driver, Civil Liability Act immunity should be granted to protect it from having to pay under the boat owner’s policy. The accident, it claimed, had resulted from an “obvious risk” arising from a “dangerous recreational activity”.

Wakeskating even at low speeds in a safe depth of water by an experienced water skier such as Hume – involved, it contended – “significant risk of physical harm”. The insurer’s proposition was rejected.

While the court agreed there was indeed a small risk of harm associated with the sport as it is normally conducted in the water of safe depth, in this instance, it was the hazardous circumstances – an unsafe water depth over or very close to the sandbar – that created the danger.

If the accident had occurred within the mapped channel, the insurer would not have had to make payment. Thus, the geomorphology, movement and hydrography of the river and channel relative to the sandbar was determinative in the judgment.²³⁴ This is attached as Appendix 1.

RF Thompson (Qld) Pty. Ltd. v Noosa Shire Council (2014)

This was a compensation matter over the rezoning of a 37 Ha site at Noosa in Queensland. The land had been approved for development in 1988 but was subject to the provisions of a new strategic plan in 1997, which, it was claimed, injuriously affected the Appellant in the amount of \$52.9 million. The court heard from 29 contending experts. Relevantly for this research, evidence was adduced in acid sulfate soils and groundwater. On behalf of the Respondent, this involved mapping the extent of the acid sulfate soils and groundwater conditions. This in turn allowed for a quantification of assessment, analytical and treatment costs. The Appellants' own mapping was limited.

In dismissing the appeal, the court held that the original 1988 Strategic Plan would have stood in the way of the Appellant's 'before' cases as effectively as its successor did in 1997. The Appellant was unable to demonstrate that a hypothetical, properly-advised and prudent purchaser would have held reasonable expectation of rezonings in 1988. The case law did not support the Appellant's argument that increasing environmental awareness meant it could not rely on the 1988 approval. Amongst other constraints, the court found that there were unknowns relating to the soil conditions which had the potential to significantly affect the feasibility of development of the site. The experts acknowledged that whilst these constraints could be overcome, the costs were unknown and could be considerable. The court found that, based on the evidence, the Appellant did not show that its interest was 'injuriously affected', which was required to award compensation, and thus dismissed the appeal.²³⁵ The judgment is attached as Appendix 2.

Swan v Santos GLNG Pty. Ltd. & Ors (2017)

This was another matter relating to the construction of an LNG pipeline – in this instance across farmland near Moura in Queensland. The Applicant had experience of three previous pipeline constructions across his property and, from the outset, informed the First Respondent²³⁶ that he was concerned about:

²³⁴ The Hume judgment can also be found at this link:

<https://www.caselaw.nsw.gov.au/decision/54a63b163004de94513db043>

²³⁵ The Thompson judgment can also be found at this link: <https://archive.sclqld.org.au/qjudgment/2014/QPEC14-017.pdf>

²³⁶ Swan v Santos (2017) Paragraph 33 of Mr Swan's affidavit filed on 26 August 2015 quoted in the judgment of Robertson DCJ at paragraph 11.

- access,
- felled timber,
- (soil) compaction relief,
- reseeded,
- weeds,
- surface disruption,
- excavated materials (particularly as the farm was acknowledged to be free from surface rocks),
- stock movement,
- soil subsidence,
- contour banks and erosion control,
- soil inversion,
- general ‘housekeeping’, and
- fencing.

In what transpired to be a protracted conflict, the Applicant alleged criminal breaches of Queensland’s Environmental Protection Act (1994) relating to the restoration of the landform to its pre-development condition. Expert evidence was adduced to assess the Respondents’ actions and compliance. This involved land capability mapping at a very high intensity as defined under the Soil and Resource Guideline²³⁷ together with pasture rehabilitation and monitoring. Whilst there was a series of contentious points between the experts relating to subsidence, weed management, grassland renovation and soil mapping, there was one key area of agreement. This was that the rehabilitated soil profile could never be a facsimile of its pre-development condition. This resulted in the rehabilitation being a matter of degree, as opposed to an absolute.

In that the application documents for a statutory approval should be able to be referred to when interpreting the approval (in this case the restoration of the soil profile) as extrinsic material, McGrath (2021)²³⁸ says:

“The correct approach now appears to be that taken by Robertson DCJ in Swan v Santos GLNG Pty Ltd & Ors [2017] QPEC 2 (Swan) at [138]-[139] when construing conditions of an environmental authority under the Environmental Protection Act 1994 (Qld):

[138] In dealing with what are essentially civil proceedings, with significant potential detriment to Santos e.g., the finding of criminal conduct albeit in a civil proceeding; it

²³⁷ McKenzie, N. J., et al. (2008). Guidelines for surveying soil and land resources, CSIRO Publishing.

²³⁸ McGrath, C (2021). High Court states important principles for construing statutory approvals. <https://www.higginschambers.com.au/sunland/>

is essential that the Court construe those conditions said to be contravened in accordance with established principles of statutory construction.

[139] Environmental Authorities (EAs) are statutory instruments, pursuant to the Statutory Instruments Act 1992 (ss 6, 7(2)(c), 7(3)); and by s 14 and Sch 1 of that act, s 14A(1), s 14B(1) and s 35C of the Acts Interpretation Act 1954 applies so that:

- (a) the interpretation is to be preferred that best achieves the purposes of the EA;*
- (b) regard may be had to extrinsic material, provided certain circumstances exist; and*
- (c) any heading to a provision of the EA forms part of that provision.”*

Thus, in this matter, the High Court²³⁹ supported the Queensland Planning and Environment Court’s approach²⁴⁰ to construing statutory approvals. McGrath states that it “*overturns a principle that had bedevilled enforcement of ambiguous approvals for decades: that ambiguity was to be resolved in favour of the person subject to the conditions. That approach has now been resoundingly rejected.*” The relevant judgements are attached in Appendix 3.



Plate 8. Contemplating piezometer access in the same effluent disposal scheme as depicted in Plate 7 (Photograph by C. Anderson of author, 2019).

The next section discusses the validation of the indicant using experts to compare information and data presented by at least two competing parties, as they would in a joint expert process.

²³⁹ The Supreme Court’s judgment in Swan can also be found at this link:
<https://www.queenslandjudgments.com.au/caselaw/qca/2019/6/pdf>

²⁴⁰ The Queensland Planning and Environment judgment in Swan can also be found at this link:
<https://archive.sclqld.org.au/qjudgment/2017/QPEC17-002.pdf>

Indicant validation

The indicant was then validated by four recognised experts and a third-year undergraduate student in Agricultural Science (the ‘validators’). The validators were selectively briefed with evidence from three additional matters between 2011 and 2017, also in Queensland and NSW (the ‘Validation matters’). Two of the validators, the student and an Expert Geologist and Hydrogeologist, were asked to complete the validation exercise on all three matters. The other three validators, each expert in their own fields of engineering and science, were asked to complete the exercise on matters closest to their individual areas of expertise. The validators’ qualifications and their nominated area(s) of expertise are tabulated in the next chapter.

To assess whether the indicant achieved its intended purpose, an approach was formulated to assess whether it could be used by others to reach a conclusion, whom those others might need to be (for example, is an expert required to understand it or could a layperson or lay witness use it equally as well?), and the sensitivity of the results to varying the expert assessment process using the indicant (that is, in chemistry terms, how rugged²⁴¹ the test is).

In acknowledging that because each of the matters tested used matters that had already been decided, the validation naturally addressed only one part of its proposed application and utility, that of its potential use by experts and submitters. To assist in adjudications, it would have to be tested during the matter. This was not completed in this research and would form part of the indicant’s future development.

Validation of the indicant was completed using three methods:

1. repeating the evaluation method using case materials and reports from three additional legal matters between 2011 and 2017, also in Queensland and NSW (validation matters),
2. briefing four recognised experts with the same case materials and reports (as a brief of evidence²⁴²) in the validation matters, inviting them to use the indicant, identify any shortcomings and suggest improvements through a User Engagement Survey; and
3. similarly briefing a third-year undergraduate student in Agricultural Science in the same manner as the experts to evaluate the level of user expertise required.

²⁴¹ In analytical chemistry, ruggedness is expressed as the lack of influence on test results of operational and environmental variables of the analytical method (Vander Heyden, Y. and D. L. Massart (1996). Chapter 3 Review of the use of robustness and ruggedness in analytical chemistry. *Data Handling in Science and Technology*. M. M. W. B. Hendriks, J. H. de Boer and A. K. Smilde, Elsevier. 19: 79-147. Here it is a measure of the reproducibility of the Indicant results under normal operating conditions (e.g., within a JER process) from case to case and expert to expert.

²⁴² The briefs of evidence given to the Validators, at the time of writing, are available through the links in the briefing letters attached in Appendix 9.

The matters were selected on the same criteria as for the indicant testing. The four experts (designated Validator A to Validator D) were selected using particular criteria. Firstly, none had given evidence in any of the three additional legal matters. Secondly, each had been accepted by a court as an expert and had given evidence in at least one of the areas identified above in the indicant conceptualisation section (above). Thirdly, three of whom had acted as my counterpart²⁴³ in litigation and had each given evidence in court matters, and fourthly, each was willing to participate in this research.

Two of the experts (Validators A and B) had previously claimed expertise in multiple areas and this had been accepted in the courts. Validators C and D had only claimed expertise in the areas of geology and hydrogeology.

Validator E, the third-year undergraduate student in Agricultural Science, was selected because he had not been accepted by a court as an expert, had never given evidence and could be usefully considered to be a ‘lay witness’,²⁴⁴ and had a broad working knowledge of land capability and a familiarity with assessment terms. Also, he had only limited exposure to the court process in the collection of soil and water data, and he was willing to participate in this research.

Three of the four experts (Validators A, B and C) were each allocated one matter to test, directly related to their areas of expertise in which they had given evidence in court previously. They were each asked to use the developed procedure and, from their training and experience, suggest any improvements.

To test the operability of the indicant and assess its robustness, Validators D and E were asked to test all three matters. All responses were recorded, and the scores rounded to the nearest whole number.

Importantly, using the indicant, all validators would complete the common (compulsory) survey fields and were free to choose their own areas of expertise, irrespective of their professions, qualifications and instructions. These were elective fields within the survey. This reflects two factors. Firstly, the wholesale interaction, at all levels, of landform, agriculture and water resource scientific evidence. Secondly, it is the professional who claims their area(s) of expertise that are tested in court. The validation matters were selected on the same criteria as for the evaluation matters and are summarised in the following sections whilst the judgements or published reasons are attached in cited appendices.

²⁴³ The expert “*on the other side*”.

²⁴⁴ A lay witness is generally one who is not testifying as an expert witness.

Evaluation matters

Three further matters were selected on the same basis as the five matters used to validate the Indicant. The validators then used the indicant, acting as third-party assessors. The further matters are detailed in the following sections.

Barns and Barns v Maroochy Shire Council (2010)

This was a compensation matter over the rezoning of a 155 Ha site at Weyba Downs in Queensland. The Appellants had purchased the land in 1975 for investment purposes and for its potential subdivision potential for housing. The land was heavily vegetated and had been used, intermittently, for forestry.

In 1996, the local authority (at that time), Maroochy Shire Council, introduced a new planning scheme that designated most of the site to be worthy of protection of agricultural, conservation and/or valued habitat lands. The Appellants sought relief from the Queensland's Planning and Environment Court in the form of compensation for the market value of the property had it not been rezoned. In support of their case, they produced evidence that most of the land was not Good Quality Agricultural Land (GQAL) as defined under the provisions of State Planning Policy 1/92 *'Development and Conservation of Good Quality Agricultural Land'*. Expert evidence was adduced from several witnesses including agricultural scientists, ecologists, engineers and valuers. At the heart of the dispute was the agricultural assessment of the lands and what should be protected under the policy. The Appellants' scientist opined that 19% of the site was GQAL whereas the scientist retained by the Respondent (the Council) said it should be 68%. Whilst this difference was marginally narrowed during the JER process, the issue remained determinative in the matter. The very high intensity mapping (involving 12 detailed boreholes and 18 additional observations) by the Respondent's scientists was contrasted to that completed for the Appellants, which relied on 7 sites in total.

In deciding that no compensation should be paid, the Judge pointed to the gap between the scientists' views but also the effect that would have had on a prudent purchaser. He judged that such a purchaser would have been concerned that the difference in mapping could reduce the prospects for a future subdivisional approval. Thus, the soil mapping, analysis and interpretation and the data was determinative. The judgment is attached in Appendix 4.

Gillion v Scenic Rim Regional Council (2013)

This was a matter relating to the commercial abstraction of groundwater from unregulated aquifers on Tamborine Mountain in Queensland. Geologically, the mountain was formed from basalt lava flows (from Mount Warning in New South Wales) predominantly overlain by free-draining ferrosol soils. In

respect of the litigation, the geology was important in that groundwater recharge is rapid and drainage is unconfined.

The litigation involved an appeal against the local authority's (Council) decision to reject a development application for commercial groundwater abstraction at a maximum rate of 564 m³/week. This, in turn, had followed from enforcement proceedings by Council in 2010, declaring the abstraction unlawful. As such, at the time of the litigation, the aquifers were unregulated and accessed by multiple unregistered bores. Anecdotally, these bores would be replaced and/or deepened as residents 'chased' the groundwater resource as consumption increased. Evidence was adduced in groundwater quality and quantity. For the Appellant, that evidence was based on pump testing, hydrochemistry and monitoring using data loggers. The waters were aged using Cook's chloride mass balance method and for the production bore, a transit time of 32 years was calculated. The Respondents by Election called an expert who collected no physical data but relied on anecdotal evidence.

Whilst the appeal was rejected on town planning grounds, the Judge accepted that groundwater could be abstracted sustainably, without resorting to 'groundwater mining' – a condition where groundwater abstraction exceeds the recharge rate. He also accepted that a physical level could be set in the landform that, when reached by the groundwater level, would allow for the measured and monitored cessation of abstraction, until the resource had recovered. As reflected in the JER, the Judge observed that it appeared no amount of data would have satisfied the Respondents by Election's expert in his responses to the contentions. In essence, there are limits to the extent that data sufficiency can assist courts in resolving land-use conflict and they were clearly met in this matter. The judgment is attached in Appendix 5.

Woolcott Group Pty Limited v Rostry Pty Limited & Anor (2016)

This was a matter involving the construction of five broiler (or meat chicken) farms on a 1900 ha site in Manila, New South Wales. A land-use conflict arose because a neighbouring lucerne farmer contended that the proposal would deleteriously impact his operation from 'feather-drop' from the chickens. Many local residents also opposed the farms, concerned about water quality impacts on the Namoi River and traffic impacts as it was postulated that this would, if approved, represent one of the largest broiler facilities in Australia, with a maximum throughput of more than of 15 million birds each year.

With respect to 44 contentions (or issues in dispute), 22 expert reports were submitted to the court. The completion of additional data collection, analysis, evaluation and documentation within the JER process significantly reduced the number of contentions before the trial. The data collection included:

- additional soil sampling from 18 boreholes to 4.2 m to inform a land capability assessment;
- additional water quality testing of both surface and groundwater;

- effluent disposal assessments;
- pump testing to establish groundwater yields;
- redesign of the surface water storages; and
- revised water balance modelling.

Whilst the JER recorded an agreement that enough work had been completed to properly assess the project, the Respondent's expert appeared to withdraw his agreement during the hearing, causing consternation. Ultimately, the court found that the additional data, together with the proposed conditions, formed a basis on which the project could be approved. The judgment is attached in Appendix 6.

Statistical analyses and qualitative assessments

In each of the selected matters, both qualitative and quantitative statistical analyses were completed to test the hypotheses and to identify patterns and trends in the results generated by the indicant. The hypotheses tested were whether:

1. an Indicant, using critical indicators and attributes, could objectively compare the assumptions, information, data and assessments underpinning expert evidence;
2. that comparison could then be ranked;
3. that ranking could be used by others; and
4. those others would need to be qualified.

The qualitative analyses comprised the following:

- a User Engagement Survey UES employing post-validation interviews employing three standard, but adapted questions used within Qualtrics:
 - How would you rate using the indicant?
 - Were you able to accomplish your goals of data assessment and evidence ranking?
 - How would you improve the indicant for future use?

and

- a thematic analysis of the interview results

The quantitative analyses of the results comprised:

- Central tendency (average as mean)
- Deviation (away from mean)
- Skewness (distortion or asymmetry in the data distribution)
- Kendall's coefficient of concordance (W) (measuring agreement amongst the Indicant users).

Collectively, these statistical analyses were designed to assess whether the indicant was ‘fit for purpose’.

Summary

The selected methods were to:

1. identify the critical landform, agricultural and water resource science indicators and attributes relating to the assessment of landform, agricultural and water resources relating to expert evidence,
2. further identify critical indicators and attributes of data sufficiency,
3. employ those indicators and attributes to objectively compare the substance of the assumptions, information, data and assessments that ultimately underpins the preparation the evidence,
4. conceptualise and document a function or an Indicant to describe the data adequacy supporting the evidence; and
5. test and validate the indicant.

It was in combination that these elements combined to provide a reliable answer. The indicators and attributes were identified. They were then used to score, comparatively, the information cited in each of the matters for a minimum of two competing parties. The scores were then compared.

In this chapter, the methods were described where a qualitative and quantitative model has been developed to allow the expert scientist to document their peer review – perhaps by their counterpart in the litigation – as well as helping the court to determine which evidence should be preferred in respect of objectivity, sufficiency, completeness and analysis. It described the methods whereby critical criteria were developed into comparators that may be used for expert evidence to provide additional scientific context for the court. Using the developed comparators, a mathematical procedure was detailed to derive an indicant. The indicant was then applied to five land-use conflicts between 1999 and 2020 in the Australian jurisdictions of Queensland and NSW.

To test the thesis and validate the indicant, four recognised experts together with a third-year undergraduate student in Agricultural Science were briefed with reports and case materials from three additional legal matters between 2011 and 2017, also in Queensland and NSW. They were each asked to use the developed procedure, record difficulties using the indicant and suggest improvements. Following the validation process, refinements were made to the model and each case study re-run to assess the effects of the changes.

The next chapter details the results of the indicant developmental testing, validation and statistical analyses.

Results

Overview

The previous chapter described the reasoning and the methods used to:

1. identify critical landform, agricultural and water resource and data sufficiency indicators and attributes,
2. formulate an indicant with the aim of objectively comparing those indicators and attributes when used for expert evidence,
3. evaluate that indicant by testing it, applying information, data and assessments used in evidence in five matters that were litigated from 2010 to 2017 in the Australian jurisdictions of NSW and Queensland; and then
4. independently validate the indicant through its use by four experts and one undergraduate student, each of whom were unfamiliar with all aspects of the research, in a further three matters litigated between 2010 and 2016.

This chapter presents the results of:

1. the evaluation,
2. the validation,
3. a comparison between the selected matters,
4. a comparison between experts,
5. a comparison between the experts and the undergraduate student with limited expertise; and
6. the statistical analyses.

In summary, it describes the research results whereby it is determined that an indicant containing critical indicators can objectively compare the assumptions, information, data and assessments underpinning expert evidence. Those comparisons may be ranked, and the ranking can be successfully used by others with limited expertise.

Results organisation

The results have been organised into tables accompanied by explanatory notes, for context.

Indicant evaluation and validation case studies

The legal matters, reviewed in Chapter 3, are tabulated below.

Table 5. Indicant evaluation and validation name, location and matter abbreviation.

	Matter name	Location	Precis	Abbreviated matter name
Evaluation	Bickham Coal Project (2010)	Hunter Valley, NSW	Proposed coal mine v Farmers and Equine industry	Bickham
	The QCLNG Pipeline Pty Ltd v McConnell Dowell Constructors (Aust) Pty Ltd & Anor (2011)	Surat Basin to Gladstone, Queensland	Pipeline facility v Contractor	QCLNG
	Hume v Paterson (2013)	Chinderah, NSW	Catastrophically injured Plaintiff v Defendant	Hume
	RF Thompson (Qld) Pty. Ltd. v Noosa Shire Council (2014)	Noosa, Queensland	Landholder rezoning compensation claim over v Local Authority	Thompson
	Swan v Santos GLNG Pty. Ltd. & Ors (2017)	Moura, Queensland	Energy Company v Farmer	Swan
Validation	Barns and Barns v Maroochy Shire Council (2010)	Weyba Downs, Queensland	Landholder rezoning compensation claim over v Local Authority	Barns
	Gillion v Scenic Rim Regional Council (2013)	Tamborine Mountain, Queensland	Commercial water supplier v Local Authority	Gillion
	Woolcott Group Pty Limited v Rostry Pty Limited & Anor (2016)	Moura, Queensland	Landholder v Commercial Broiler Company	Woolcott

This table illustrates the breadth of the matters tested, illustrating that land-use conflicts transcend geography and political boundaries. As summarised in the previous chapter, the collective matters selected for the evaluation and validation represent a broad range of litigation where expert landform, agriculture and water resource evidence was sought either singularly or in combination. They ranged from the Hume accident liability dispute to the Thompson and Barns compensation claims, and included significant pipeline disputes. Common to each matter was that the expert evidence was challenged, deconstructed during cross-examination and the focus of intense scrutiny. Similarly, for each matter, the monetary or consequential stakes of losing in court were high for at least one of the opposing parties.

Evaluation and validation indicant users and nominated areas of expertise

The evaluation and validation indicant user codes and nominated areas of expertise are tabulated below:

Table 6. Indicant evaluation user code, name, matter and nominated areas of expertise.

Indicant user	Matter	Nominated area(s) of Expertise
R ²⁴⁵	Bickham	Agriculture/Land Resource, Groundwater, Hydrography, Surface Water Quality, Water Supply
	QCLNG	Agriculture/Land Resource
	Hume	Land Resource, Hydrography
	RF Thompson	Acid Sulfate Soils, Groundwater

²⁴⁵ Where 'R' is the Researcher or Author.

Indicant user	Matter	Nominated area(s) of Expertise
	Swan v Santos	Agriculture/Land Resource

This table shows the areas of expertise that are used as delineators within the indicant, matching the areas nominated in at least one the five evaluation matters.

Table 7. Indicant validation user code, name, matter and nominated areas of expertise.

Indicant user	Qualifications	Occupation	Matter validated	Nominated area(s) of Expertise
A	BSc Agr (Hons) MSc Groundwater Hydrology	Senior Principal Soil Scientist, Hydrogeologist, Risk Assessor & Contaminated Land Auditor	Barns	Agriculture/Land Resource and Water supply
B	BSc (Hons) MAppSc Hydrogeology	Senior Principal Hydrogeologist	Gillion	Groundwater
C	BEng (Hons) MEng PhD	Senior Principal Civil Engineer	Woolcott	Environmental Management, Groundwater, Surface Water and Water Supply
D	BSc Geo MSc Hydrogeology	Principal Geologist & Hydrogeologist	Barns	Agriculture/Land Resource and Water supply
			Gillion	Groundwater
			Woolcott	Environmental Management, Groundwater, Surface Water and Water Supply
E	N/A	Undergraduate student in Agricultural Science and Agri-Business	Barns	Agriculture/Land Resource and Water supply
			Gillion	Groundwater
			Woolcott	Environmental Management, Groundwater, Surface Water and Water Supply
R ²⁴⁶	-	-	Barns	Agriculture/ Land Resource and Water supply
			Gillion	Groundwater
			Woolcott	Environmental Management, Groundwater, Surface Water and Water Supply

This table details the qualifications, occupations and nominated areas of expertise for the indicant validation. It is worth noting the overlap between the nominated areas of expertise. This sometimes causes difficulties during litigation as:

²⁴⁶ Researcher

- without leave from of the court, only one expert can give evidence in an area of expertise for any one party,
- the same data may be used by two experts in different disciplines, and
- an expert may elect to comment on an area that is within his/her area of expertise but outside the nominated area of expertise for that case.

The same indicant validation user codes used in this table have been used within each of the result tables in the next section.



Plate 9. Sugar Cane land at Mirani, Queensland, the site of the first Solar Farm litigation²⁴⁷ in Queensland where Class 3 Good Quality Agricultural Land (GQAL) was to be occupied for a 40-year lifespan. Concerns were raised over the wet season trafficability for operational maintenance of the facility (Photograph by author, 2018). The Solar Farm won approval.

Developmental testing results

The tabulated indicant evaluation results are presented in this section with the difference in the scores calculated, as it is the difference in the scores that alerts both the expert and the observer of the evidence to potential areas of disagreement.

²⁴⁷ *Mirani Solar Farm Pty Ltd v Mackay Regional Council & Mackay Sugar Limited* (2018) (QPEC 38) where approval was sought for a solar farm using long-term leases for a power 60 MW facility station (enough for 30,000 households). After 40 years all structures would be dismantled the land returned to “its natural state or in a better condition”, so that it could be used for agricultural purposes. The wet season trafficability issues were overcome by the proposal to graze sheep was for pasture management.

Expert qualification

Table 8. Expert qualification (SC1). ²⁴⁸

Indicant user	Matter	Retaining Party	Score (range) -60 to 60	Difference
R	Bickham	Applicant	60	0
		Submitter	60	
R	QCLNG	Applicant	60	0
		Respondent	60	
R	Hume	Plaintiff	60	0
		Defendant	60	
R	Thompson	Appellant	60	0
		Respondent	60	
R	Swan	Applicant	60	0
		1st Respondent	60	

These are scores from the ‘gatekeeper’ questions relating to expertise, legal briefing and jurisdictional rules that, if not answered in the affirmative, would prevent further progress through the indicant. This feature was not activated during the evaluation and validation processes to ascertain if these gatekeeper questions caused the validators difficulties.

This gatekeeper should alert both the expert and the instructing lawyer to issues of an expert’s expertise or credit before court time is wasted or expended. Whilst this situation is rare, not properly qualifying or briefing experts can effectively derail cases. This causes the parties and the courts particular difficulties and becomes even more important when court time within a jurisdiction is shared between land-use conflicts and criminal matters.²⁴⁹ The results in this section reflect that the highest possible score was achieved for each of the matters.

Land tenure

Table 9. Land tenure (SC2).

Indicant user	Matter	Retaining Party	Score (range) -15 to 70	Difference
R	Bickham	Applicant	70	0
		Submitter	70	
R	QCLNG	Applicant	70	0
		Respondent	70	
R	Hume	Plaintiff	70	0
		Defendant	70	
R	Thompson	Appellant	70	0

²⁴⁸ Where ‘SC’ is the Qualtrics software code applied to each sub-group within the Indicant.

²⁴⁹ In the case of Queensland’s Planning and Environment Court, the Judges also sit in the District Court. This effectively means that poorly managed cases that encroach on court time run the risk of unintended consequences in other matters for example: persons accused of crimes awaiting trial are remanded in custody for longer than they should be.

Indicant user	Matter	Retaining Party	Score (range) -15 to 70	Difference
		Respondent	70	
R	Swan	Applicant	70	0
		1st Respondent	70	

Again, the results in this table reflect that the highest possible score was achieved for each of the evaluation matters. This demonstrated each expert, as represented in the indicant evaluation, understood the site boundaries, the regulations, site history, licences and covenants.

Acid Sulfate Soils

Table 10. Acid Sulfate Soils (SC3).

Indicant user	Matter	Retaining Party	Score (range) -50 to 50	Difference
R	Bickham	Applicant	0	0
		Submitter	0	
R	QCLNG	Applicant	0	0
		Respondent	0	
R	Hume	Plaintiff	0	0
		Defendant	0	
R	Thompson	Appellant	-10	50
		Respondent	40	
R	Swan	Applicant	0	0
		1st Respondent	0	

All results were neutral (yielding a zero result) except in the Thompson matter. A neutral result has no impact on the ranking. Of the evaluation matters, Thompson was the only one assessed where acid sulfate soils formed an issue in dispute. The results in that matter reflect that the vast bulk of the data was gathered for the Respondent (yielding a difference in score of 50) even though the score of 40 suggests that the Respondent's data set had some gaps or shortfalls.

Agriculture / land resource

Table 11. Agriculture/land resource (SC4).

Indicant user	Matter	Retaining Party	Score (range) -250 to 280	Difference
R	Bickham	Applicant	106	80
		Submitter	186	
R	QCLNG	Applicant	41	141
		Respondent	-100	
R	Hume	Plaintiff	-23	107
		Defendant	-130	
R	Thompson	Appellant	0	0
		Respondent	0	
R	Swan	Applicant	13	44
		1st Respondent	57	

Each of the results reflect the relevant agriculture/land resource data gathered within each matter. Thompson yielded a neutral, zero result as it was not an issue in dispute in that matter.

Of note is the Hume matter, concerning the location and movement of a shoal in the Tweed River. Here the low scores are a function of the land resource relating to geomorphology, not agriculture. As such, much of the data assessed by the indicant was not required to be collected for this case even though some geomorphic assessment was required. Given this poor fit of this case to indicant's assessment the disparity in the scores suggest that the Defendant had less data and poorer quality data than the Plaintiff.

The other cases contained significant elements of the requirements for this part of the indicant assessment of the data quality. Bickham (scores 106 vv 186) and QCLNG (scores 41 vv -100) show a difference 80 and 141 respectively compared to Swan with difference of 44. This suggests there may not have been such a large disparity between the Plaintiff and Respondents for the Swan case than there was for both Bickham and QCLNG cases. The scores for the Bickham, QCLNG and Swan matters are each closer between the experts and again, this reflects the data supporting the evidence even though the scores indicate that all parties had gaps in the data sets and at least some issues with the data analysis.

Environmental management

Table 12. Environmental management (SC5).

Indicant user	Matter	Retaining Party	Score (range) -30 to 30	Difference
R	Bickham	Applicant	0	0
		Submitter	0	
R	QCLNG	Applicant	0	0
		Respondent	0	
R	Hume	Plaintiff	0	0
		Defendant	0	
R	Thompson	Appellant	0	0
		Respondent	0	
R	Swan	Applicant	0	0
		1st Respondent	0	

This table indicates that none of the environmental management questions relating to site history, acute and chronic risks, environmental nuisance or harm were triggered by the nominated areas of expertise in any of the evaluation matters. Therefore, all reported neutral scores.

Groundwater

Table 13. Groundwater (SC6).

Indicant user	Matter	Retaining Party	Score (range) -100 to 100	Difference
R	Bickham	Applicant	20	80

Indicant user	Matter	Retaining Party	Score (range) -100 to 100	Difference
		Submitter	100	
R	QCLNG	Applicant	0	0
		Respondent	0	
R	Hume	Plaintiff	0	0
		Defendant	0	
R	Thompson	Appellant	20	60
		Respondent	80	
R	Swan	Applicant	0	0
		1st Respondent	0	

This table indicates that groundwater featured as an issue in dispute in two of the evaluation matters: Bickham and Thompson. The Bickham results reflect the evidence given where it was determined that the interactions between the proposed mine and the Pages River were not fully explained by the Applicant. The Thompson results reflect the data and evidence relating to groundwater data and the interactions with acid sulfate soils and peat. For Bickham and Thompson, both the Appellant and the Respondent had gaps in the data or data quality although the Appellant had more gaps and data quality issues than the Respondent. All other matters reported neutral scores because the cases did not have any requirement for a groundwater assessment.

Land contamination

Table 14. Land contamination (SC7).

Indicant user	Matter	Retaining Party	Score (range) -50 to 50	Difference
R	Bickham	Applicant	0	0
		Submitter	0	
R	QCLNG	Applicant	0	0
		Respondent	0	
R	Hume	Plaintiff	0	0
		Defendant	0	
R	Thompson	Appellant	0	0
		Respondent	0	
R	Swan	Applicant	0	0
		1st Respondent	0	

This table indicates that none of the land contamination questions relating to site assessment, a conceptual site model (CSM) or sampling and analysis were triggered by the nominated areas of expertise in any of the evaluation matters. Therefore, all reported neutral scores.

Surface water quality

Table 15. Surface water quality (SC8).

Indicant user	Matter	Retaining Party	Score (range) -50 to 30	Difference
R	Bickham	Applicant	10	20
		Submitter	30	
R	QCLNG	Applicant	0	0
		Respondent	0	
R	Hume	Plaintiff	-50	0
		Defendant	-50	
R	Thompson	Appellant	0	0
		Respondent	0	
R	Swan	Applicant	0	0
		1st Respondent	0	

This table indicates that surface water quality featured as an issue in dispute in the Bickham and Hume case studies.

The Bickham results reflect the evidence given where it was determined that the interactions between the proposed mine and the Pages River were not fully examined by the Applicant as they related to low flows during drought. The Applicant had reported surface water impacts based on average flows resulting in a skewed data set. The Applicant's positive value (10) does reflect the collection of data however, it appears to be short of the data collected by the Submitter with a score of 30.

The Hume results reflect, in part, that whilst surface water quality evidence was adduced, this was more a matter of geomorphology and hydrography. Each of the other matters reported neutral scores.

Hydrography

Table 16. Hydrography (SC9).

Indicant user	Matter	Retaining Party	Score (range) -100 to 80	Difference
R	Bickham	Applicant	20	60
		Submitter	80	
R	QCLNG	Applicant	0	0
		Respondent	0	
R	Hume	Plaintiff	-40	20
		Defendant	-60	
R	Thompson	Appellant	0	0
		Respondent	0	
R	Swan	Applicant	0	0
		1st Respondent	0	

Again, this table indicates that like surface water quality, hydrography featured as an issue in dispute in Bickham and Hume only. The data collected and the analysis and quality of the data in the Bickham

case study indicates the Applicant had shortfalls if the information (score 20) compared to the Submitter (score 80). The difference (60) reflects the evidence given relating to the hydrologic indices in drought where it was determined that the Pages River would be impacted to a greater degree than postulated. However, both were positive scores indicating data was collected. With Hume, it was the paucity of data on both sides that caused the scores to be negative, yielding relatively close (difference 20) final scores.

Water supply

Table 17. Water supply (SC10).

Indicant user	Matter	Retaining Party	Score (range) -130 to 100	Difference
R	Bickham	Applicant	15	80
		Submitter	95	
R	QCLNG	Applicant	-39	0
		Respondent	-39	
R	Hume	Plaintiff	-39	0
		Defendant	-39	
R	Thompson	Appellant	0	0
		Respondent	0	
R	Swan	Applicant	-39	29
		1st Respondent	-10	

The assessment of water supply was triggered in all matters except Thompson. In Bickham it was a central issue that had been assessed, but not by the parties to the same degree. Again, the issues went to mine impacts and the identification of alternative supplies in drought. The scores reflect the broader set of data and data analysis on the behalf of the Submitter although the Submitter had a gap in the data. The analysis indicates the Applicant had more gaps in the data than the Submitter.

In QCLNG and Hume the parties scored the same result, marked down due to a lack of statistical analysis. This is unremarkable because the cases did not rely on statistical methods as part of the analysis.

The Swan matter showed both the Applicant and First Respondent to be lacking in an appropriate collection of data or its analysis for the purposes of the case. Both had negative scores although the First Respondent had a lower negative than the Applicant. In this case, the rainfall analysis for cattle management and rehabilitation became a factor that was not properly addressed.

Data quality

Table 18. Data quality (SC11).

Indicant user	Matter	Retaining Party	Score (range) -20 to 20	Difference
R	Bickham	Applicant	10	0

Indicant user	Matter	Retaining Party	Score (range) -20 to 20	Difference
		Submitter	10	
R	QCLNG	Applicant	10	0
		Respondent	10	
R	Hume	Plaintiff	10	20
		Defendant	-10	
R	Thompson	Appellant	0	10
		Respondent	10	
R	Swan	Applicant	10	0
		1st Respondent	10	

This table reflects the collection of site-specific data relating to their nominated areas by the experts in all matters except for the Appellant in Thompson and the Defendant in Hume. The collection of at least some site-specific data is central to the provision of landform, agriculture and water resource evidence and although such data was collected, there were gaps in the data set reflected by the scores being 10 instead of 20.

The zero and -10 scores for the Thompson Appellant and Hume Defendant respectively indicate the lack of site-specific data. In Thompson, the Appellant's lack of data made rehabilitation and treatment costings more difficult to assess. In Hume, the Defendant was crucially unable to adduce evidence to counter evidence from the Plaintiff concerning water flows on and near the shoal or sandbar.

Analysis evaluation

Table 19. Analysis evaluation (SC12).

Indicant user	Matter	Retaining Party	Score (range) -10 to 10	Difference
R	Bickham	Applicant	10	0
		Submitter	10	
R	QCLNG	Applicant	10	0
		Respondent	10	
R	Hume	Plaintiff	10	0
		Defendant	10	
R	Thompson	Appellant	10	0
		Respondent	10	
R	Swan	Applicant	10	0
		1st Respondent	10	

This table reflects the results of questions relating to the evaluation of the data and the ability for the expert to synthesise a view, allowing them to form an expert opinion. Whilst in all cases the answer was taken to be in the affirmative and consequently of use for decision making, alternatively a negative score would mean that any evidence would need to be so heavily qualified that it would be of little used to form a view. In the event of a negative answer, three further (unscored) questions would have been

posed relating to what further data collection, analysis or evaluation would be necessary. This gives the assessor the opportunity to specify the shortfall(s).

Overall score

Table 20. Overall score (SC0).

Indicant user	Matter	Retaining Party	Score (range) -950 to 850	Difference
R	Bickham	Applicant	296	220
		Submitter	516	
R	QCLNG	Applicant	191	141
		Respondent	50	
R	Hume	Plaintiff	87	147
		Defendant	-60	
R	Thompson	Appellant	150	120
		Respondent	270	
R	Swan	Applicant	163	44
		1st Respondent	207	

This table provides details of the overall scores in the evaluation matters for each of the parties as they relate to the landform, agriculture and water resource evidence presented. They are simply the sum totals from each of the preceding tables. The scores indicate that for all cases there were shortfalls in the datasets for all parties. This may be in part because not all parts of the indicant were applicable to the cases used to develop and test the indicant. However, the difference in the scores would suggest a difference in the data collected and the analysis of that data.

The inferences from the results scores are:

- the Bickham score indicates that both parties collected data with the submitter collecting more and with more extensive analysis (a difference of 220);
- QCLNG results show that both parties collected data with the applicant having the greater data (a difference of 141);
- in Hume the Plaintiff had a higher indicant score (a difference of 141) with the Defendant score being negative;
- the Thompson score indicates that both parties collected data with the Respondent collecting more and with more extensive analysis (a difference of 120); and
- the Swan score indicates that both parties collected data with the Respondent having a higher indicant score although the difference of 44 is smaller than the other case studies that ranged from 120 to 220.

What should be noted is that the indicant scores for each case do not permit a direct comparison to be made between the matters in terms of the datasets and the analysis. Each case study is separate, and the

appropriate comparator is the difference between the data uses as analysed for each party in each individual matter.

Validation results

In the same vein as the evaluation results, the tabulated indicant validation results are presented in this section. For the validation matters, there are five validators (plus the researching author) yielding six different score sets (one for each represented party). It is acknowledged that employing only six validators could only ever yield a partial proof of concept that will require further testing and refinement as time goes on.

Validators would complete the common (compulsory) survey fields and were free to choose their own areas of expertise (in elective fields), irrespective of their professions, qualifications and instructions. In their letter of instruction (or in this research, request) the validators were asked to address specific areas of expertise in the matters detailed in the table above. In essence, the validators were not limited in their choices. For Validators A, B and C the specific areas reflected their professions, qualifications and expert evidence history. They were asked to test one matter only, in which the expert had been matched with the issues in dispute. Validator D, the geologist and hydrogeologist, was asked to address the same areas of expertise as A, B and C, but all three matters. In this, he was being asked to address some areas outside his professions, qualifications and expert evidence history. Validator E, the agricultural science and agribusiness undergraduate student with no completed qualifications or expert evidence history, was asked to address the same areas in all matters.

Expert qualification

Table 21. Expert qualification (SC1) Score (range) -60 to 60²⁵⁰

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	40	-	-	0	40	60
	Respondents	40	-	-	0	40	60
Gillion	Applicant	-	40	-	60	60	60
	Respondents	-	30	-	50	50	60
Woolcott	Appellant	-	-	40	50	50	60
	1 st Respondent	-	-	40	60	50	60

This was a compulsory field. Although the scores in themselves are different amongst the assessors, there is a consistency in the patterns of responses, for instance:

²⁵⁰ Where 'SC' is the Qualtrics software code applied to each sub-group within the Indicant.

- Barns resulted in all having equal scores for both Appellants and Respondent;
- Gillion had the Applicant higher scored than the Respondent; and
- Woolcott resulted in the equal scores were for both Appellant and Respondent, excepting Validator D who scored the respondent higher than the appellant.

The scores in Barns for Validator D appear anomalous. This was investigated and confirmed in the post-survey interview. The validator felt unqualified in that matter despite being asked to assume expertise in the nominated areas in the instructing letter.

Land tenure

Table 22. Land tenure (SC2) Score (range) -70 to 70

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	-10	-	-	30	30	70
	Respondents	-10	-	-	70	30	70
Gillion	Applicant	-	-30	-	50	30	70
	Respondents	-	-50	-	50	30	70
Woolcott	Appellant	-	-	70	70	30	70
	1 st Respondent	-	-	70	70	70	70

This was also a compulsory field. Whilst this may be linked to the briefing materials in each matter being voluminous, the range of scores in this table shows the effect of at least some of the validators being unsure of aspects of site tenure, history, covenants and licences. Again, the scores in themselves are different amongst the assessors but there is a consistency in the patterns of responses:

- Barns resulted in all having equal scores for both Appellants and Respondents except for Validator D who scored the Respondents more highly;
- Gillion resulted in all having equal scores for both Applicant and Respondent except for Validator B who scored the Applicant more highly; and
- Woolcott resulted in all having equal scores for both Appellant and Respondent except for Validator E who scored the Respondent more highly.



Plate 10. Swan v Santos (QPEC 2017) litigation over gas pipeline rehabilitation litigation. A central agreement between the experts was that no post-development soil profile could be a facsimile of its original condition. Instead, vegetative cover and pasture quality could be measured and assessed on an ongoing basis (Photograph by author, 2017).

Acid Sulfate Soils

Table 23. Acid Sulfate Soils (SC3) Score (range) -50 to 50

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	0	-	-	0	10	0
	Respondents	0	-	-	0	10	0
Gillion	Applicant	-	0	-	0	0	0
	Respondents	-	0	-	0	0	0
Woolcott	Appellant	-	-	40	0	0	0
	1 st Respondent	-	-	40	0	0	0

This was also an elective field. These results reflect the fact that acid sulfate soils were not principal issues in dispute in any of the proceedings. They were, however, mentioned in the judgement, but not substantially assessed in Barns and this is the likely basis of Validator E's selection. The parties returned the same score (10).

Validator C also elected to cover acid sulfate soils, as he was free to do, contrary to the instructing letter. Again, the parties returned the same score (40), the effect being neutral.

Agriculture / land resource

Table 24. Agriculture / land resource (SC4) Score (range) -250 to 280

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	63	-	-	0	13	-25
	Respondents	95	-	-	0	140	101
Gillion	Applicant	-	0	-	0	-25	0
	Respondents	-	0	-	0	-50	0
Woolcott	Appellant	-	-	-30	0	-70	-60
	1 st Respondent	-	-	-30	0	120	77

This was an elective field. The results are:

- Barns resulted in variable scores, but all with the same ranking, for both Appellants and Respondents except for Validator D who did not select this area;
- Gillion resulted in all having equal scores for both Applicant and Respondent except for Validator B who scored the Applicant more highly; and
- Woolcott resulted in all having equal scores for both Appellant and Respondent except for Validator E who scored the Respondent more highly.

Whilst this table reflects variation in the individual scores, the ranked score positions are the same or neutral for all validators scores in each matter. Whilst this might reflect different levels of validator conservatism in approach, the overall result is important given this area of expertise combines 28 questions in agriculture, land capability, land quality and water supply.

Environmental management

Table 25. Environmental management (SC5) Score (range) -30 to 30.

Matter	Retaining party	Test respondent code					
		A	B	C	D	E	R
Barns	Appellants	-10	-	-	0	10	0
	Respondents	-10	-	-	0	10	0
Gillion	Applicant	-	30	-	0	0	0
	Respondents	-	-10	-	0	0	0
Woolcott	Appellant	-	-	0	0	10	-30
	1 st Respondent	-	-	0	0	10	30

This table indicates mainly neutral responses with variable responses in relation to Woolcott and, in relation to the Gillion Applicant case (Validator B), where the issue of environmental nuisance or harm was related to sustainable groundwater use.

Groundwater

Table 26. Groundwater (SC6) Score (range) -100 to 100.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	-80	-	-	-100	60	0
	Respondents	-80	-	-	-100	60	0
Gillion	Applicant	-	60	-	60	80	100
	Respondents	-	60	-	60	-100	40
Woolcott	Appellant	-	-	-80	-80	20	-60
	1 st Respondent	-	-	-80	-20	100	80

Whilst this table reflects variation in the individual scores, the ranked score positions are again the same or neutral for all validators scores in each matter. This is significant in respect of evidence ranking.

Land contamination

Table 27. Land contamination (SC7) Score (range) -50 to 50.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	-50	-	-	0	0	0
	Respondents	-50	-	-	0	0	0
Gillion	Applicant	-	0	-	0	0	0
	Respondents	-	0	-	0	0	0
Woolcott	Appellant	-	-	0	0	-50	0
	1 st Respondent	-	-	0	0	-50	0

This table reflects that in each validation matter land contamination was not an issue in dispute. Validators A and E elected to address the issue and marked-down the assessments of both parties equally. Validator D returned a neutral score in all matters.

Surface water quality

Table 28. Surface water quality (SC8) Score (range) -50 to 30.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	0	-	-	0	10	0
	Respondents	0	-	-	0	30	0
Gillion	Applicant	-	0	-	0	20	0
	Respondents	-	0	-	0	-10	0
Woolcott	Appellant	-	-	20	0	10	-30

	1 st Respondent	-	-	30	0	30	30

This table reflects that surface water quality was not an issue in dispute in Barns or Gillion but was in Woolcott. Validator E elected to address the issue for all three matters. Whilst all three validators ranked the parties and scored the First Respondent's assessments equally, the scores for the Appellant's assessments varied.

Hydrography

Table 29. Hydrography (SC9) score (range) -100 to 80.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	0	-	-	0	60	0
	Respondents	0	-	-	0	80	0
Gillion	Applicant	-	0	-	0	20	0
	Respondents	-	0	-	0	-10	0
Woolcott	Appellant	-	-	30	0	60	-30
	1 st Respondent	-	-	80	0	80	30

This table reflects that, like surface water quality, hydrography was not an issue in dispute in Barns or Gillion but was in Woolcott. Again, Validator E elected to address the issue for all three matters. Whilst the score gap varied between 20 and 60 points, all ranked the parties the same. Again, Validator D returned a neutral score in all matters.

Water supply

Table 30. Water supply (SC10) score (range) -130 to 100.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	-19	-	-	0	10	-19
	Respondents	-10	-	-	0	30	10
Gillion	Applicant	-	0	-	0	-25	0
	Respondents	-	0	-	0	-39	0
Woolcott	Appellant	-	-	-19	0	10	-49
	1 st Respondent	-	-	-19	0	10	77

Whilst the scores are variable, this table shows consistent rankings by validators on the issue of water supply, apart from Validator D who returned a neutral score in all matters. This was not an issue in dispute in the Gillion matter. Again, Validator E elected to address the issue for all three matters.

Data quality

Table 31. Data quality (SC11) score (range) -20 to 20.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	10	-	-	10	10	10
	Respondents	10	-	-	10	10	10
Gillion	Applicant	-	10	-	10	10	10
	Respondents	-	10	-	10	-10	10
Woolcott	Appellant	-	-	10	10	10	-20
	1 st Respondent	-	-	10	10	10	10

This table shows consistent results with equal scores except for the Respondents in Gillion (Validator E) and the Appellant in Woolcott (Validator R). This appears to reflect the narrow construction of the five questions in this section of the survey, and that the response selection as to the reasons for data inadequacy are not scored. The difference between Validator R's score of -20 in Woolcott is due to a difference over an answer to the Appellant's collection of site-specific data.

Analysis evaluation

Table 32. Analysis evaluation (SC12) Score (range) -10 to 10.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	10	-	-	10	10	10
	Respondents	10	-	-	-10	10	10
Gillion	Applicant	-	10	-	10	10	10
	Respondents	-	10	-	10	10	10
Woolcott	Appellant	-	-	10	10	10	10
	1 st Respondent	-	-	10	10	10	10

This table reflects that there is a maximum of only two questions posed about data analysis and the synthesis of an expert opinion. The only minus score is applied to the selection of an unsure answer. This was selected once by Validator D in the Barns Respondent's case.

Overall score

Table 33. Overall score (SC0) Score (range) -950 to 850.

Matter	Retaining party	Validator code					
		A	B	C	D	E	R
Barns	Appellants	-27	-	-	-50	243	125

	Respondents	5	-	-	-30	390	251
Gillion	Applicant	-	120	-	190	185	250
	Respondents	-	50	-	180	-80	190
Woolcott	Appellant	-	-	90	60	70	-60
	1 st Respondent	-	-	140	130	400	367

This table shows the summation of all validation scores by each validator for each party in each matter. Note that the lowest and highest possible scores (ranging from -950 to 850) reflect the largest range possible, based on the indicant user's areas of expertise election. By necessity, this had to remain a free choice. Although the scores in themselves are different amongst the assessors there is a consistency in the patterns of responses, for instance:

- Barns resulted in all validators indicating the Respondent having a higher score than Appellant;
- Gillion had the Applicant higher scored than the Respondent; and
- Woolcott resulted in the 1st Respondent having a higher score than the Appellant.

Whilst the scores vary between validators, it is of note that their rankings between each party are the same. The next section details a statistical analysis completed of these data.

Statistical analyses results

A series of both qualitative and quantitative statistical analyses were completed to test the hypotheses and to identify patterns and trends in the results generated by the indicant.

Qualitative statistics

Qualitative assessments were used to compliment quantitative analyses and comprised the logging of communications together with a thematic analysis based on a User Engagement Survey (UES).

Validator communications

Communications with the validators were limited to:

- Provision of the instructing letter and an electronic brief to each validator;
- Availability by email or telephone should queries arise; and
- A UES in the form of post-validation interviews once all scores had been recorded and reviewed.

Communications between the validators was limited by not disclosing their identities. Only Validators D and E knew of each other's participation. An analysis of the quantitative results indicates that there was no collusion or measurable influencing of views between them.

The instructing letters are attached in Appendix 7. These contained links to the electronic briefing materials to each Validator. These were voluminous (Barns was 402, Gillion 663 and Woolcott 360 pages, respectively).

Communications during validation exercise

Two of the validators raised queries during the exercise. One, Validator A, emailed a query having completed two runs of the indicant raising the issue of the information absent from the brief but quoted in the judgment, saying:

"...I am just completing the indicants as requested, but I am ...uncertain how to answer the questions from the appellants experts' position (assuming I am supposed to answer the indicant questions from the perspective of the information at hand were I the appellants expert). Or am I supposed to complete both indicant surveys using all the information you provided? In which cases my responses will be identical (as I will be using all available information to give my independent expert opinion)?"

This was clarified in a telephone response where one additional report was provided and a JER outcome, narrowing a dispute over the percentage of GQAL on the site and quoted in the judgement, could be relied upon. The Appellant's case was subsequently re-run and that score relied upon. Similarly, a telephone call was received from Validator E, who had not appreciated the difference between the Respondent in Gillion (the local authority) and the Respondents-by-Election (the submitters). This was clarified and a follow-up email received. It said:

"...Please see attached an updated spreadsheet with new results for Gillion v SCRC (TMPA). This test was re-taken due to the error in understanding/comprehending the question/s in the first test."

In that matter, it was the submitters (Respondents-by-Election), the Tamborine Mountain Progress Association (TMPA) who had adduced the groundwater evidence as opposed to the Respondent, the Scenic Rim Regional Council (SCRC). Using the indicant in the Respondent's expert's position yielded different (incorrect) results.

User Engagement Survey

A User Engagement Survey (UES) was completed employing post-validation interviews. These were conducted with each external validator²⁵¹ by telephone over a two-day period, after the results were recorded on the Indicant website. This was a precaution to ensure their opinions and view expressed were their own. In each case, an initial telephone call was made about participating in the UES and an appointment was set for another day at a mutually convenient time. They were each informed that the UES would take about 15 minutes. Collectively, the UESs each ranged from 27 to 34 minutes. The UES was in the form of an open, free-flowing discussion based on the following three questions (with the participant results **bracketed**):

1. How would you rate using the indicant? Was it:
 - a. Extremely difficult
 - b. Somewhat difficult **(1)**
 - c. Neither easy nor difficult **(2)**
 - d. Somewhat easy **(1)**
 - e. Extremely easy **(1)**
2. Were you able to accomplish your goals of data assessment and evidence ranking?
 - a. Yes **(5)**
 - b. No
 - c. Unsure
3. How would you improve the indicant for future use?

Having established context with answers to the first two questions, the answers to this question were recorded to develop a thematic analysis.

Thematic analysis

A thematic analysis of the interview data revealed three key themes in the validators' attitudes towards the use of the indicant. They were the:

1. definition of participatory role in the process;
2. importance of the brief; and
3. use of confining questions.

²⁵¹ As opposed to the Researcher (Validator Code 'R' in the result tables).

Some participants included all three of these themes in their statements, while others only included one. All three themes were explored and sub-themes developed. Some quotes were such that they necessarily informed more than one theme.

Definition of participatory role

The first theme that emerged from the data was a difficulty in understanding the expert's role in relation to:

1. expertise boundaries;
2. their counterpart; and
3. the interactions of the parties.

Quotes included:

"I wasn't sure whether I was qualified to comment (outside of the area of expertise)"

"The Appellant's expert did nothing"

"The Respondent's expert did very little"

"When they are talking orders of magnitude being OK it just shows they have no concept of sensitivity analysis"

"It was difficult to reference my reliance on the counterpart's (opposing expert's) work"

From these quotes, a definitional issue around the breadth of expertise was apparent, together with observations about the amount of work completed, through to the referencing of the opposing work and how that could be accounted for within the indicant.

Importance of the brief

The second theme was a level of frustration with the brief of materials in each matter. Quotes included:

"The brief has to be clear"

"Sifting through all of the materials took time"

"The brief could have been broken down better – it needed sign-posts"

"I had to look up a number of technical terms"

"Regolith was not mentioned in the materials – I had to spend a lot of time looking for it"

As previously stated, one report was missing from the brief and had to be provided to one validator. Base information referred to in reports within the brief was not always in those reports (as written). The issue of the time spent preparing for the survey was raised in relation to the brief. The duration of each survey completion was recorded but was not raised in any of the responses. Excluding two anomalous results (where the indicant run had been started, left and resumed days later) the expert validators completed the exercise in 4 to 17 minutes, depending on the matter. The undergraduate student took between 12 to 44 minutes, again depending on the matter. In this exercise, the validators' preparation times can be readily discounted as the adjudicators, experts and stakeholders should already be prepared.

Separately, the issue of technical terms goes in part to the interaction of the landform, agriculture and water resource scientific evidence.

The time spent using the Indicant should be contrasted with legal costs. In Australian Dollars, these currently range from less than \$3500/hr to more than \$15,000/hr depending on the size of the matter and the number of professionals required (excluding court staff). Even if an expert charges \$750 per hour, 30 minutes spent narrowing the issues or refining their arguments with their counterpart would be worthwhile as court costs are so high.

Use of confining questions

The third theme to emerge was that in the use of confining questions. Quotes included:

- “The questions were stark”*
- “It was frustrating not to be able to say more – but the questions wouldn’t allow it”*
- “Some of the questions asked didn’t apply”*
- “There’s a danger the process would break down in highly technical cases”*
- “It was hard to express the differentiation of the parties”*
- “I completely understood the rationale and the need to focus (the) questions”*
- “There is no need to change the questions”*
- “The questions made perfect sense”*

From these quotes, the use of confining questions caused a range of apparent reactions from discomfort to welcome recognition. Whilst Barristers (used to cross-examination) may read such a range as stating the obvious, during this validation exercise one must remember that the scores were to be taken at face value alone. Aside from ranking, the examination of the answers was to ensure the critical indicator or attribute had been considered.

Suggested improvements

When asked to suggest improvements to the indicant, three sub-themes emerged from the validators: Indicant purpose, structure and use. As to the purpose of the indicant one validator said:

- “The questions should depend on whom you’re aiming your response at”*
- “How would the answers be interpreted by a third party?”*

These are significant responses in that they indicate a concern that the results may be used against the expert. It also raises the issue of third-party assessment, which was in fact the role the validator took.

As to its structure:

- “You could go deeper into technical aspects – like the Expert Systems proposed in the 1980’s – but that didn’t work”*
- “The branching technique might bypass questions”*
- “A good thing is to encourage an expert to at least try to understand the positive aspects of the others side’s case”*

Again, these are significant in that they might indicate a misunderstanding over the indicant's purpose.

As to improving its use:

“Maybe introduce an overall question that says: ‘Is there enough information for an experienced expert to make a call on (a particular issue)?’”

“The only other groundwater question needed is: ‘Has the regional groundwater flow system been established?’”

These are significant in that these were the only suggested questions to be added to the Indicant.



Plate 11. Swan v Santos (QPEC 2017) gas pipeline rehabilitation litigation – weed incursion into watercourse (Photograph by author, 2017).

Quantitative statistics

Descriptive statistics

The descriptive statistics of the analysis of validators' overall scores, calculated using a purpose-built Excel spreadsheet, are presented in Table 34.

Table 34. Descriptive Statistics of Overall Indicant Score: Result average (as mean), Standard Deviation and skewness level (95% Confidence level) for SCO (overall score - all validators).

Matter	Party (condition)	Mean (Standard Deviation)	Skewness
Barns	Appellants	73.00 (137.62)	0.571
	Respondents	153.99 (200.96)	0.371
Gillion	Applicant	186.25 (53.13)	-1.794
	Respondents	259.16 (144.07)	-0.817
Woolcott	Appellant	40.00 (67.82)	-1.794

	1 st Respondent	259.16 (144.07)	0.042

The table shows the distributions of scores exhibiting appropriate skewness levels in all six conditions ($\text{Skew} = 2 \geq Z \geq -2$). This demonstrates that all distributions are moderately skewed.

Kendall's coefficient of concordance

Kendall's coefficient of concordance²⁵² (W) was calculated, using a purpose-built Excel spreadsheet, to measure the level of agreement (or concordance) amongst the validators as to their rankings. These were calculated using the results in each of the subject areas and for the overall score. This non-parametric test is a measure of agreement between assessors and ranges from 0 (no agreement) to 1 (perfect agreement). That is, the higher the value of Kendall's W, the stronger the association between scores. For the purposes of commentary on these results, the following interpretive ranges were used:

Level of agreement	Kendall's W
Strong	0.81 – 1.0
Good	0.61 – 0.80
Moderate	0.41 – 0.60
Fair	0.21 – 0.40
Weak	<0.2

Similarly, to test the null hypothesis (that there is no relationship between the variables), a probability or p-value <0.05 was taken to be statistically significant. Below this significance level, null hypotheses could be safely rejected and there was enough evidence to support the postulated alternatives. The results of this analysis are tabulated in the following tables.

Expert qualification

Table 35. Kendall's W analyses for expert qualification (SC1) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	x ²	df	P-value
Barns	Appellants	73.00 (2)	2	4	0	-0.33	0	1	1
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.75	0.67	3	1	0.0832
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.25	0	1	1	0.3173
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

²⁵² Kendall, M.G. (1948) Rank correlation methods. London: Griffin. Source formulae <https://www.real-statistics.com/reliability/interrater-reliability/kendalls-w/>

These results suggest that in Barns, all four validators were not in agreement under both conditions ($W = 0$, $p = 1$, $df = 1$) There was no significant statistical difference amongst the validators' scores ($p > 0.05$). For Gillion, the validators were in good agreement under both conditions ($W = 0.75$, $p = 0.0832$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$). For Woolcott, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$). Again, there was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Land tenure

Table 36. Kendall's W analyses for land tenure (SC2) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	P-value
Barns	Appellants	73.00 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.25	0	1	1	0.3173
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that, in all three validation matters, all four validators were in fair agreement under all six conditions ($w = 0.25$, $p > 0.05$, $df = 1$) The p-value in all three data sets ($p > 0.05$) demonstrates that there is no significant statistical difference amongst the scores.

Acid Sulfate Soils

Table 37. Kendall's W analyses for Acid Sulfate Soils (SC3) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	P-value
Barns	Appellants	73.00 (2)	2	4	0	-0.33	0	1	1
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0	-0.33	0	1	1
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0	-0.33	0	1	1
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that, in all three validation matters, all four validators were not in agreement under all six conditions ($w = 0$, $p > 0.05$, $df = 1$) The p-value in all three data sets ($p > 0.05$) demonstrates that there is no significant statistical difference amongst the scores.

Agriculture/land resource

Table 38. Kendall's W analyses for agriculture / land resource (SC4) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	p-value
Barns	Appellants	73.00 (2)	4	4	0.75	0.66	3	1	0.0832
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	4	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	4	4	0.50	0.33	2	1	0.1572
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns, all four validators were in good agreement under both conditions ($W = 0.75$, $p = 0.0832$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$). For Gillion, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$), with no significant statistical difference amongst the validators' scores ($p > 0.05$). For Woolcott, the validators were in moderate agreement under both conditions ($W = 0.50$, $p = 0.1572$, $df = 1$). Again, there was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Environmental management

Table 39. Kendall's W analyses for environmental management (SC5) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	p-value
Barns	Appellants	73.00 (2)	2	4	0	-0.33	0	1	1
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.25	0	1	1	0.3173
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns, the validators were not in agreement under both conditions ($W = 0$, $p = 1$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$). For Gillion and Woolcott, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Groundwater

Table 40. Kendall's W analyses for groundwater (SC6) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	x ²	df	p-value
Barns	Appellants	73.00 (2)	2	4	0	-0.33	0	1	1
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.5	0.33	2	1	0.1572
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.75	0.67	3	1	0.0832
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns, the validators were not in agreement ($W = 0$, $p = 1$, $df = 1$), in Gillion, they were in moderate agreement ($W = 0.50$, $p = 0.1572$, $df = 1$) and in Woolcott, they were in good agreement ($W = 0.75$, $p = 0.0832$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Land contamination

Table 41. Kendall's W analyses for land contamination (SC7) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	x ²	df	p-value
Barns	Appellants	73.00 (2)	2	4	0	-0.33	0	1	1
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0	-0.33	0	1	1
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0	-0.33	0	1	1
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that, in all three validation matters, all four validators were not in agreement under all six conditions ($w = 0$, $p > 0.05$, $df = 1$). The p-value in all three data sets ($p > 0.05$) demonstrates that there is no significant statistical difference amongst the scores.

Surface water quality

Table 42. Kendall's W analyses for surface water quality (SC8) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	x ²	df	p-value
Barns	Appellants	73.00 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							

Woolcott	Appellant	40.00 (2)	2	4	0.75	0.67	3	1	0.0832
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns and Gillion, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$) and in Woolcott, they were in good agreement ($W = 0.75$, $p = 0.0832$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Hydrography

Table 43. Kendall's W analyses for hydrography (SC9) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	P-value
Barns	Appellants	73.00 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.75	0.67	3	1	0.0832
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

As with Surface Water Quality, these results suggest that in Barns and Gillion, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$) and in Woolcott, they were in good agreement ($W = 0.75$, $p = 0.0832$, $df = 1$) as to the Hydrography. Again, there was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Water supply

Table 44. Kendall's W analyses for water supply (SC10) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	P-value
Barns	Appellants	73.00 (2)	2	4	0.75	0.67	3	1	0.0832
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.25	0	1	1	0.3173
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns, the validators were in good agreement under both conditions ($W = 0.75$, $p = 0.0832$, $df = 1$) and in Gillion and Woolcott, they were in fair agreement ($W = 0.25$, $p = 0.3173$, $df = 1$). Again, there was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Data quality

Table 45. Kendall's W analyses for data quality (SC11) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	p-value
Barns	Appellants	73.00 (2)	2	4	0	-0.33	0	1	1
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0.25	0	1	1	0.3173
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns, the validators were not in agreement under both conditions ($W = 0$, $p = 1$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$). For Gillion and Woolcott, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$). There was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Analysis evaluation

Table 46. Kendall's W analyses for analysis evaluation (SC12) - all validators.

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	p-value
Barns	Appellants	73.00 (2)	2	4	0.25	0	1	1	0.3173
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	0	-0.33	0	1	1
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	0	-0.33	0	1	1
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that in Barns, the validators were in fair agreement under both conditions ($W = 0.25$, $p = 0.3173$, $df = 1$). Conversely in Gillion and Woolcott, the validators were not in agreement under both conditions ($W = 0$, $p = 1$, $df = 1$). Again, there was no significant statistical difference amongst the validators' scores ($p > 0.05$).

Overall score

Table 47. Kendall's W analyses for SCO (overall score - all validators).

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	p-value
Barns	Appellants	73.00 (2)	2	4	1	1	4	1	0.0455
	Respondents	153.99 (1)							
Gillion	Applicant	186.25 (2)	2	4	1	1	4	1	0.0455
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	1	1	4	1	0.0455
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = coefficient of concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

These results suggest that, in all three validation matters, all four validators were in strong agreement under all six conditions ($w = 1$, $p < .05$, $df = 1$.) The p-value in all three data sets ($p < .05$) demonstrates that there is a significant statistical difference amongst the scores.

Based on this statistical analysis, the null hypotheses can be rejected. Therefore:

1. an Indicant, using critical indicators and attributes in the areas of expertise tested, could objectively compare the assumptions, information, data and assessments underpinning expert evidence;
2. such comparisons may be ranked; and
3. because the undergraduate student validator yielded the same outcome as the experts, the ranking may be used by others with lesser (or limited) expertise.

Summary

The selected methods were to:

1. identify the critical landform, agricultural and water resource science indicators and attributes relating to the assessment of landform, agricultural and water resources relating to expert evidence;
2. further identify critical indicators and attributes of data sufficiency;
3. employ those indicators and attributes to compare objectively the substance of the assumptions, information, data and assessments that ultimately underpins the preparation the evidence;
4. conceptualise and document a function or an indicant to describe the data adequacy supporting the evidence; and
5. test and validate the indicant.

This chapter presented the results of:

- the evaluation;
- the validation;
- a comparison between experts' outcomes; and
- a comparison between the experts and the undergraduate student.

From the results, it is apparent that in the context of a JER:

- an indicant, using critical indicators and attributes, can objectively compare the assumptions, information, data and assessments underpinning expert evidence;
- the comparisons may be ranked; and
- because the undergraduate student validator yielded the same outcome as the experts, the ranking can be used by others with limited expertise.

The next chapter discusses the results of the indicant testing and validation in respect of the research goals and the literature, in the broader context of assisting the courts to resolve land use conflicts. It discusses in detail the validators' responses, whether the indicant is 'fit for purpose' in its current form and what further development research is required.

Discussion

This chapter discusses the indicant's conceptualisation, its first iteration and its application. It examines its mechanics, limitations and the results from its use both in evaluation and validation by others. Following the validation, its ruggedness at the hands of experts and third-party assessors is assessed and discussed.

As a result of the statistical analyses, possible refinements to the indicant are advanced. To assist the courts, parties and communities engaged in land-use conflicts, an examination is then made of how the indicant might be readily accessed and maintained on an ongoing basis.



Plate 12. Steel fabrication workshop in Widgee, Queensland, the subject of a dispute with downstream neighbours and the local authority, Gympie Regional Council. The dispute centred on contamination of lands downstream of the facility. The issue was resolved, in part, by testing upstream of the workshop in a catchment that had been formerly mined. (Photograph by author, 2020).

Indicant conceptualisation and application

The litigation of land-use conflicts is often informed by multiple areas of expertise. Within these areas, the measurement of data sufficiency is often difficult, but by no means impossible. By identifying critical constraint indicators and attributes as essential yardsticks, measurements are either made possible or at least, a constraint in question may be viewed in a more logical and understandable context.

In expert land-capability evidence, often it is not the degree, density, depth, length, level, mass or volume that is important *per se* but the measurement itself. This is because if something is measured at a point in time, any rate of change, temporally and/or spatially, can be estimated after later testing.

Once a base condition is known, a view can be formed on whether a constraint may be sustainably managed or not. Similarly, if an expert makes a measurement of one landform, agricultural or water resource feature, it is not unreasonable for the court to expect at least a rudimentary appreciation of other interacting features.

For example, for the purpose of litigation, if an expert were to assess a groundwater recharge area within a catchment, information such as the local crops, dams, geology, irrigation practice, soils and vegetation may be pertinent if it related to the issues in dispute and the expert was asked for a view on the recharge. The site could not (and should not) have been visited wearing (the equivalent of) professional blinkers. All relevant matters need to be considered.

Remembering that land capability is what an area (or better, a volume) of land is capable²⁵³ in respect of its quality, tenure and water supply, the task of condensing critical indicators and attributes into an indicant combines multiple, interacting tenets. Conceptually, by applying scores to these critical criteria within an indicant, two or more assessments can then be comparatively ranked in terms of the collection or assessment of these indicators.

Through survey, an indicant's combining of land quality tenets allows for a structured frameworks (aligning with Bennett's method, cited in Chapter 2) to better ensure soil security. In turn, that would improve climate resilience. Increased resilience squarely meets Mulvey and Mulvey's intent as to improved agricultural practice and increased carbon storage and sequestration.

Through a lens of agricultural and ecological sustainability, by appraising the assessment of water supply, an indicant would combine the calculation of minimum values of streamflow discharge and maximum groundwater yield and drawdown (after Withers and Vipond). Similarly, it would promulgate a standardised approach to both groundwater modelling (after Barnett) and groundwater mining (after Kalf).

In respect of land tenure, by linking minimum standards for surveying land resources with a proposed land use, an indicant would recognise McKenzie et al's approach to mapping accuracy and thus data sufficiency. Similarly, that would encompass data quality and mapping accuracy (after Hunter and Foody) and could recognise the vulnerability of mass survey techniques to uncertainty and consequential error (after Droop and Matthew).

²⁵³ Araújo Costa, R. C., et al. (2019). "Land capability of multiple-landform watersheds with environmental land use conflicts." *Land Use Policy* 81: 689-704. (Cited in Chapter 2).

Kennedy's analysis as to the 'privileging' of scientific expert evidence limiting participant (either applicant or respondent) opportunities, would be assisted by an indicant, if it were made accessible to the layperson to make their own assessment of the expert evidence (or at the very least, enunciate what was not understood and needed different or further explanation). This would allow third-party assessors to test assessments. It would also allow for Edwards' suggested expert and stakeholder power imbalance to be redressed, at least in part, by equipping them with a decision-influencing ability (promulgated by Kennedy).

For critical indicators, it would arm stakeholders with the 'right' questions (depending on your frame of reference) in the matter before the court. It turn this would both increase participant opportunities and improve the epistemic value of the evidence by (at least partially) validating the underpinning data (often with greater local knowledge), and better coupling scientific and ethical values (after Valles).

So, it is in this context of complex competing needs and interests that an indicant would be applied. If one accepts, based on Bloom's Taxonomy,²⁵⁴ that instruction to an expert may be given at six hierarchical levels of thinking: knowledge, comprehension, application, analysis, synthesis and evaluation. Then it is at the higher-order levels that courts effectively 'contract-out' to experts in defined areas. That is, they apply when analysis, synthesis and evaluation are required.

The courts must do this because they cannot know everything. The same as lay witnesses, judges may have knowledge of a subject, comprehend its importance, where it is applied and may be able to analyse aspects of quantity, quality or efficacy. Judges are likely to be accomplished in evaluation, but it is in the synthesis of a view that the court must rely on an expert. Indeed, If the court did have the knowledge and was able to synthesise a view, there would be no need for experts at all.

A concept of courts 'contracting-out' specific tasks to experts is useful and is not in the literature. Not only does it imply a transaction between the expert and the court, but it also acknowledges a contractual obligation on the part of the expert – a duty. This is an obligation of the expert to the court irrespective of who is footing the bill. Indeed, court rules are very specific on this point. For example, the New South Wales Land and Environment Court's Code of Conduct states:²⁵⁵

²⁵⁴ Bloom, B. S.; Engelhart, M. D.; Furst, E. J.; Hill, W. H.; Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals*. Vol. Handbook I: Cognitive domain. New York: David McKay Company.

²⁵⁵ NSW Land and Environment Court (2022) <https://www.lec.nsw.gov.au/lec/coming-to-court/experts--expert-evidence-and-general-witnesses/expert-witness-code-of-conduct-and-duties.html>

“An expert witness has an overriding duty to assist the Court impartially on matters relevant to the expert witness’s area of expertise (UCPR Sch 7 cl 2(1)²⁵⁶). An expert witness’ paramount duty is to the Court and not to any party in the proceedings (including the person retaining the expert witness (UCPR Sch 7 cl 2(2)). An expert witness is not an advocate for a party (UCPR Sch 7 cl 2(3)).”

Similarly, in Queensland, Section 426 of the Uniform Civil Procedure Rules (1999) states:

*“(1) A witness giving evidence in a proceeding as an expert has a duty to assist the court.
(2) The duty overrides any obligation the witness may have to any party to the proceeding or to any person who is liable for the expert’s fee or expenses.”*

If one further accepts that a court is representing the broader community, the public good (after Rackemann) and (as is postulated here, the receiving environment), how does an expert’s contractual obligation to the court align with Perillo’s measurement of adversarial allegiance? In short, it does not – it conflicts with it.

The rules are clear: The overriding duty is to the court alone. Aside from adversarial allegiance, does the failure to collect adequate data in the absence of appropriate qualification represent a failure of an expert’s duty? Most certainly yes. In itself, this is a form of adversarial allegiance as it will be a monetary saving to at least one party.

Given that data collection is expensive by any measure, the sums of money involved are considerable. Therefore, a data absence or insufficiency, or a monetary saving that the assessor is unaware of or does not or cannot appreciate, each constitute a corruption of the process. In effect, in the event of a favourable decision based on that inadequate data, they are corrupt acts.

The corollary of this is that if an expert fails in his or her duty to a court, then he or she has collected a liability. For that expert, such a liability may prove long-lasting and very difficult to discharge if the data shortfalls are exposed in the future.

When a scientific expert is prepared to opine on inadequate data, it is a form of adversarial allegiance that breaches his or her duty to the court. For that witness, such evidence necessarily must forfeit the moniker ‘expert.’ Instead, it becomes, in effect, lay evidence but of lesser value, as the expert scientist should know better.

²⁵⁶ Uniform Civil Procedure Rules 2005 - NSW Legislation <https://legislation.nsw.gov.au/view/html/inforce/current/sl-2005-0418#sch.7-sec.5>

How then does a court currently safeguard against scientific expert evidence that is based on insufficient data? In the adversarial process where “*Court is the last Colosseum*”²⁵⁷ there are three principal lines of defence:

- The opposing expert should be able to identify to the court where the data is insufficient, imprecise or incorrect.
- During cross-examination, opposing counsel should be able to deconstruct that evidence and expose the arguments that have insufficient foundation to the extent that they are nullified.
- The judge may also engage in direct cross-examination of the witness, to form his or her own view, or weigh expert evidence differently to the parties.²⁵⁸

Theoretically, this should lead to either a partial or total rejection of opinions based on flawed data. However, accepting Selby’s view as to the repelling nature of litigation to numerical ratings, it is understandably difficult for a judge to determine the true position if:

- an opponent fails to challenge the facts or flawed data on which an opinion is based;
- the factual basis for the opinion has not been established;
- there are two or more sets of competing data;
- there is competing evidence about the factual basis for the opinion evidence;
- there is a single court-appointed expert with no equal counterpart to challenge the data; and
- during concurrent evidence, flawed data is more readily hidden from cross-examination.

Anything that lessens Counsel’s ability to deconstruct a witness’s evidence, such as the use of concurrent evidence or ‘hot-tubbing’ (where opposing experts are in the witness box at the same time), can be problematic. It results in the potential for experts to effectively ‘hide in plain sight’ whilst discussions are underway. Similarly, when a single expert is court-appointed, parties and stakeholders forego the benefits of the adversarial peer-review where expert counterparts test the basis of each other’s opinions on behalf of the court.

In that context and accepting these difficulties at face value, an indicant could usefully bring forward the determination of data sufficiency as a pre-litigation test completed by the experts for the court. It

²⁵⁷ From Chapter 2: Gallagher, J (2016). John Gallagher QC Pers. Comm.: “*Court is the last Colosseum*”.

²⁵⁸ For example, in *Leda Manorstead P/L v Chief Commissioner of State Revenue (NSW)*, Supreme Court of New South Wales, 16 August 2010, His Honour elected to weigh a question of agricultural land-use by grazing cattle against earthworks expenditures in a contested taxation case, forming the view the Plaintiff had failed the dominant use test prescribed by the Land Tax Management Act (1956). This was despite agreement in the JER that, from a land use perspective, cattle grazing predominated over the areas, the subject of earthworks.

would go to meeting Faigman's concept of helpfulness by ranking the evidence and forcing experts to confront (and possibly go back to resolve) data insufficiencies. It would also align with Andretta's research which advocates a structured statistical judgement code for single, court-appointed experts. Similarly, Edmond's difficulties in contrasting evidentiary performance with the epistemic substance go to the same issue (quoted in Chapter 2 and repeated here):

*"Quality is an ambiguous concept. It could refer to the performative quality of the evidence – whether the witness is clear, confident, answers questions without evasion and so on – or to its epistemic quality: whether it accurately communicates good reasons for and against believing a (disputed) proposition. Performative quality is like the quality of a sharp knife – it enhances the effectiveness of the evidence for good or ill."*²⁵⁹

This is where the admissibility of expert evidence, judged "on the reliability and validity of empirical observations" seeks to bolster the existing defences against poor quality evidence. Here then, is the need for a function or an indicant to help the courts determine the truth in respect of data sufficiency. The court does not know what is missing because if it did, it would not need the expert.

In real-world application then, and building on the modern Joint Expert Report (JER) process where peers review each other's work under combative but efficient and (generally) efficacious adversarial conditions, an indicant could:

- identify critical indicators and attributes relating to the assessment of landform, agricultural and water resources;
- further identify critical indicators and attributes of data sufficiency, so that evidence would achieve maximum standards of objectivity, sufficiency, completeness and analysis; and
- with two or more witnesses, allow their evidence to be ranked.

In its recent demands for Preliminary JERs where two or more experts are instructed to agree on the data requirements for their JER proper, the Queensland Planning and Environment Court has sought to take a more structured, process-based approach to evidence. To that end, the use of the indicant at this stage of the JER process could assist in narrowing the issues between the experts. It would not address the failure to provide information required by the indicant but, by comparing the scores in each part of the indicant response, any remaining areas (or, importantly, points) of disagreement would be immediately apparent. Thus, by using the indicant before a statement of evidence is settled, an expert has the choice of either rectifying or justifying any data deficiencies. In each area of expertise, such an

²⁵⁹ Edmond, G., Ferguson, A., & Ward, T. (2018). Assessing concurrent expert evidence. *Civil Justice Quarterly*, 37(3), 344-366. <http://nrl.northumbria.ac.uk/32674/>

indicant would have to be developed and refined by experts as the court does not possess the requisite knowledge.

Philosophically then, the courts (and the communities they serve) want and need an expert witness to tell “*the truth, the whole truth and nothing but the truth, so help me God*”²⁶⁰ as the oath used in many jurisdictions prescribes. For the scientific expert, telling the whole truth reflects Valles’ coupling of science and ethical values at Golan’s institutional intersection of science and law.

Despite its absence from the secular option of affirmation, the oath’s invocation of the Almighty links this court process directly to the 1552 Book of Common Prayer’s translation of the Lord’s Prayer. The same book’s supplication, the General Confession, candidly seeks forgiveness for “*what we have left undone*.” It is this concept that encapsulates the essential characteristic of data sufficiency in the formulation opinion-based scientific expert evidence and its evaluation.

It is the absent information – ‘what is left undone’ – that may prove determinative in the weighing of expert evidence. In using a comparative indicant, experts and third-party assessors alike can compare evidentiary bases and data sufficiency, narrowing the issues in dispute and saving court time. It improves clarity, reduces opacity and, to an extent, levels Kennedy’s playing field as to the “privileging” of scientific expert evidence.

Having conceptualised an indicant, the next section discusses the development of a land-capability indicant and its critical indicators and attributes for use in the preparation of expert scientific evidence.

Indicant development

Accepting that an indicant might provide a suitable vehicle to score assessments against selected critical indicators and attributes, a method was derived as outlined in Chapter 3. As described there, this involved the construction of a survey, using the Qualtrics XM software interface, whereby the minimum number of landform, agricultural and water resource criteria could be applied to these areas of expertise:

- acid sulfate soils
- agriculture/land resource
- environmental management
- groundwater
- hydrography

²⁶⁰ A survival of the subjunctive that can also be seen in “Heaven help us” or “Heaven forfend” according to Leeming, M (2021) “So Help Me God: a history of oaths of office”. PM Glynn Institute Occasional Paper No 3 Australian Catholic University, Sydney, Australia.

- land contamination
- surface water quality
- water supply

Whilst evidence in each of these areas is regularly called during the litigation of land-use conflicts, several of the critical criteria are common to multiple areas. For example, depth to regolith is common to acid sulfate soils, agriculture/land resource, groundwater and land contamination.

Similarly, statistically-based rainfall analyses are common to the areas of agriculture/land resource, groundwater, surface water quality and water supply. This is the way those criteria were treated within the indicant. This approach allowed for the application of ‘branched logic’ within the survey to both tailor and reduce the survey questions, depending on what area of expertise was selected.

Thus, questions did not need to be repeated as the answers had already been given. As all validators would be free to choose their own areas of expertise, irrespective of their professions, qualifications and instructions, this would go on to affect comparative scores and, at the same time, became both a limitation and a benefit to the validation process.

Whilst this was a calculated risk during the indicant development, it must be remembered that this unfettered approach reflected two factors: Firstly, the wholesale interaction, at all levels, of landform, agriculture and water resource scientific evidence, and secondly, it is the professional who claims their area(s) of expertise that are tested in court.

Experts are regularly admonished by judges and barristers alike if they stray into areas outside of their areas of expertise. They should, as they are often reminded, ‘stay in their lane’ and refrain from commentary outside of the area(s) in which they were nominated for that litigation alone. However, when an expert is skilled in several areas of expertise – often because the critical criteria are common to multiple areas – it is not uncommon for a court to avail itself of that expert resource, primarily because the expert is there. This occurs even though much narrower instructions as to the subject areas had been initially given to the expert. That is a court’s prerogative. The court may ask anything it wants of anyone. That same prerogative is not extended to the expert, who needs to exercise an abundance of caution in this regard and only address the issues in the instructions.

During the indicant development process then, and despite instructions as to which areas of expertise they were to address, all validators used the elective fields within the survey to select the areas in which they felt able to give evidence. For Validators A and C, both with broad qualifications and professional experience, this expanded their areas beyond their remit in the instructions. Validator B followed the

instructions. For Validator D, a principal geologist and hydrogeologist, it impacted the analysis of Barns and Woolcott in areas where he felt unqualified to comment. Like Validator B in Gillion, a groundwater matter, he was able to answer all questions set. Validator E, the Agricultural Science Student with no experience as an expert and limited exposure to the court process, answered in 32 out of 36 subject areas. The first iteration of the indicant, used for the development testing and during the validation, can be accessed and trialled at: https://anu.au1.qualtrics.com/jfe/form/SV_6SETq3oNuCGASDc

Indicant results

This section discusses the indicant results as to the:

1. development and evaluation using the five land-use conflict matters litigated or heard between 1999 and 2020;
2. validation, using three additional matters between 2011 and 2017;
3. comparison between experts' outcomes; and
4. comparison between the experts and the undergraduate student.

Indicant evaluation

Chapter 3 introduced the historical matters used to develop and evaluate the indicant. It detailed the judicial (or, in the QCLNG matter, the adjudicated) outcome of each matter - i.e. which party won or lost and an overview of the circumstance of each case.

For each of those matters in turn, the scores yielded during the development and evaluation testing were reported and described in Chapter 4. The following sections discuss the indicant's scores in each of the evaluation matters. Each of these matters provide real-world examples of what the using the indicant would mean to the joint expert process. Not only could the indicant be used to specify what information is absent but could assist in evaluating differing approaches, by highlighting differing expert methods.

Bickham

Bickham was the first time a coal mine had been rejected in (documented) NSW history. In this case the indicant score indicated that both parties collected data with the submitter collecting more and with more extensive analysis (showing a difference of 220). These results reflect the Commissioners' findings and their focus on data sufficiency and treatment. Their emphasis on groundwater impacts and the averaging of flows in the Pages River (against a local backdrop of vulnerable over-allocated water resources) formed the basis of the PAC's recommendations.

That, in turn, formed the basis of the Government's decision to reject the mine. This outcome aligns with two of the indicant's critical criteria, (adapted from Withers and Vipond) that captures two metrics often overlooked in land capability assessments: Firstly, the calculation of minimum values for river (or streamflow) discharge, and secondly, the maximum groundwater yield and drawdown. The PAC found that by averaging results, the mine's potential impacts risked being masked.

Would the availability of the indicant have made a difference to the outcome of Bickham? Possibly, in that there may have been cost savings in both hearing preparation and in the hearing times. These costs were substantial, with the proponent claiming to have spent greater than \$10 million on the mine planning and approval process.

In the final analysis, however, despite being given repeated opportunities to alter its modelling and mine plan, the proponent elected not to confront these issues. Thus, even though the indicant may have alerted the proponent to the data treatment and sufficiency issues earlier, there may have been other (undisclosed) drivers and/or variables influencing its approach.



Plate 13. Borrow area at Cobaki Lakes, a development site the subject of litigation in *Secretary, Department of Planning and Environment v Leda Manorstead Pty Ltd (No 2)* [2018] NSWLEC 195 in which the data sufficiency relating to erosion and sediment was contested. An expert witness retained by the prosecution collected no data and was obliged to rely on data collected on behalf of the defence (Photograph by author, 2017).

QCLNG

In QCLNG, the \$730 million, 528 km-long liquified natural gas pipeline dispute, the indicant results showed that both parties collected data with the Applicant having a greater amount of data (a difference of 141). Remembering that the dispute centred around environmental approvals, rain delays, flooding and unanticipated soil conditions, evidence was adduced on several expert areas.

One component of the soil conditions claim was that the interception of sodic soils could not have been anticipated in the context of available mapping (the subject of the indicant testing). When soil mapping using existing and publicly available data was completed after the pipeline construction, the degree of sodic soils along the route became apparent.

The publicly reported awarded amount to the construction firm (McConnell Dowell Constructors) was \$50.5 million, reflecting the high cost of this dispute. The indicant's scores reflected the outcome, in that an issue in dispute could have been narrowed or settled prior to trial had the data insufficiency been determined before the adjudication. Of course, it might not have been an issue at all, had the mapping been completed before the selection of the pipeline route was made. However, whilst this usefully proves a point to the value of land capability mapping, it not relevant to the indicant. As in Bickham, the indicant scores reflected the matter outcome.

Hume

For Hume, the insurance claim concerning a catastrophic tetraplegia injury caused in the Tweed River in NSW, the Plaintiff had a higher overall indicant score (a difference of 141) with the Defendant score being negative. On face value, this matter represented a 'poor-fit' for a land capability indicant because expert hydrography was adduced to assist with confined questions concerning the water depth relative to a sandbar and the geomorphology of the river.

Here, the low scores were a function of the land resource relating to geomorphology, not agriculture, so even though some geomorphic assessment was required, many of the indicant questions were simply not required to be collected. Overall (and relative to the indicant scores) whilst there was a paucity of data on both sides, the Defendant was crucially unable to adduce evidence to counter the evidence from the Plaintiff concerning water flows, on and near the shoal. This was despite the case being adjourned for that evidence to be collected.

Other than reducing court time, it is unlikely that the use of the indicant in this matter would have made a difference to the outcome. However, the results confirm the fact that firstly, the Defendant's expert had less data and poorer quality data than the Plaintiff and secondly, that the indicant outcome is valid, even when used in a 'poor-fit' matter such as this one. As such, the indicant's benefit here is to highlight the differences between experts and their respective approaches.

Thompson

Thompson was the compensation matter over the rezoning of a 37-hectare site at Noosa, Queensland where the issues examined in the expert brief were confined to acid sulfate soils and groundwater. The

land had been approved for development in 1988 but was subject to the provisions of a new strategic plan in 1997 which, it was claimed, injuriously affected the Appellant in the amount of \$52.9 million.

The Respondent mapped the extent of the acid sulfate soils and groundwater conditions whereas the Appellants' own mapping was limited. Using the indicant, the score indicates that both parties collected data with the Respondent collecting more and with more extensive analysis (a difference of 120).

In this matter, the JER was largely in agreement that acid sulfate soils could be treated and managed to mitigate the development impacts. What the indicant would have exposed earlier is that the Appellant was unable to cost the treatment and management as it had not collected the data. The use of the indicant may have brought forward an appreciation of this.

Swan

This was the other LNG pipeline matter where infrastructure crossed farmland near Moura in Queensland. Remembering that there was a series of contentious points between the experts relating to subsidence, weed management, grassland renovation and soil mapping, the key area of agreement was that the rehabilitated soil profile could never be a facsimile of its pre-development condition.

The indicant score in this matter indicated that both parties collected data with the Respondent having a higher indicant score, although the difference of 44 was smaller than the other case studies. As demonstrated by the JER, this score correctly infers that the experts were close in their assessments during the case.

Whilst there were disagreements over the rehabilitation techniques and their degree of success, there was substantial agreement over the data and their sufficiency to form a view. Because the comparator is the difference between the dataset, as analysed for each party in each individual case, each case study is separate.

Thus, the indicant scores cannot be directly compared between the matters in terms of the datasets and their analysis. However, the degree of difference in the scores does reflect the disagreements in the disputes. The score suggested there was not such a large disparity between the Plaintiff and Respondents for the Swan case than there was in both the Bickham and QCLNG cases. Again, this was true within the matters and is borne out by the reports and judgments.

Overall evaluation scores and judgments

Remembering that each of the matters was selected on the criteria that information and data were available, the matters had been litigated and that judgment had been made, the data availability would be definitive in matter selection. In effect, it meant that all five matters evaluated had at least one land-capability component where expert evidence was required, in at least one of the areas of expertise (detailed in the preceding section, herein).

In each of the matters, evidence was adduced in (or examination made of) areas of expertise other than land-capability evidence. Examination of the judgments showed it was the land-capability evidence that was determinative in the Bickham, Hume and Swan matters.

In QCLNG and Thompson, it contributed to the outcome. Examination of the evaluation overall scores, the difference between the parties' scores, the ranking of the parties' evidence compared with the judgment (and the QCLNG adjudication) outcome are shown in Table 48.

Table 48. Overall Evaluation Score (SC0) by matter, Score difference, Indicator rank and Judgment result.

Matter	Retaining Party	Score (range) -950 to 850	Score difference	Indicant rank	Judgment in favour
Bickham	Applicant	296	220	2	×
	Submitter	516		1	✓
QCLNG	Applicant	191	141	1	✓ ²⁶¹
	Respondent	50		2	×
Hume	Plaintiff	87	147	1	✓
	Defendant	-60		2	×
Thompson	Appellant	150	120	2	×
	Respondent	270		1	✓
Swan	Applicant	163	44	2	×
	1st Respondent	207		1	✓

This demonstrates that the indicant rank, a product of the survey across five different matters, matched the outcome of the matter. Whether the outcome influenced the indicant score, particularly in signposting the reasons for the outcome, is a valid question. In reality, this can only be resolved by using the indicant in practice, before a decision is handed down. Here, it is important to note that adjudicators will variously set aside evidence and ignore, disagree with or sanction experts whom they feel have not been helpful. For example, in the matter of *Clermont Quarries Pty Ltd v Isaac Regional Council & ECL Dalby Pty Ltd & Another* [2020] QPEC 18 [2021] QPELR 65 (423 of 2019), the judge made adverse findings about the credibility of experts.

²⁶¹ In this matter, the Judgment in favour in this matter amounted to a reduction in the amount paid by the Applicant to the Respondent because of the adjudication.

In this exercise, (and acknowledging the limitations above) in each matter, the judgment reflected the evidence as evaluated by the adjudicator or judge. In turn, the evidence was a product of the data. Thus, because the indicant was a product of the data underpinning the evidence and not of the opinions expressed by the relevant experts, the comparison of the indicant rank with the judgment in favour, expressed in this table, appears to be valid.

Indicant validation

As stated in the preceding Chapters 3 and 4, a validation of the indicant was completed using four recognised court experts and an undergraduate student. This was to assess:

- whether it could be used by others;
- whom those others might need to be; and
- how rugged the indicant is.

The only ground-truthing of the evaluations was in the use of existing information in each of the selected matters. This was a practical limitation in that the process did not involve testing the data underpinning the expert opinions but involved an evaluation, by the validators, of the data presented by opposing parties.

The following sections discuss the indicant's scores in each of the evaluation matters.

Barns

This was a compensation matter over the rezoning of a 155 hectare site at Weyba Downs, Queensland where it was judged that an informed purchaser would have been influenced by different land-capability mapping. The soil mapping, analysis and interpretation and the data was determinative.

The wide range within the individual area of expertise results predominantly reflected the differences in validator selections as to the areas in which they were instructed (noting that all validators were free to choose their own areas of expertise, irrespective of their professions, qualifications and instructions).

There were crossovers between the areas of expertise (for example between agriculture, acid sulfate soils and groundwater) which meant that issues were being viewed differently by the validators. This affected the comparative scores and, at the same time, became both a limitation and a benefit to the validation process. It limited the value of the comparative scores between validators but yielded a benefit in that the underlying result was still evident. The validators' rankings matched inasmuch as each one scored the Respondent higher than the Appellant.

In a live matter, of course, the comparative scores would highlight the differences between the experts and would represent a benefit. They would present opposing experts the opportunity to revisit their views, question why the scores differ and present both counsel and adjudicator alike with a basis for questioning the experts.

Gillion

As presented in the brief to the validators, this was the narrow matter relating to the commercial abstraction of groundwater from unregulated aquifers on Tamborine Mountain in Queensland. Whilst the appeal was rejected on town planning grounds, the judge accepted that groundwater could be abstracted sustainably, without resorting to ‘groundwater mining’ – a condition where groundwater abstraction exceeds the recharge rate.

As to data sufficiency, the judge observed that it appeared no amount of data would have satisfied the Respondents-by-Election’s expert. As with Barns, whilst there was variation in the individual area of expertise, the indicant performed as designed and developed. Again, the validators’ rankings matched in that each one scored the Appellant higher than the Respondents-by-Election.

Woolcott

This was the matter involving the construction of the five broiler farms on a 1900-hectare site in Manila, NSW. The land-use conflict arose because of concerns relating to ‘feather-drop’ from the chickens, water quality impacts on the Namoi River and traffic impacts. A total of twenty-two expert reports were submitted to the court, involving the completion of additional data collection, analysis, evaluation and documentation within the JER process.

Like Barns and Gillion, there was variability between the validators in the matters they elected to cover (and in the scores generated) having used the indicant. For example, Validator C elected to cover acid sulfate soils even though that was not an issue in dispute. Similarly, Validator E elected to cover only groundwater as well as the compulsory questions.

Again, like Barns and Gillion, the overall ranking (which gave the First Respondent’s evidence a higher score than the Appellant’s) was common to all validators.

Experts and undergraduate student comparisons

In each of the validation matters, whilst there was variability in the scores between the experts, the experts scores were ranked the same in each matter. Similarly, the undergraduate student matched the expert rankings in all three validation matters, even though it was only Validator D who was asked to

step outside of his normal area of expertise of geology and hydrogeology. Validator D's election only to use the indicant in areas he felt qualified to do so, yet still generating the same ranking, is significant.

The common ranking results across all three validation matters between the experts from different disciplines suggests the indicant in its first iteration is suitably rugged. That is, the different disciplines were able to recognise the benefits of, and differences in, data compliance and sufficiency. That Validator E, the undergraduate student, generated the same rankings as the experts despite having no expertise and limited experience also suggests the indicant is suitably rugged. It appears that it can be usefully used by experts and laypeople alike.

Overall validation scores and judgments

The following table displays an examination of the validation overall scores, the difference between the parties' scores and the ranking of the parties' evidence compared with the judgment outcome.

Table 49. Overall Validation Score (SC0) (Possible score range: -950 to 850) for each validator by matter, Score difference, Indicant rank and Judgment result.

Matter	Retaining party	Validator code												Judgment in favour
		A		B		C		D		E		R		
Barns	Appellants	-27	2	-	-	-	-	-50	2	243	2	125	2	×
	Respondents	5	1	-	-	-	-	-30	1	390	1	251	1	✓
Gillion	Applicant	-	-	120	1	-	-	190	1	185	1	250	1	✓
	Respondents	-	-	50	2	-	-	180	2	-80	2	190	2	×
Woolcott	Appellant	-	-	-	-	90	2	60	2	70	2	-60	2	×
	1 st Respondent	-	-	-	-	140	1	130	1	400	1	367	1	✓

Whilst the scores varied between validators, it is of note that their rankings between each party were the same. As with the evaluation, in each validation matter the indicant ranking reflected the eventual judgment and thus, at least in part, reflected the expert evidence. Again, in each of the validation matters, the evidence in the evaluation matters was a product of the data. Thus, because the indicant was a product of the data underpinning the evidence and not of the opinions expressed by each relevant expert alone, the comparison of the indicant rank with the judgment in favour, expressed in this table, appears valid.

In all cases the indicant ranking matched the outcome of the matter. Remembering too that the scores indicated that for all cases there were shortfalls in the datasets for all parties, the difference in the scores suggested a difference in the data collected and the analysis of that data. Despite this, the indicant still matched the outcome of the matter.

The next section discusses both the qualitative and quantitative statistical analyses completed to test the hypotheses and to identify patterns and trends in the results generated by the indicant.

Qualitative statistics

As previously stated, all communications with the validators were logged during the validation and, together with a User Engagement Survey (UES) made during in post-validation interviews, formed the qualitative assessments of the results.

Validator communications

The only communications with the validators were those stated in Chapter 4 and were limited to the provision of instructing letters and electronic briefs, email and telephone discussions regarding specific questions from two of the validators regarding the mechanics of the process. As such, the degree of difficulty in using the indicant became apparent. Similarly, the feedback gained through the UES conducted following the post-validation interviews was recorded and is discussed in this section.

Based on the variability in the indicant results between the validators and the discussions during the interviews, there appears to have been no collusion between them. The two validators who were aware of each other's participation exhibited the largest difference in results in three out of the six conditions in their overall scores. As such, the indicant scores appear to represent an accurate record of the responses to the questions posed, reflecting the validators' assessment of the data in each matter.

As detailed in Chapter 4, only two validators raised queries during the exercise. These related to issues with the brief, not to the use of the indicant. The issue reported by Validator A (raising an issue of information absent from the brief but quoted in the judgment) would not arise during a live matter as the judgement would not be available. Similarly, any queries regarding information and data sufficiency would be made either of the parties themselves or to the expert's counterpart.

The simultaneous use of the indicant during a JER process would be beneficial as there might be a prospect that disputed issues could be narrowed. This represents one of the more important uses of the indicant – where experts better enunciate the basis of disagreements.

As a rule of thumb, any communication between the experts during the JER process should be beneficial. The more the points of disagreement are examined together, the more likely the resolution. Here, the language adopted by the JER's initial author needs to be as neutral as possible, allowing the counterpart latitude to agree. For instance, data insufficiencies may be readily acknowledged but done so in a way that explains the reason(s) for them and consequences of them.

When there are irreconcilable differences between the experts and communications simply break down, there is no choice but to explain this within the JER. When experts act as advocates, effectively displaying the adversarial allegiance measured by Perillo, their counterparts are given little room to move.

Again, this goes to Faigman's concept of 'helpfulness'. It does not help the court if the reasoning why missing or incomplete data may be important is not examined and explained. This robs the court of necessary context in making its decision.

The issue reported by Validator E (the student), who had not appreciated the difference between the Respondent in Gillion (the local authority) and the Respondent-by-Election (the submitters), is more representative of a problem for submitters and lay witnesses, rather than experts.

In that matter, it was the submitters (the Tamborine Mountain Progress Association (TMPA), a Respondent-by-Election) who had adduced the groundwater evidence as opposed to the Respondent, the Scenic Rim Regional Council (SCRC). This confusion exposed a weakness in the indicant that might, if not corrected, hamper its use by lay people and stakeholders alike.

Whilst the expert has a primary duty to the court, users need to know who is employed by whom because of the risk of adversarial allegiance. Based on the premise that is desirable for the indicant to be available to all stakeholders, irrespective of their experience, it was elected to broaden the gatekeeper dialogue as to the user type. It is anticipated these would comprise:

- Judges, adjudicators, third-party assessors or lay people using the indicant to assess evidence for data sufficiency;
- the same users of the indicant to rank any number²⁶² of competing assessments in any one matter;
- experts checking their own assessments; and
- experts checking their counterparts' assessments.

As a result of this, it was decided to change the branch logic in a second iteration of the indicant to better separate the users at the gatekeeper stage. This then allowed the language used in the questions to be specifically tailored to the indicant user type. Remembering that the indicant evaluates data sufficiency against critical criteria and attributes, allowing assessments and/or evidence to be ranked, the language was changed as follows:

²⁶² Whilst no limit has been placed on this in the branch logic, realistically this is unlikely to exceed five competing assessments during any one litigation.

Table 50. 1st Indicant iteration (Q53) refinement to allow for improved clarity of use and 2nd iteration improvement.

1 st Iteration	2 nd Iteration
Retained by (Party):	How will you be using this Indicant?
<i>(Text entry recorded in dialogue box)</i>	<i>(Multiple choice question)</i>
	(a) as a judge or adjudicator - ranking competing evidence
	(b) as an expert - assessing your own evidence
	(c) as an expert - assessing someone else's evidence
	(d) as a submitted or stakeholder - assessing someone else's evidence

This change allowed for the use of branch logic to direct respondents to a tailored survey flow based on their intended use of the indicant. Whilst all critical criteria remained the same, the three choices allow for each of the subsequent questions to:

1. refer to you in the first person if selection (a) is made,
2. name another person if (b) is selected; and
3. name any number of competing assessments if (c) is selected.

This improvement to the second iteration allowed for the indicant's purpose to be better stated and for it to be specifically customised for that use.

User Engagement Survey

The UES results were presented in Chapter 4. For reference, the validators' responses to first two questions are repeated here (with the participant results **bracketed**):

- ii. *How would you rate using the indicant? Was it:*
 - a. *Extremely difficult*
 - b. *Somewhat difficult (1)*
 - c. *Neither easy nor difficult (2)*
 - d. *Somewhat easy (1)*
 - e. *Extremely easy (1)*

These results were unsurprising in that they aligned with the indicant survey duration times reported in Chapter 4. Again, whilst the expert validators completed the exercise in 4 to 17 minutes, depending on the matter, the undergraduate student took longer than the experts (between 12 and 44 minutes) and deemed the indicant "somewhat difficult" to use.

In themselves, what the times reveal is that the use of the indicant by experts would not be a significant impost within the overall cost of the litigation itself. Similarly, even though the student found the task difficult, he took less than one hour to complete it. This shows that an informed user with limited expertise and no court experience can use the indicant. As such (and outside of the narrow fields of experts) this implies the indicant is rugged enough to be useful to others.

As to costs, examining data sufficiencies within the courtroom is highly expensive²⁶³ simply because of the people obliged by the process to be present during the case: court staff, counsel and experts (those waiting to give, giving and listening to the evidence). By acknowledging and examining these issues earlier in the process and before they reach the courtroom, costs will be reduced, and time saved. This is likely to be the most significant contribution of the indicant's use.

- iii. *Were you able to accomplish your goals of data assessment and evidence ranking?*
 - a. *Yes (5)*
 - b. *No*
 - c. *Unsure*

This result implies that each validator understood the purpose of the indicant and felt that he could readily rank the evidence satisfactorily.

In itself, this does not imply that one evidence set was right and the other wrong or that the indicant is a ranking panacea – it is not. Rather, it is a tool where data insufficiencies are focussed and acknowledged, allowing the parties to understand the contextual nature of the opinions being given.

This recognises that judges not only apply statutory criteria and court decisions to facts, but they also determine which of two competing sets of data (on which an expert opinion is based) is correct. Similarly, where there is competing evidence about the factual basis for the opinions, they attempt to determine the true position.

Whilst the indicant scores suggested that all cases had shortfalls in the datasets for all parties, it was the difference in the scores that suggested a difference in the data collected and the analysis of that data. So in respect of the underpinning data, the judges in these cases were essentially deciding between the 'lesser of two evils.' Such a circumstance identifies the context in which the indicant would be used, in

²⁶³ Excluding court staff, these costs can currently range from less than \$3500/hr to more than \$15,000/hr depending on the size of the matter and the number of professionals required.

this case a tool in the form of a rules-based ranking system to assist or help the decision-making process. It would not provide a definitive answer to a question posed by the court.

Nothing in the responses to the first two UES questions warranted a change to the indicant. For the responses to the third question (*How would you improve the indicant for future use?*), the thematic analysis outlined in Chapter 4 is discussed in the next section.

Thematic analysis

The validators' individual improvement response results are repeated here in italics and are discussed in plain text below. Remember, the three key themes identified were:

1. definition of participatory role in the process
2. importance of the brief
3. use of confining questions

Again, like the validators' communications, some quotes were such that they necessarily informed more than one theme.



Plate 14. Low flow groundwater testing in the matter of Maroochy Sands v Sunshine Coast Regional Council (2017). This dispute involved a proposed sand mine in a floodplain where the substrate exhibited a high fines concentration. The presence of these fines was to effectively curtail the production rate as settlement times increased. The application was withdrawn. (Photograph by author, 2017).

Definition of participatory role

The first theme that emerged from the data was a difficulty in understanding the expert's role in relation to:

1. expertise boundaries
2. their counterpart
3. the interactions of the parties

The following table provides validator quotes and the responses (if any) for inclusion in the second iteration of the indicant.

Table 51. Definition of participatory role quotes, research response and second iteration improvement determination.

Validator quote	Research response	Second iteration change?
<i>“I wasn’t sure whether I was qualified to comment (outside of the area of expertise)”</i>	Validator D felt unqualified in matters despite being asked to <i>assume</i> expertise in the nominated areas. This was a necessary trade-off between freedom to choose any area of expertise within the Indicant and an artificial limiting of or forcing selection(s). The validators were left to apply as broad or as narrow a view as they saw fit. The initial questions within the Indicant as to an individual’s expertise require the user to confirm that they are expert in their own areas. This section of the indicant is a key component that allows counsel to identify whether the expert is suited to the task they are being instructed to complete. Examination of the answers to these initial questions will give counsel and litigants alike early warning of potential evidentiary “pinch-points” in their cases.	No change warranted as in usage, any difference in claimed expertise would become immediately apparent and would assist the parties (before the trial) and the adjudicator (during the trial).
<i>“The Appellant’s expert did nothing” and “The Respondent’s expert did very little”</i>	These were general comments that highlight the importance of: • the comparative ranking of the Indicant scores, • the benefit of being able to assess the data sufficiency; and • express the degree of the knowledge’s validation for two or more datasets underpinning the evidence.	Yes - additional question after affirmative response to Q77 (<i>Have site-specific data been collected?</i>) to identify who collected data
<i>“When they are talking orders of magnitude being OK it just shows they have no concept of sensitivity analysis”</i>	This was a specific comment in response to treatment of groundwater flow results whereby the range given was too broad to be of any practicable help to a court or use in a matter. Using software, such as MODFLOW, the sensitivity of Groundwater models can be assessed automatically (computing the sensitivity of a parameter to input changes). As a tool, sensitivity analysis provides further context for the court concerning what may be important for the decision maker, but not necessarily deemed important by the expert. This illustrates two points:	Yes – within Analysis Evaluation section, additional choice after affirmative response to Q132 (<i>What further work is required?</i>) to add completion of sensitivity analysis

Validator quote	Research response	Second iteration change?
	- sensitivity analysis helps the court by determining the robustness of the assessment and goes to the certainty of the expert evidence; and - in the context of the individual expert's opinion, a judge hears all the evidence, and an expert sees only one part in detail. They have different perspectives from the outset.	
<i>"It was difficult to reference my reliance on the counterpart's (opposing expert's) work"</i>	This was a key response where, in the absence of their own data, experts can rightfully only diverge with another expert about the synthesis of the view, not the data itself. In essence, if you have not collected your own data, you are unable to unequivocally say that your counterpart's data are wrong. There is a foundational question of data collection, sources, reliability and the exposure of analysis to review and adversarial examination, here. In short: any analysis needs to stand up for itself. Clarity around these distinctions will help the courts in early identification of what was colloquially termed "the sniper's approach" by the Federal Court.²⁶⁴ If one is simply saying your counterparts are wrong, but remain unprepared to say why they wrong, it is unhelpful to the court. Similarly, one cannot say the data are wrong in the absence of alternative data. It can only be posited that the data <i>may</i> be wrong based on alternative facts or assumptions.	Yes – within Data Quality section additional question (after Q129) as to the reliance on the data collected by others

From these responses, it was apparent that three additional refinements were warranted in respect of data analyses and view synthesis. With respect to data analyses, this is detailed in the table below:

Table 52. 1st Indicant iteration refinement (Q77) to allow for improved clarity of use and second iteration improvement relating to sensitivity and data analyses with additional question.

1 st Indicant iteration	2 nd Indicant iteration
Have site-specific data been collected?	(If yes?) On behalf of which party/parties?
<i>(Multiple choice question)</i>	<i>(Insert identifier into one or more text box e.g.,:)</i>
(a) Yes	(a) Appellant

²⁶⁴ Federal Court of Australia (2021). *Sanda v PTTEP Australasia (Ashmore Cartier) Pty Ltd* (No 7) [2021] FCA 237 at <https://www.judgments.fedcourt.gov.au/judgments/Judgments/fca/single/2021/2021fca0237> This was a judgement relating to litigation surrounding one of Australia's largest oil spills and the impacts on Indonesian seaweed farmers. Of one of the experts, Justice Yates ruled: *The main thrust of his criticisms was to raise the prospect of error, without demonstrating that there was error, or error that would lead to an appreciably different outcome in actual result. Thus, his contentions that Professor Wereley's calculations were "unreliable" or "invalid" reside in, and do not transcend, the realm of argument and debate* [292]. In not presenting an alternative estimate of the amount of the oil spilled which *could be exposed to evaluation and comment by his fellow experts* — the judgment (says this: *The applicant submitted, with considerable justification, that Dr Zaldivar's contribution to the topic of the volume of oil spilled could best be described as that of a "sniper" firing shots at Professor Wereley's work* [295].

(b) No

(b) Respondent
(c) Submitter

Regarding data quality and the degree of reliance on a counterpart's work, a refinement is detailed in the next table.

Table 53. 1st Indicant iteration (after Q129) refinement and 2nd iteration addition.

1 st Indicant iteration	2 nd Indicant iteration
(Additional question)	Does this evidence rely on the expert's own data?
	<i>(Multiple choice)</i>
	(a) Yes - the expert's own data
	(b) No – that of others
	(c) A combination of both own and others

Regarding sensitivity analysis, a refinement is detailed in this table:

Table 54. 1st Indicant iteration (Q132) refinement to allow for improved clarity of use and 2nd iteration improvement.

1 st Indicant iteration	2 nd Indicant iteration
What further work is required?	What further work is required?
<i>(Select one or more)</i>	<i>(Select one or more)</i>
(a) Further data collection	(a) Further data collection
(b) Further data analysis	(b) Further data analysis
(c) Further evaluation of available data	(c) Further evaluation of available data
	(d) Completion of sensitivity analysis

Importance of the brief

The second theme to emerge was a level of frustration with the brief of materials within each matter. The brief of materials is the body of information provided to the expert, generally by an instructing solicitor or client, at the start of an engagement. Deciding on the nature and volume of material to provide is problematic for the instructor. Costs increase with too much information and potential evidence is at risk of being obscured. Conversely, too little information and potential evidence could be missed. In this aspect, the brief is very important to the expert.

As previously stated, one report was missing from the brief and had to be provided to one validator. Base information referred to in reports within the brief was not always in those reports (as written). The issue of the time spent preparing for the survey was raised in relation to the brief.

These responses as to the brief were unsurprising, in that briefs do vary from matter to matter. Some clients want to restrict information to control costs, others will brief with not only the current planning

scheme, but superseded schemes too. Thus, each matter will consume a different amount of time to the next.

In respect of the brief, the quotes and research response are given in the table below.

Table 55. Legal brief importance research response and 2nd iteration improvement determination.

Validator quote	Research response	2 nd iteration change?
<i>"The brief has to be clear"</i> <i>"The brief could have been broken down better – it needed sign-posts"</i> <i>"Sifting through all of the materials took time"</i>	One validator felt the brief needed to be arranged into relevant sections as opposed to being presented a collection of reports and the judgment. Another expressed surprise the briefs were so voluminous. This is a common issue with legal briefs. Instructing solicitors are generally reluctant to provide direction lest it colours the expert's review of the materials and unduly influences their opinion. In this case, this was a product of the actual brief.	No change warranted
<i>"I had to look up a number of technical terms"</i> <i>"Regolith was not mentioned in the materials – I had to spend a lot of time looking for it"</i>	These comments were from different validators. The first, from Validator E the undergraduate student was to be expected. The second reflects that, in the interests of brevity, the critical indicators and attributes use specific terms. Like the Validator E, third-party assessors might be obliged to consult technical dictionaries for terms. This is to be expected.	No change warranted

As with the validation exercise, the amount of time for each litigated matter can vary considerably. Often, matters initially thought to be small and confined turn out to be complex and fluid. That the validators already had a judgement for reference in each matter was an advantage but again, this can happen when cases are appealed, relitigated or otherwise re-fought. Remembering that the time taken by the expert validators to complete the indicant exercise varied between four and 17 minutes and that the student took between 12 and 44 minutes, it is apparent that all validators were confident enough to proceed with the exercise based on the data they had. In other words, they had formed a view.

The issue of specific technical terms being absent from the brief goes in part to the interaction of landform, agriculture and water resource scientific evidence. By its nature, this issue is complex and that reflects a need to keep discussing the use of technical terms. One may have been taught different terms to your counterpart. Whilst some terms are common others may not be. For example, the word *regolith* is not in common hydrogeological use, yet to an agricultural scientist it can help explain the formation of the soil, profile depth and the likelihood of near-surface water and interface drainage.

With this theme, it was evident that no changes needed to be made to the indicant. Experts and third-party assessors alike simply must accommodate a wide variety of briefs.

Use of confining questions

The third theme to emerge was that in the use of confining questions. In respect of this, the quotes and research response are given in the table below.

Table 56. Use of confining questions, research response and 2nd iteration improvement determination.

Validator quote	Response	2 nd iteration change?
<i>“The questions were stark”</i> <i>“I completely understood the rationale and the need to focus (the) questions”</i>	That the indicant questions were recognised as stark meant the user had been left, by design, with little room to qualify the answer. The response linking the Indicant rationale with the focus of the questions underscores a key purpose: a review of the evidence and its underpinning data.	No change warranted
<i>“Some of the questions asked didn’t apply”</i>	As matters differ, as do the expert’s instructions, there are likely to be multiple questions that do not apply. The key is in the <i>difference</i> between experts’ responses as to why they think the questions do not apply. The result will necessarily then focus the experts on their either different views or their misapprehension of the other’s position.	No change warranted
<i>“It was frustrating not to be able to say more – but the questions wouldn’t allow it”</i>	The indicant questions’ balance is necessarily between eliciting an adequate representation of the evidence and data whilst confining the response to focus on the specific issue at hand. Thus, the questions were deliberately confining. Given the overall results (and acknowledging that the will indicant need ongoing refinement as knowledge improves) it appears as though an initial balance has been found.	No change warranted
<i>“There is no need to change the questions”</i> <i>“The questions made perfect sense”</i>	These responses are self-explanatory.	No change warranted

It is this confining nature of the questions, relative to a rules-base for each relevant critical indicator, that underpins the indicant. By rigidly confining a question, the answers are necessarily focussed. Remembering that it is the comparison of the answers that is of interest, and the following benefits are apparent:

- Experts within a joint meeting process would be forced to ask of themselves (and each other) why their answers differ, and this self-awareness is a benefit;

- Should a qualification be required, the expert has an opportunity to
 - collect more data,
 - complete more analysis of the available data,
 - alter a view,
 - include a qualification within the JER as to why, based on the available data, a ‘settled’ opinion could not be reached.

The concept of a settled opinion is important in that it provides an indication to the court that the expert is content expressing the opinion based on the available data. In fact, a scientific expert would be obliged to revisit an opinion if new data indicated a contrary view should be preferred. This represents another gap between lawyers and scientists. Lawyers like opinions that are ‘concluded’ i.e. those on which there can be no further discussion. Indeed, the revised court rules of the Queensland Planning and Environment Court now call for a concluded opinion. One issue that lawyers appear to have with scientists is a perceived propensity to change their opinion when contrary data comes to hand.

The inference of a concluded opinion is that it implies the opinions cannot be changed even if there are additional data that suggests a contrary view. This is a difference between lawyers and scientists view of outcomes.

In the context of a JER, the very fact that a settled opinion could not be reached signals to the court or adjudicator that less weight might be applicable in that instance. Similarly, the examination of identified critical indicators provides an expert with a ‘ready-reckoner’ that adequate consideration has been made and reduces the temptation to opine on limited data.

The difference between concluded and settled opinions may be of no consequence in practice. However, it remains the duty of the scientific expert to explain if more data might result in a different answer and just how likely that may be. The lawyer will view this as a risk to the position of the lawyer’s client that may need mitigating.

Indicant improvements

As reported in Chapter 4, when asked to suggest improvements to the indicant, three sub-themes emerged from the validators: indicant purpose, structure and use. As to the purpose of the indicant, the responses were significant in that they appear, in combination, to indicate a concern that the results may be used against the expert. Indeed, one validator said:

“The questions should depend on whom you’re aiming your response at”
and

“How would the answers be interpreted by a third party?”

These comments raise the issue of third-party assessment, which was in fact the role that validator took. The adjusted response in the second iteration already accounted for this in that the target of the response is identified more clearly.

As to its structure, validator comments included:

“You could go deeper into technical aspects – like the Expert Systems proposed in the 1980’s – but that didn’t work”

“The branching technique might bypass questions”

“A good thing is to encourage an expert to at least try to understand the positive aspects of the others side’s case”

Again, these are significant in that they appear to indicate a misunderstanding over the indicant’s purpose. Firstly, branch logic was already in extensive use within the indicant. In all fairness to the validators, they could not know this. Secondly, a concerted attempt was wrought in the building of the indicant to balance fundamental critical criteria and attributes with excessive detail in identifying the critical criteria. In that context, one of the principal benefits of the JER process is an ‘adversarial peer review’, where the expert is forced to confront the shortcomings of their own assessment and enunciate such shortcomings in the assessments of others.

As to improving its use, a validator stated:

“There’s a danger the process would break down in highly technical cases”

This is true but there would be a focus on exactly where the process had broken down, allowing for time savings.

“Maybe introduce an overall question that says: ‘Is there enough information for an experienced expert to make a call on (a particular issue)?’”

To a large extent, the provision of such a ‘let-out’ clause would defeat the purpose of the indicant when being used in a Joint Expert Meeting. It would effectively allow an expert to escape the scrutiny that is a principal benefit of the indicant.

“The only other groundwater question needed is: ‘Has the regional groundwater flow system been established?’”

This is accepted and would be added to the second iteration.

Table 57. 2nd iteration question to allow for regional groundwater flow establishment question to be posed.

1 st Indicant iteration	2 nd Indicant iteration

N/A	Has regional groundwater flow been established?
	<i>(Multiple choice question)</i>
	(a) Yes
	(b) No

Quantitative statistics

As reported, the data gained from the validation exercise, measuring the statistical significance of the indicant's validity was necessarily limited to the ranking of the results firstly, because of the limited sample size and secondly, the nature of the variables being variously independent (i.e., causal) and dependent (i.e., effectual). These limitations go to the argument of why an indicant is useful at all if the validators all reached the same conclusion as the judgements in each litigation.

Descriptive statistics

The descriptive statistics of the analysis of validators' overall scores, calculated using a purpose-built Excel spreadsheet, are re-presented in Table 58.

Table 58. Descriptive Statistics of Overall Indicant Score: Result average (as mean), Standard Deviation and skewness level (95% Confidence level) for SCO (overall score - all validators).

Matter	Party (condition)	Mean (Standard Deviation)	Skewness
Barns	Appellants	73.00 (137.62)	0.571
	Respondents	153.99 (200.96)	0.371
Gillion	Applicant	186.25 (53.13)	-1.794
	Respondents	259.16 (144.07)	-0.817
Woolcott	Appellant	40.00 (67.82)	-1.794
	1st Respondent	259.16 (144.07)	0.042

The table shows the distributions of scores exhibiting appropriate skewness levels in all six conditions ($Skew = 2 \geq Z \geq -2$). All distributions are moderately skewed, meaning that the Indicant in these cases performed satisfactorily with a low level of skewness risk. Given the breadth of matters, the variety of subjects and experts, the indicant was robust in this regard.



Plate 15. Disputed rehabilitation and sediment and erosion controls under a light rail project in the matter of Impregilo SpA and Salini Australia Pty Ltd (ISJV) and Sydney Metro (Sydney Metro). One part of the dispute centred around the lack of contemporaneous data and the validity of retrospective aerial photo imagery in the provision of evidence. (Photograph by author, 2019).

Kendall's Coefficient of Concordance (W)

Kendall's W was calculated to measure the level of agreement (or concordance) amongst the validators as to their rankings (when assessed side by side). These were calculated using the results in each of the subject areas and for the overall score. This non-parametric test is a measure of agreement between assessors and ranges from 0 (no agreement) to 1 (perfect agreement). That is, the higher the value of Kendall's W, the stronger the association between scores.

Similarly, to test the null hypothesis (that there is no relationship between the variables), a probability or p-value < 0.05 was taken to be statistically significant. Below this significance level, null hypotheses could be safely rejected and there was enough evidence to support the postulated alternatives. Only in viewing the overall score could the null hypothesis be rejected. Within individual subject areas they could not, in all cases. For reference, the results are reproduced here.

Overall score

Table 59. Kendall's Coefficient of Concordance (W) analyses for SCO (overall score - all validators).

Matter	Party (condition)	Score (Rank)	K	m	W	r	χ^2	df	p-value
Barns	Appellants	73.00 (2)	2	4	1	1	4	1	0.0455
	Respondents	153.99 (1)							

Gillion	Applicant	186.25 (2)	2	4	1	1	4	1	0.0455
	Respondents	259.16 (1)							
Woolcott	Appellant	40.00 (2)	2	4	1	1	4	1	0.0455
	1 st Respondent	259.16 (1)							

Where: K = rating subjects, m = raters (or validators), W = Coefficient of Concordance, r = average (Spearman) correlation coefficient, df = degrees of freedom, p-value = probability value.

Because all four validators were in strong agreement under all six conditions ($w = 1$, $p < .05$, $df = 1$.) The p-value in all three data sets ($p < .05$) demonstrates that there is a significant statistical difference amongst the scores with the scores demonstrating that all parties had deficient data. Based on this statistical analysis, the null hypotheses could be rejected.

Therefore, an indicant, using critical indicators and attributes in the areas of expertise tested, can objectively compare the expert evidence and rank it and be used by others with limited expertise. However, as the validators reached same the conclusions as the judges or adjudicators, it is legitimate to ask what is the ‘point’ of the indicant (particularly if there are relevancy limitations of the assessment within the matter itself)? The ‘point’ is that a court’s decision ultimately decides what happens in the landform and to community resources.

Secondly, because the indicant was applied to a broad range of real-world problems, and the overall scores matched the decisions, an earlier recognition of these issues will help save time and costs. The arguments would be ‘brought-forward’ in the litigation process at a lower cost. Importantly, the indicant provides users and stakeholders alike a necessary yardstick or ‘ready reckoner’ that allows identified critical indicators to be cited by experts and non-experts alike.

Indicant access and maintenance

To assist the courts, parties and communities engaged in land-use conflicts, the indicant is designed to be run as an open access tool where results could be readily replicated and questioned by all. It would remain with and in the ownership of the ANU, and any subsequent refinements could be logged (within a new version) for reference, should that become important (for any reason).

Summary

This chapter provides an overview of the thesis postulated thus far – that expert scientific land-capability evidence fails to help the court when the epistemic substance of the underpinning assumptions, information, data and assessments is lacking. It summarised the current literature findings in three principal research areas: land-use conflict, land capability assessment, and the place and treatment of expert evidence in courts.

Drawing these together, it described the conceptualisation and development of a function or an indicant to rank expert evidence, based on defined, epistemic qualities. In discussing the indicant's development and the results of its evaluation and validation, the chapter examined its mechanics and limitations. The indicant's ruggedness at the hands of experts and third-party assessors was discussed and possible refinements to the indicant were advanced.

Finally, an examination of how the indicant might be readily accessed and maintained on an ongoing basis was made.

The selected methods were to:

- identify the critical landform, agricultural and water resource science indicators and attributes relating to the assessment of landform, agricultural and water resources relating to expert evidence;
- further identify critical indicators and attributes of data sufficiency;
- employ those indicators and attributes to objectively compare the substance of the assumptions, information, data and assessments that ultimately underpins the preparation the evidence;
- conceptualise and document a function or an indicant to describe the data adequacy supporting the evidence; and
- test and validate the indicant as a partial proof of concept.

This chapter presented the results of:

- the evaluation,
- the validation,
- a comparison between experts' outcomes; and
- a comparison between the experts and the undergraduate student.

In summary from the results, it is apparent that:

- an indicant, using critical indicators and attributes, can objectively compare the assumptions, information, data and assessments underpinning expert evidence;
- the comparisons may be ranked; and
- because the undergraduate student validator yielded the same outcome as the experts, the ranking may be used by others with limited expertise.

The next, concluding Chapter assesses whether the aims and objective of the study were achieved and whether the thesis was proved, disproved, or further work is required. It summarises the essential outcomes and identifies issues for further research.

Conclusions

This research examined the hypothesis that expert scientific land-capability evidence fails to help the court when the epistemic substance of the underpinning assumptions, information, data and assessments is lacking.

Aside from continuous (largely technology-driven) improvement in land-capability assessment, it has been the courts that have improved expert evidence procedures. Here though, there is also a role for scientific experts to better understand what form of information the legal system requires of them to help courts resolve land-use conflicts.

Scientists are duty-bound to explain theories, laws, concepts and ideas in such a way that the non-scientist is truthfully and helpfully informed. It is the community's interest to see these conflicts resolved in the most fair and objective manner possible. Consequently, the science matters.

The corollary of this is that data errors, with the potential to mislead the court, will inevitably give rise to potential misjudgements, which in turn may result in inappropriate land-use allocation and/or environmental harm. In that context, an issue was identified that, whilst all experts must comply with rigid rules for preparing evidence, they must also collect adequate data on which to base their opinions.

Herein lies an inherent tension: Even in specialist environmental jurisdictions, courts lack the scientific skills to be able to recognise the suite and quality of data required to build a sound opinion. Additionally, such data errors waste court time – which the community ultimately pays for – and increases costs for all parties and stakeholders. Thus, deficient land-capability assessments abet land-use conflicts which may result in harmful mistakes.

In the absence of a guide or an indicant to the required data and its quality, decisions risk being influenced by the theatre of the presentation – the performance – rather than the epistemic substance of the underpinning assumptions, information, data and assessments.

As a first step in helping the courts to identify, narrow and potentially resolve data issues at the centre of land-capability conflicts, this research conceptualised, built and tested – as a partial proof of concept – such an indicant.

By being able objectively to compare expert scientific evidence and by measuring the substance of the underpinning assumptions, information, data and assessments, judiciaries will be better equipped to weigh the evidence and rank it using the indicant. This should help courts to determine which evidence should be preferred in respect of objectivity, sufficiency, completeness and analysis.

In summary, because of identified issues and the existing body of knowledge, this concluding chapter:

- cites a philosophical nexus between three principal strands of existing research;
- studies, at that nexus, whether a methodological indicant may help courts resolve land capability conflicts by evaluation and external validation;
- summarises the method, results and analyses;
- assesses whether the aims and objective of the study were achieved;
- assesses further whether the thesis was proved, disproved or further work is required; and
- summarises the essential outcomes, contributions and identifies issues for further research.

Research similarities and gaps and their nexus

In the literature, three principal research strands were identified:

- land-use conflicts in respect of their origins between participants, the stakeholders and the impacts;
- land-capability assessment as a function of land quality, land tenure and water supply; and
- the place, treatment and prosecution of scientific expert evidence in courts.

In the existing body of knowledge, and at an apparent philosophical nexus between these three stands, there is only limited literature on the problem of courts assessing the epistemic quality of land capability. In positing that expert land-capability evidence in court requires epistemic assessment, a thesis was advanced that a systematic guide or indicant to critical landform, agricultural and water resource attributes could help improve the efficiency of court processes and increase the reliability of outcomes in land-use conflicts.

Each of the key pieces of research detailed herein contributed to this research. Kennedy's examination of environmental justice identified issue of citizens' opinions being gazumped by privileged expert evidence. Andretta's Structured Statistical Judgment (SSJ) and Bennett's conceptual Soil Security Framework sought to integrate land management measures, as this research does in respect of land capability.

The indicant responds to Edmund's call for "recognisable analytical tools and reforms that are informed by rigorous empirical research." In respect of a procedure, it acknowledges and builds upon Faigman's distinction between framework and diagnostic evidence.

The methods employed by Andretta et al can be usefully adapted, with the distinction being that the indicators of data sufficiency for land and water assessment are explicitly published in statutory and industry guidelines and codes. In this way, the indicant is similar to the conceptualisation of Andretta's

SSJ by also including a process to rank the evidence, reflecting a potential competitive distinction between the litigants. This is required because of the adversarial setting in which the experts produce and present their opinion evidence.

Noting the limitations of Andretta's SSJ, the research gaps addressed by this thesis are as follows:

- Incorrect or insufficient data is afforded preference because of the unique, privileged position of the scientific expert (being the only type of witness that may express their opinion in a way that is admissible in court).
- Land-use sustainability, having a long-term time horizon, is being compared with short-term planning horizons and where the data to characterise the land must be appropriate to ensure longevity of use.
- Land characteristics or classification systems are data-driven, and the reliability of a classification system for land is directly related to the reliability of the data set used.
- The scale of the assessment varies from site to site, and with the specifics of each land-use conflict. The data set must be consistent with the scale required.
- The purpose of each assessment varies from conflict to conflict and varies between industry sector to sector. The data must be consistent and sufficient for the activity being assessed.
- The courts rely on information. The data must be absolute, independent, permanent and not subject to qualification.
- A precedent for absolute data has been set, and the experts' degree of data certainty must be equal to that task - complete and unqualified or, if incomplete, appropriately qualified.

The courts have adjusted rules and procedures in an effort to tailor, guide and control expert evidence to better suit their requirements. As a body, scientific experts have not yet assisted courts in respect of process-based evidence as identified by Andretta and Faigman. This research sought to contribute such a process in relation to landform, agriculture and water resource evidence.

Method, results and analyses

Recognising that land capability is a combined function of three indicators (land quality, land tenure and water supply), this research variously:

- identified critical landform, agricultural, water resource data indicators and attributes;
- constructed a visual hierarchy;
- derived a method to test and validate an indicant for data scoring, ranking; and
- developed the indicant to make the hierarchy accessible in a web-based open access form.

The indicant was evaluated by comparing parties' evidence and the judgments in five real-world litigated land-use conflicts between 1999 and 2020 in the Australian States of Queensland and New South Wales. Using the developed indicant, the data and evidence were examined through the prism of selected critical indicators and attributes to objectively compare the substance of assumptions, information, data and assessments.

To validate the indicant and, as a partial proof of concept, three further land-use conflicts between 2011 and 2017 (also in the same Australian States) were examined by four recognised court experts and a third-year undergraduate student in agricultural science.

By selecting a method that identified the critical landform, agricultural and water resource science indicators and attributes, the assessment of those landform, agricultural and water resources could be related to expert evidence.

Similarly, critical questions around those indicators could be applied around data sufficiency underpinning the evidence. The objective comparison of the substance of the assumptions, information, data and assessments that underpinned the evidence was achieved by using the indicators and attributes.

Making that comparison easy and repeatable meant conceptualising an indicant to describe the data adequacy supporting the evidence. The indicant comprised a web-based recorded survey with questions based on court process, the critical indicator and attributes hierarchy, specific areas of expertise separated using branch logic and data sufficiency. It was this that was tested and validated.

The hypotheses tested were whether:

- an indicant, using critical indicators and attributes, could objectively compare the assumptions, information, data and assessments underpinning expert evidence;
- that comparison could then be ranked;
- that ranking could be used by others; and
- those others would need to be qualified.

After evaluation and validation, the qualitative analyses comprised a user engagement survey and a thematic analysis of the interview results. The results showed that an indicant, using critical indicators and attributes, can objectively compare the assumptions, information, data and assessments underpinning expert evidence.

This allowed those comparisons to be ranked. Furthermore, because the undergraduate student validator yielded the same outcome as the experts, the indicant could be employed by others with limited expertise without significantly altering the ranking.

The data produced by the indicant during the validation and evaluation processes were subjected to qualitative and quantitative statistical analyses to test the hypotheses and to identify patterns and trends in the results generated by the indicant. The quantitative analyses of the results comprised:

- Central tendency (average as mean);
- Deviation (away from mean);
- Skewness (distortion or asymmetry in the data distribution); and
- Kendall's coefficient of concordance (W) (measuring agreement amongst the Indicant users).

Collectively, these statistical analyses yielded two outcomes. Firstly, the indicant was 'fit for purpose' in that a reliable ranking was repeatedly achieved across variable conditions. Secondly, a second iteration of the indicant, that responded to the results of the qualitative and thematic analyses, would be needed.

Were the aims and objective of the study achieved?

The research yielded a hierarchy that visually represents critical land and water characteristics. Based on that hierarchy, a systematic guide or 'indicant' was developed. It was demonstrated that the indicant can be used to compare and rank expert evidence and readily focus on the points of difference between two or experts. As such, it fit with Faigman's concept of helpfulness in adding value to the fact finder – the judge or adjudicator – in the context of expert scientific evidence. In this, the aims and objectives were achieved.

As to whether the thesis was proved, disproved, or further work required, the results indicated that, in all three validation matters, all four validators were in strong agreement. Under all six conditions in their ranking of the evidence presented, there was a significant statistical difference amongst the scores. Based on this statistical analysis, the null hypotheses were rejected.

Therefore, it was concluded that:

- an indicant, using critical indicators and attributes in the areas of expertise tested, can objectively compare the assumptions, information, data and assessments underpinning expert evidence;
- the comparisons may be ranked; and

- because the undergraduate student validator yielded the same outcome as the experts, the indicant can be used by others with limited expertise without significantly altering the ranking.

Further work was required, and qualitative analysis indicated where the survey format could be improved.

The second iteration of the indicant, reflecting the changes detailed above, can be found at this link: https://anu.au1.qualtrics.com/jfe/form/SV_2oykwD28yg4uFrE

Essential outcomes

In the context of a study limited to the analysis of eight matters that had already been adjudicated, the essential outcomes of the research, its contributions and issues for further research are as follows. The use of the indicant to epistemically rank evidence in the areas of expertise of landform, agriculture and water resources is valid in that an objective comparison may be usefully made. The indicant is limited to those expert areas alone but could be extended into other areas using the same method.

Aligning with Faigman's transfer of group to individual inference in scientific expert testimony, the indicant allows the application of framework evidence to a site. Thus, it assists in closing the gap between what scientists do and what is demanded of them as expert witnesses.

Without needing different admissibility standards for experts proffering framework and diagnostic evidence, it assists both the courts and parties by providing greater context to the evidence. This research supports:

- the possibility of a functional set of indicants (based on credible science concerning land and related characteristics), that can guide or test the work of technical experts in relation to legal disputes over land-use.
- that such indicants should reduce the variability of the work of experts and make it more likely that their work will reflect good or best practice science that is relevant to particular land and natural resource characteristics.
- that the use of a such indicants should increase the comprehensiveness of expert evaluations and provide a basis for the quality assurance for such work.

- that such indicants can be designed to be efficient for users.

As to the potential research contributions, the method and indicant contributes to:

- an objective, repeatable indicator ranking of land-capability assessment that can be locally compared, in that qualitatively scoring the representations for comparative purposes affords the adjudicator more certainty when assessing conflicting evidence;
- an improved understanding of landform, agricultural & water resource interactions;
- an increased awareness of data quality during litigation;
- an improved identification and characterisation of difference, agreement and disagreement between the experts before evidence is prepared;
- earlier identification of deficient land capability assessments, giving an early warning of evidentiary ‘pinch-points’ to counsel and litigants;
- better equipping stakeholders and reducing the emphasis on the theatre of court presentations;
- a potential reduction in land-use conflict; and
- potential savings in court time and costs.

Because of the high costs and the extensive time often involved in litigation, it is the last contribution that is likely to be the most significant.

The indicant has limited application for determining whether extensive investigations have been made, nor is it determinative in demonstrating that they were required. That is, an expert who has completed more extensive investigations will rank more highly. However, only one or two points might matter in a particular case. A witness who has correctly identified them, correctly assessed them, and drawn correct conclusions from them might not necessarily record a higher indicant score.

For this reason, the indicant should not be viewed as determinative, but as a tool to help courts, parties, experts, submitters and other users/stakeholders to better understand the data and information requirements that form the basis upon which expert evidence is founded. In itself, the indicant is not a ranking panacea. Rather, it is a tool where data insufficiencies are focussed and acknowledged, allowing the parties to understand the contextual nature of the opinions being given. In terms of further research, the second iteration of the indicant will need testing in the same way as the first. The development of critical criteria for climate resilience for inclusion within the indicant should be pursued. Additionally, in respect of a minimum number of groundwater bores and observations to inform a Hydrogeological Conceptual Model, the nomination here of a minimum of four bores and its efficacy represents a research gap that should be the subject of another study.

As to areas of expertise that might be suited to framework evidence (due to factors such as the existence of standards and guidelines against which data gathering and analysis can be objectively measured), disciplines or areas of expertise that are oft contested but exhibit a potential for the development of critical criteria would likely include:

- acoustics/noise;
- air quality/dust/odour;
- cultural heritage;
- ecology;
- geotechnics;
- surface water quantity/flooding; and
- visual amenity.

References

- ABARES 2016, The Australian Land Use and Management Classification Version 8, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra. CC BY 3.0
- ABBASNIA, A., et al. (2019). Evaluation of groundwater quality using water quality index and its suitability for assessing water for drinking and irrigation purposes: Case study of Sistan and Baluchistan province (Iran). *Human and Ecological Risk Assessment: An International Journal* 25(4): 988-1005.
- ABBASNIA, A., YOUSEFI, N., MAHVI, A. H., NABIZADEH, R., RADFARD, M., YOUSEFI, M. & ALIMOHAMMADI, M. 2019. Evaluation of groundwater quality using water quality index and its suitability for assessing water for drinking and irrigation purposes: Case study of Sistan and Baluchistan province (Iran). *Human and Ecological Risk Assessment: An International Journal*, 25, 988-1005.
- AKINS, A., LYVER, P. O. B., ALRØE, H. F. & MOLLER, H. 2019. The universal precautionary principle: New pillars and pathways for environmental, sociocultural, and economic resilience. *Sustainability*, 11, 2357.
- ALI, A., STREZOV, V., DAVIES, P. & WRIGHT, I. 2017a. Environmental impact of coal mining and coal seam gas production on surface water quality in the Sydney basin, Australia. *Environmental monitoring and assessment*, 189, 1-16.
- ALI, A., STREZOV, V., DAVIES, P. & WRIGHT, I. 2017b. Environmental impact of coal mining and coal seam gas production on surface water quality in the Sydney basin, Australia. *Environmental Monitoring and Assessment*, 189, 408.
- ANDRETTA, J. R., et al. (2019). Applying statistics to the gatekeeping of expert evidence: Introducing the Structured Statistical Judgement (SSJ). *Behavioral Sciences & the Law* 37(2): 133-144
- ANDRETTA, J. R., MORGAN, G. B., CANTONE, J. A. & RENBARGER, R. L. 2019. Applying statistics to the gatekeeping of expert evidence: Introducing the Structured Statistical Judgement (SSJ). *Behavioral Sciences & the Law*, 37, 133-144.
- ANZECC–ARMCANZ (2000). Australian guidelines for water quality monitoring and reporting. In *National Water Quality Management Strategy; Paper No 7; Australian and New Zealand Environmental and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand: Canberra, Australia.*
- ANZECC–ARMCANZ (2000a). Australian and New Zealand guidelines for fresh and marine water quality. *National Water Quality Management Strategy; Paper No 4; Australian and New Zealand Environmental and Conservation Council, Agriculture Resource Management Council of Australia and New Zealand: Canberra, Australia.*
- ARAÚJO COSTA, R. C., PEREIRA, G. T., TARLÉ PISSARRA, T. C., SILVA SIQUEIRA, D., SANCHES FERNANDES, L. F., VASCONCELOS, V., FERNANDES, L. A. & PACHECO, F. A. L. 2019. Land capability of multiple-landform watersheds with environmental land use conflicts. *Land Use Policy*, 81, 689-704.
- ARMCANZ–ANZECC (1994). *National Water Quality Management Strategy: Policies and Principles—A Reference Document; Paper No 2; Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand: Canberra, Australia.*
- AUSTRALIAN LAW REFORM COMMISSION (2016) *Traditional Rights And Freedoms—Encroachments By Commonwealth Laws (ALRC Report 129)*
<https://www.alrc.gov.au/publication/traditional-rights-and-freedoms-encroachments-by-commonwealth-laws-alrc-report-129/2-rights-and-freedoms-in-context/common-law-foundations/>.

- AUSTRALIAN LAW REFORM COMMISSION, 2014 Traditional Rights and freedoms—Encroachments by Commonwealth Laws, Issues Paper No 46 (2014) Ch. 19.
- AUSTRALIAN MINING November 26, 2015, Newspaper Article Handover of QCLNG to BG Group complete quoting BG Group chief executive Helge Lund
- AUSTRALIAN SOIL AND LAND SURVEY, 2009 Field Handbook (3rd Edition), CSIRO Publishing.
- AVENG ANNUAL REPORT 2017 <https://aveng.co.za/pdf/investors/annual-reports/2017/aveng-iar-2017.pdf>
- BARNETT, B., TOWNLEY, L.R., POST, V., EVANS, R.E., HUNT, R.J., PEETERS, L., RICHARDSON, S., WERNER, A.D., KNAPTON, A. & BORONKAY (2012). Australian groundwater modelling guidelines. The National Water Commission 95 Northbourne Avenue Canberra ACT 2600. ISBN: 978-1-921853-91-3.
- BENNETT, J. M., et al. (2019). Soil Security for Australia. *Sustainability* 11(12): 3416.
- BENNETT, J. M., MCBRATNEY, A., FIELD, D., KIDD, D., STOCKMANN, U., LIDDICOAT, C. & GROVER, S. 2019. Soil Security for Australia. *Sustainability*, 11, 3416.
- BENTLEY, P. J., JIANG, H. & MEGORDEN, M. Improving hydraulic fracture geometry by directional drilling in a coal seam gas formation. SPE Unconventional Resources Conference and Exhibition-Asia Pacific, 2013. OnePetro.
- BOON, P. J. & PRINGLE, C. M. 2009. Assessing the conservation value of fresh waters : an international perspective, Cambridge; New York, Cambridge University Press.
- BRAGG, J.-A. (2006). Community litigants in the Queensland planning and environmental legal system, National Environmental Law Association. March 2006 ISSN:1445-405X.
- BROWN, G. & RAYMOND, C. M. 2014. Methods for identifying land use conflict potential using participatory mapping. *Landscape and Urban Planning*, 122, 196-208.
- CASTLES, A.C. (1963) <https://hdl.handle.net/2440/14894> The reception and status of English law in Australia. *Adelaide Law Review*, 1963; 2(1): 1-32. Adelaide Law Review Association, School of Law, University of Adelaide.
- CHENG, A. H. D. B. J. 2016. Modeling groundwater flow and contaminant transport, [Place of publication not identified], SPRINGER.
- CHIN, J. M., et al. (2020). The new psychology of expert witness procedure, University of Sydney. Can procedural reforms effectively regulate expert witnesses? University of Sydney.
- COE, A. L. & OPEN, U. 2005. The sedimentary record of sea-level change, Milton Keynes; Cambridge, Open University; Cambridge University Press.
- COLLINS DICTIONARY OF LAW (2006), <https://legal-dictionary.thefreedictionary.com/quiet+enjoyment> accessed 1 November 2021
- CORPORATION, S. M. E. 2007. Integrated Water Supply Options for north east NSW and south east Queensland. National Water Commission, Canberra, Australia
- CRAWFORD, L.B. (2017) The Rule of Law and the Australian Constitution. Australia: Federation Press.
- DAVIE, T. 2019. Fundamentals of hydrology. Routledge
- DEPARTMENT OF AGRICULTURE, WATER AND THE ENVIRONMENT (2021) Australian Government. <https://www.awe.gov.au/abares/research-topics/water/water-market-outlook>

- DROOP, O.P. AND MATTHEW P.L. (2012) Proposed Basin Plan - Public Submission to Murray Darling Draft Basin Plan, Murray Darling Basin Authority, Australian Government, Canberra, Australia.
- EDMOND, G. 2000. "Law and Science: Current Legal Issues Volume 1 Reviews." *Int'l J. Evidence & Proof* 4: 137.
- EDMOND, G., FERGUSON, A., & WARD, T. 2018. Assessing concurrent expert evidence. *Civil Justice Quarterly*, 37(3), 344-366. <http://nrl.northumbria.ac.uk/32674/>
- EDWARDS, P. (2009). Trust: Power and Engagement – Participatory Water Planning on the Gold Coast, Australia. PhD Thesis. Griffith University, Brisbane, Australia.
- ENVIRONMENTAL DEFENDERS OFFICE (2022): Our Funding https://www.edo.org.au/our-funding/?gclid=EAIaIQobChMIzr-Fy5Hn8gIVS5JmAh2DKwniEAAYASAAEgL4LfD_BwE
- environmental land use conflicts." *Land Use Policy* 81: 689-704. (Cited in Chapter 2).
- ESTY, D. C., et al. (2008). Environmental performance index. New Haven: Yale Center for Environmental Law and Policy 382.
- FAIGMAN, D. L., et al. (2014). Group to Individual (G2i) Inference in Scientific Expert Testimony. *The University of Chicago Law Review* 81(2): 417-480.
- FAIGMAN, D. L., MONAHAN, J. & SLOBOGIN, C. 2014. Group to Individual (G2i) Inference in Scientific Expert Testimony. *The University of Chicago Law Review*, 81, 417-480.
- FAIGMAN, D. L., PORTER, E., & SAKS, M. J. 1993. Check your crystal ball at the courthouse door, please: Exploring the past, understanding the present, and worrying about the future of scientific evidence. *Cardozo L. Rev.*, 15, 1799.
- FAO (1976) A framework for land evaluation. Food and Agricultural Organization of the United Nations, Rome
- FAO (1984) Guidelines: land evaluation for rainfed agriculture. FAO Soils Bulletin 52, Rome
- FAO (1985) Guideline: land evaluation for irrigated agriculture. FAO Soils Bulletin, No. 55, Rome
- FEDERAL COURT OF AUSTRALIA (2021). *Sanda v PTTEP Australasia (Ashmore Cartier) Pty Ltd* (No 7) [2021] FCA 237 at <https://www.judgments.fedcourt.gov.au/judgments/Judgments/fca/single/2021/2021fca0237>
- Feldman, D. (1990). "Democracy, the Rule of Law and Judicial Review". *Federal Law Review* 19(1): 1-30.
- FETTER, C. W. 2018. Applied hydrogeology. Waveland Press.
- FOODY, G. M., et al. 2016. The sensitivity of mapping methods to data quality: Training supervised image classifications with imperfect reference data. *ISPRS International Journal of Geo-Information* 5(11): 199.
- FOSSEN, H. 2019. Structural geology, Cambridge, Cambridge University Press.
- FRECKELTON, I. R. & SELBY, H (2009). Expert evidence: Law, practice, procedure and advocacy, Thomson Reuters (Proux Science).
- FREEZE, R. A. & CHERRY, J. A. 1982. Groundwater, Englewood Cliffs, N.J., Prentice-Hall.
- GALLAGHER, J (2016). John Gallagher QC Pers. Comm.: "Court is the last Colosseum".
- GENDINNING, J. S. 1999. Australian soil fertility manual, Collingwood, Vic., CSIRO Pub.
- GIEZEN, M., BALIKCI, S. & ARUNDEL, R. 2018. Using remote sensing to analyse net land-use change from conflicting sustainability policies: the case of Amsterdam. *ISPRS International Journal of Geo-Information*, 7, 381.

- GILBERT & SUTHERLAND (2019) BSAL mapping from attributed Dataset
<https://www.arcgis.com/home/item.html?id=58b5c65ec2894125a260cfcf65eed6a6>
- GOLAN, T. 2009. Laws of men and laws of nature: the history of scientific expert testimony in England and America, Cambridge (Massachusetts), Harvard University Press.
- GRAHAM, N. 2014. This is Not a Thing: Land, Sustainability and Legal Education. *Journal of Environmental Law*, 26, 395-422.
- GREENHOUSE, L. 2018. The Supreme Court & Science. A Case in Point. *Daedalus*, 147, 28-40.
- GRIFFITHS, D. H. & KING, R. F. 1965. Applied geophysics for engineers and geologists, Oxford.
- GROUND, W. & DILLON, P. J. 2020. Management of aquifer recharge for sustainability: proceedings of the 4th International Symposium on Artificial Recharge of Groundwater, ISAR-4, Adelaide, South Australia, 22-26 September 2002.
- GUNN, R., BEATTIE, J., REID, R. & VAN DE GRAAFF, R. 1988. Australian soil and land survey handbook: guidelines for conducting surveys.
- HAACK, S. (2019). Judging Expert Testimony: From Verbal Formalism to Practical Advice. QF Quaestio facti. *Revista internacional sobre razonamiento probatorio* (1).
- HAMER, D. & EDMOND, G. (2019). Forensic Science Evidence, Wrongful Convictions and Adversarial Process. *University of Queensland Law Journal*.
- HAVEL, J. J. 1986. Land use conflicts. In: DELL, B., HOPKINS, A. J. M. & LAMONT, B. B. (eds.) *Resilience in Mediterranean-type ecosystems*. Dordrecht: Springer Netherlands.
- HENDRIKS, J. H. DE BOER & SMILDE, A. K. (1992) Elsevier. 19: 79-147.
- HERSPERGER, A. M., IOJA, C., STEINER, F. & TUDOR, C. A. 2015. Comprehensive consideration of conflicts in the land-use planning process: a conceptual contribution. *Carpathian Journal of Earth and Environmental Sciences*, 10, 5-13.
- HILSON, G. 2002. An overview of land use conflicts in mining communities. *Land Use Policy*, 19, 65-73.
- HISTPARK Pty Ltd & Anor v Maroochy Shire Council [2001] QPEC 59 [2002] Q.P.E.L.R. 135 (00/0018) Robertson DCJ. 20 September 2001 and Environment Protection Authority v Dyno Nobel Asia Pacific Pty Ltd [2017] NSWLEC 64
- HOLCOMB, J. (2012a). George Bunn and Co: A study in British venture capital and company formation in early-colonial Australia. *Journal of Australian Colonial History* 14: 29-48 (quoting Atkinson, A.).
- HOLCOMB, J. (2012b). George Bunn and co: A study in British venture capital and company formation in early-colonial Australia. *Journal of Australian Colonial History*, 14, 29-48.
- HOLLEY, C., KENNEDY, A., MUTONGWIZO, T., & SHEARING, C. (2021). Public Servants and Regulator Capture in Energy and Environmental Governance. In *The Palgrave Handbook of the Public Servant* (pp. 835–852). Springer International Publishing. https://doi.org/10.1007/978-3-030-29980-4_7
- HU, Q., WU, W., XIA, T., YU, Q., YANG, P., LI, Z. & SONG, Q. 2013. Exploring the use of Google Earth imagery and object-based methods in land use/cover mapping. *Remote Sensing*, 5, 6026-6042.
- HUNTER, G. J., et al. 2009. Spatial data quality: problems and prospects. *Research trends in geographic information science*, Springer: 101-121.
- HUNTER, G. J., et al. 2009. Spatial data quality: problems and prospects. *Research trends in geographic information science*, Springer: 101-121. Ibid, p19 (of original text).

- IOJĂ, C. I., NIȚĂ, M. R., VÂNĂU, G. O., ONOSE, D. A. & GAVRILIDIS, A. A. (2014). Using multi-criteria analysis for the identification of spatial land-use conflicts in the Bucharest Metropolitan Area. *Ecological Indicators*, 42, 112-121.
- IZAKOVIČOVÁ, Z., et al. (2018). Integrative assessment of land use conflicts. *Sustainability* 10(9): 3270.
- IZAKOVIČOVÁ, Z., MIKLÓS, L. & MIKLÓSOVÁ, V. 2018. Integrative assessment of land use conflicts. *Sustainability*, 10, 3270.
- JAHAN, S. & V. STREZOV (2017). Water quality assessment of Australian ports using water quality evaluation indices. *PloS one* 12(12): e0189284.
- JING, W., et al. (2021). Potential Land Use Conflict Identification Based on Improved Multi-Objective Suitability Evaluation. *Remote Sensing* 13(12): 2416.
- JULIEN, P. Y. 2018. River mechanics.
- KACZAN, D. J. & ORGILL-MEYER, J. 2020. The impact of climate change on migration: a synthesis of recent empirical insights. *Climatic Change*, 158, 281-300.
- KAFADAR, K. 2017. The Critical Role of Statistics in Demonstrating the Reliability of Expert Evidence The Philip D. Reed Lecture Series Advisory Committee on Evidence Rules. *Fordham L. Rev.*, 86, 1617.
- KALF, F. R. P. & WOOLLEY, D. R. 2005. Applicability and methodology of determining sustainable yield in groundwater systems. *Hydrogeology Journal*, 13, 295-312.
- KARIMI, A. & BROWN, G. (2017). Assessing multiple approaches for modelling land-use conflict potential from participatory mapping data. *Land Use Policy* 67: 253-267.
- KASTRINOU, A. M. A., et al. (2020). The stateless advantage? Resistance, land and rootedness in the Israeli-occupied Syrian Golan Heights. *Territory, Politics, Governance*: 1-20.
- KENDALL, M.G. (1948) Rank correlation methods. London: Griffin. Source formulae <https://www.real-statistics.com/reliability/interrater-reliability/kendalls-w/>
- KENNEDY, A. 2017. Environmental justice and land use conflict: The governance of mineral and gas resource development, Routledge.
- KENT, N. (1796). General view of the Agriculture of the County of Norfolk with observations on the means for its improvement. Published by Richard Phillips, Bridge Street, Blackfriars, London.
- KIM, I. & ARNHOLD, S. (2018). Mapping environmental land use conflict potentials and ecosystem services in agricultural watersheds. *Science of The Total Environment* 630: 827-838.
- KOLLAT, J. B. & REED, P. M. 2006. Comparing state-of-the-art evolutionary multi-objective algorithms for long-term groundwater monitoring design. *Advances in Water Resources*, 29, 792-807.
- KOOWARTA v State of Queensland. 2014. Federal Court of Australia 627.
- KUHN, S., et al. (2018). Lithologic mapping using Random Forests applied to geophysical and remote-sensing data: A demonstration study from the Eastern Goldfields of Australia. *Geophysics* 83(4): B183-B193.
- LAND RESOURCES BRANCH (1990) Guidelines for Agricultural Land Evaluation in Queensland (2nd Edition 2015, DSITI & DNRM). Queensland Government (Department of Science, Information Technology and Innovation and Department of Natural Resources and Mines), Brisbane. Guidelines for agricultural land evaluation in Queensland, Department of Primary Industries ISBN 0646027417 Bib ID 1976455 <https://www.publications.qld.gov.au/dataset/bf5588bc-a0ee-4e1b-ab09-dc69e4e5680a/resource/d6591386-08e2-453f-a6fa-dff2a756215f/download/qlguidelinesforagriculturallandevaluation2e2015.pdf>

- LEEMING, M (2021) "So Help Me God: a history of oaths of office". PM Glynn Institute Occasional Paper No 3 Australian Catholic University, Sydney, Australia.
- LI, C., et al. (2021). Status of the treatment of produced water containing polymer in oilfields: A review. *Journal of Environmental Chemical Engineering* 9(4): 105303.
- LINES-KELLY, R. 2000. Soil sense: soil management for NSW north coast farmers, Wollongbar, NSW Agriculture.
- LORD HOFFMANN in Australian Law Reform Commission (2016) Traditional Rights And Freedoms—Encroachments By Commonwealth Laws (ALRC Report 129)
<https://www.alrc.gov.au/publication/traditional-rights-and-freedoms-encroachments-by-commonwealth-laws-alrc-report-129/2-rights-and-freedoms-in-context/common-law-foundations/> at 2.30
- MACIVER, E. (1905). *Memoirs of a Highland Gentleman: Being the Reminiscences of Evander MacIver of Scourie, Sutherland, Scotland*. TA Constable, Edinburgh, Scotland.
- MAIOLO, M. & PANTUSA, D. 2019. Sustainable Water Management Index, SWaM_Index. *Cogent Engineering*, 6, 1603817.
- MAIOLO, M. & PANTUSA, D. 2019. Sustainable Water Management Index, SWaM_Index. *Cogent Engineering*, 6, 1603817.
- MANANDHAR, S., PANDEY, V. P. & KAZAMA, F. (2012). Application of water poverty index (WPI) in Nepalese context: A case study of Kali Gandaki River Basin (KGRB). *Water Resources Management*, 26, 89-107.
- MARCZUK, Karina Paulina, *Origins of Immigration to Australia, 1787-1914* (2017). *Arhivele Olteniei*, 31, 39-50, SRN: <https://ssrn.com/abstract=3309591>.
- MCCLAY, K. R. (2006). *The mapping of geological structures*, Chichester, Wiley.
- MCGINNIS, J. O. (2003). Lawyers as the Enemies of Truth. *Law and Truth: Twenty-First Annual National Student Federalist Society Symposium on Law and Public Policy - 2002: Roundtable: The Lawyer's Responsibility to the Truth*. *Harvard Journal of Law & Public Policy* 26(1): 231-234.
- MCGINNIS, J. O. (2003). Lawyers as the Enemies of Truth *Law and Truth: Twenty-First Annual National Student Federalist Society Symposium on Law and Public Policy - 2002: Roundtable: The Lawyer's Responsibility to the Truth*. *Harvard Journal of Law & Public Policy*, 26, 231-234.
- MCGRATH, C (2021). High Court states important principles for construing statutory approvals. <https://www.higginschambers.com.au/sunland/>
- MCGRATH, C., (2011) ANU College of Law. Graduate Program in Law. Environmental Litigation Course Materials. LAWS8187 CLASS 7561 6-8 July 2011.
- MCKENZIE, N. (2008). *Guidelines for surveying soil and land resources*, Melbourne, CSIRO Pub.
- MCKENZIE, N., JACQUIER, D., ISBELL, R. & BROWN, K. (2004). *Australian Soils and Landscapes: an Illustrated Compendium*.
- MCKILLUP, S. & DYAR, M. D. 2010. *Geostatistics explained: an introductory guide for Earth scientists*.
- MERUGU, T., SHASHIKALA & MATHYAM, P. (2015). Variability study on the length of growing period (l_{gp}) using ground and space based (modis) data for the selected mandals of Warangal District. *International Journal of Advancement in Remote Sensing, GIS, and Geography (IJARSGG)*, 3, 48 - 58.
- MILLER, J. D. & HUTCHINS, M. (2017). The impacts of urbanisation and climate change on urban flooding and urban water quality: A review of the evidence concerning the United Kingdom. *Journal of Hydrology: Regional Studies* 12: 345-362,

- MORAND, D. T., NEW SOUTH, W., DEPARTMENT OF, C. & LAND, M. 1996. Soil landscapes of the Murwillumbah-Tweed Heads 1:100,000 (Fingal, Pottsville, Green Pigeon, Tyalgum), Sydney, N.S.W., Dept. of Land and Water Conservation.
- MURRAY DARLING BASIN AUTHORITY (2011). Draft Basin Plan. Australian Government, Canberra, Australia <https://www.mdba.gov.au/publications/archived-information/basin-plan-archives/steps-development-basin-plan>
- MURRAY-DARLING BASIN ROYAL COMMISSION REPORT (2019). South Australian Government Royal Commission. Government of South Australia. Adelaide. South Australia. ISBN 978-0-6484670-2-1
- NATIONAL UNIFORM DRILLERS LICENSING COMMITTEE (2020) The minimum construction requirements for water bores in Australia. 4th Edition (First published 1997 Second edition 2003 Third edition 2012 Fourth edition 2020 ISBN 978-0-646-81881-8).
- Nelson, A. (1946) Principles of Agricultural Botany Chapter XXII 'Weeds' (Page 439), Thomas Nelson and Sons Ltd.
- NEW SOUTH, W., DEPARTMENT OF, C., LAND, M. & MORAND, D. T. 1994. Department of Conservation and Land Management soil landscape series. Sheets 9540-9640, Sheets 9540-9640. [Sydney]: The Department.
- NHMRC–NRMMC (2004) (National Health and Medical Research Council and Natural Resource Management Ministerial Council, 2004) Australian Drinking Water Guidelines; NHMRC, NRMMC: Canberra, Australia, Available online: http://www.nhmrc.gov.au/publications/_files/adw_11_06.pdf
- NICHOLS, G. 2013. Sedimentology and Stratigraphy.
- NRMMC; EPHC & AHMC (2006). Australian Guidelines for Water Recycling: Managing Health and Environmental Risks. NWQMS Document 21 <http://www.waterquality.gov.au/guidelines/recycled-water>
- NRMMC; EPHC & NHMRC (2008) Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2). In Augmentation of Drinking Water Supplies; NWQMS Document 22 <http://www.waterquality.gov.au/guidelines/recycled-water>
- NRMMC; EPHC & NHMRC (2009) Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) Managed Aquifer Recharge. National Water Quality Management Strategy Document 24 National Water Resource Management Ministerial Council, Environment Protection and Heritage Council, National Health and Medical Research Council: Canberra, Australia <http://www.waterquality.gov.au/guidelines/recycled-water>
- NRMMC; EPHC & NHMRC (2009) National Water Quality Management Strategy. Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2). In Stormwater Harvesting and Reuse; NWQMS Document 23 <http://www.waterquality.gov.au/guidelines/recycled-water>
- NSW Department of Planning, Industry and Environment (2021). <https://www.planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/Safeguarding-our-Agricultural-Land>
- NSW Department of Planning, Industry and Environment (2021). <https://www.planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/Safeguarding-our-Agricultural-Land>
- NSW Department of Primary Industries (2011) Land Use Conflict Risk Assessment Guide. Resource Planning & Development Unit. NSW Department of Primary Industries 134 first edition ISSN 1832-6668.

- NSW Department of Primary Industries (2017) Agricultural Land Use Mapping Resources in NSW - User's guide. February 2017 Primefact 1538 first edition Helen Squires Agricultural Resource Management Officer, Agricultural Land Use Planning, Paterson. NSW
- NSW Department of Primary Industries (2021). Draft State Significant Agricultural Land Map. <https://nswdpi.mysocialpinpoint.com/ssal>
- NSW Department of Primary Industries 2021. Draft State Significant Agricultural Land Map. <https://nswdpi.mysocialpinpoint.com/ssal>
- NSW Department of Primary Industries 2021. Draft State Significant Agricultural Land Map. <https://nswdpi.mysocialpinpoint.com/ssal>
- NSW Land and Environment Court (2022) <https://www.lec.nsw.gov.au/lec/coming-to-court/experts--expert-evidence-and-general-witnesses/expert-witness-code-of-conduct-and-duties.html>
- NSW Office of Environment and Heritage (2012) The land and soil capability assessment scheme. <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/land-soil-capability-assessment-scheme-120394.pdf> ISBN 978 1 74293 634 5 OEH 2012/0394 October 2012
- O'KANE, G. 2012. What is the real cost of our food? Implications for the environment, society and public health nutrition. *Public Health Nutrition*, 15, 268-276.
- ÖRÜCÜ, E. 2002. Law as Transposition. *The International and Comparative Law Quarterly*, 51, 205-223.
- PE'ER, G., BONN, A., BRUELHEIDE, H., DIEKER, P., EISENHAUER, N., FEINDT, P. H., HAGEDORN, G., HANSJÜRGENS, B., HERZON, I. & LOMBA, Â. 2020. Action needed for the EU Common Agricultural Policy to address sustainability challenges. *People and Nature*, 2, 305-316
- PE'ER, G., et al. (2020). Action needed for the EU Common Agricultural Policy to address sustainability challenges. *People and Nature* 2(2): 305-316.
- PÉREZ-FOGUET, A. & GARRIGA, R.G. (2011). Analyzing water poverty in basins. *Water Resources Management* 25(14): 3595-3612.
- PERILLO, J. T., et al. (2021). Testing the waters: An investigation of the impact of hot tubbing on experts from referral through testimony. *Law and Human Behavior* 45(3): 229.
- PREFONTAINE, N. (2019). Talcum Powder and Expert Power: Admissibility Standards of Scientific Testimony. *Jurimetrics* 59(3): 341-374. Haack, S. (2019). Judging Expert Testimony: From Verbal Formalism to Practical Advice. *QF Quaestio facti. Revista internacional sobre razonamiento probatorio* (1).
- PRESTON, B. (2008). Operating an environment court: The experience of the Land and Environment Court of New South Wales. The Hon. Justice Brian J Preston Chief Judge Land and Environment Court of NSW. Inaugural Distinguished Lecture on Environmental Law, The Environmental Commission of Trinidad and Tobago, 23 July 2008, Port of Spain Trinidad and Tobago.
- PRIMDAHL, J. R. & SWAFFIELD, S. R. 2010. Globalisation and agricultural landscapes : change patterns and policy trends in developed countries, Cambridge, UK; New York, Cambridge University Press.
- RACKEMANN, M. (2015) The Planning and Environment Court – Changing Faces, Longevity and a Stable Core. Queensland Environmental Law Association Conference Gold Coast, Queensland. Friday 15 May 2015.
- RACKEMANN, M. (2017) 29 Environmental Law and Management: How Green is my ECT? The challenge of impartial objectivity. Judge of the Planning and Environmental Court and District Court of Queensland.

- REED, P. M. & KOLLAT, J. B. 2012. Save now, pay later? Multi-period many-objective groundwater monitoring design given systematic model errors and uncertainty. *Advances in Water Resources*, 35, 55-68.
- REED, P. M. & MINSKER, B. S. 2004. Striking the balance: long-term groundwater monitoring design for conflicting objectives. *Journal of Water Resources Planning and Management*, 130, 140-149.
- REED, P., MINSKER, B. & VALOCCHI, A. J. 2000. Cost-effective long-term groundwater monitoring design using a genetic algorithm and global mass interpolation. *Water Resources Research*, 36, 3731-3741.
- REGIONAL SUITABILITY FRAMEWORKS FOR QUEENSLAND, Department of Natural Resources and Mines & Department of Science, Information Technology, Innovation and the Arts, 2013.
- REPEZ, F. & ATANASIU, M. 2019. The Environment-a “Silent Victim” of Armed Conflicts. *Acta Universitatis Danubius. Relationes Internationales*, 12.
- ROBERTS, P. & SHUTE, P. S. 2014. *Expert Evidence and Scientific Proof in Criminal Trials*, Florence, UNITED KINGDOM, Taylor & Francis Group.
- ROBERTS, P. 2016. *Expert evidence and scientific proof in criminal trials*. London, [England]; New York, New York;: Routledge.
- SCHEIDEL, A., DEL BENE, D., LIU, J., NAVAS, G., MINGORRÍA, S., DEMARIA, F., AVILA, S., ROY, B., ERTÖR, I. & TEMPER, L. 2020. Environmental conflicts and defenders: A global overview. *Global Environmental Change*, 63, 102104.
- SCHEIDEL, A., et al. (2020). Environmental conflicts and defenders: A global overview. *Global Environmental Change* 63: 102104.
- SCHLICKE, P. 2011. *Old Curiosity Shop, The*. Oxford University Press.
- SEDDON, N., et al. (2020). Understanding the value and limits of nature-based solutions to climate change and other global challenges. *Philosophical Transactions of the Royal Society B* 375(1794): 20190120.
- SELBY, H. (2010). When science comes to court. Issues arising in the presentation of expert forensic science evidence to the court *Australian journal of forensic sciences* 42(3): 159-167.
- SELBY, H. & I. FRECKELTON, I. (1989). The use and abuse of experts. *Law Institute Journal* 63(1-2): 31-35.
- SELBY, H. 1984. The Expert In Court: Educator or Puppet. *Legal Service Bull.*, 9, 11.
- SELBY, H. 2010. When science comes to court. *Australian journal of forensic sciences*, 42, 159-167.
- SINGH, P. K. & SAXENA, S. 2018. Towards developing a river health index. *Ecological Indicators*, 85, 999-1011.
- SMEDEMA, L. K., VLOTMAN, W. F. & RYCROFT, D. W. 2020. *Modern land drainage : planning, design and management of agricultural drainage systems*.
- SMITH, C. A. & THOMPSON, M. B. 2019. *PERFORMANCE CLAIMS IN FORENSIC SCIENCE EXPERT OPINION EVIDENCE*. University of Queensland Law Journal.
- SMITH, M. J., et al. 2011. *Geomorphological mapping: methods and applications*. Elsevier.
- SREBOTNJAK, T., CARR, G., DE SHERBININ, A. & RICKWOOD, C. 2012. A global Water Quality Index and hot-deck imputation of missing data. *Ecological Indicators*, 17, 108-119.

- SREEKANTH, J., et al. (2018). Probabilistic modelling and uncertainty analysis of flux and water balance changes in a regional aquifer system due to coal seam gas development. *Science of The Total Environment* 634: 1246-1258.
- STATE PLANNING POLICY (2017) Department of Infrastructure, Local Government and Planning, Queensland Government, 1 William Street, Brisbane Qld 4000, Australia.
- SULLIVAN, C., MEIGH, J. & LAWRENCE, P. 2006. Application of the Water Poverty Index at Different Scales: A Cautionary Tale. *Water International*, 31, 412-426.
- SUTHERLAND, N. (2011). The efficacy of joint reports in narrowing technical issues during litigation. *National Environmental Law Review* (1): 50-53.
- SUTHERLAND, N. & POWELL, B. 2000. Overview of the Queensland Acid Sulfate Soils Management Advisory Committee. Brisbane.
- TAL, A. (2019). Israeli Agricultural Innovation: Assessing the Potential to Assist Smallholders.
- TAN, P.-L., et al. (2012). Continued challenges in the policy and legal framework for collaborative water planning. *Journal of Hydrology* 474: 84-91.
- TAYLOR, A. M. & WILLIAMSON, J. G. 1994. Capital Flows to the New World as an Intergenerational Transfer. *Journal of Political Economy*, 102, 348-371.
- THE STATE OF QUEENSLAND (Department of Resources) (2021), Queensland Government, Brisbane, Australia. <https://qldspatial.information.qld.gov.au/catalogue/custom/index.page>
- THE STATE OF QUEENSLAND (Department of Resources) (2021), Queensland Government, Brisbane, Australia. [https://qldspatial.information.qld.gov.au/Queensland globe](https://qldspatial.information.qld.gov.au/Queensland%20globe)
- TIETENBERG, T. H. & LEWIS, L. 2020. Environmental economics and policy.
- TORRE, A., et al. (2021). Socioeconomic conflicts and land-use issues in context of infrastructural projects. *Asia-Pacific Journal of Regional Science* 5(1): 241-260.
- TUANA, N., SRIVER, R. L., SVOBODA, T., OLSON, R., IRVINE, P. J., HAQQ-MISRA, J., & KELLER, K. (2012). Towards integrated ethical and scientific analysis of geoengineering: A research agenda. *Ethics, Policy & Environment*, 15(2), 136–157
- TWIDALE, C. R. 2015. Australian Landforms Understanding a Low, Flat, Arid and Old Landscape.
- UNIFORM CIVIL PROCEDURE RULES (2005) - NSW Legislation <https://legislation.nsw.gov.au/view/html/inforce/current/sl-2005-0418#sch.7-sec.5>
- VALLES, S. A., PISO, Z. & O'ROURKE, M. 2019. Coupled Ethical-Epistemic Analysis as a Tool for Environmental Science. *Ethics, Policy & Environment*, 22, 267-286.
- VAN DER VYVER, C. (2013). Water poverty index calculation: additive or multiplicative function. *Journal of South African Business Research* 2013: 1-11
- VAN DER VYVER, C. (2013). A comparison of the traditional and simplified methods for Water Poverty Index Calculation. *Mediterranean Journal of Social Sciences*, 4, 229-229.
- VANDER HEYDEN, Y. & MASSART, D. L. (1996). Chapter 3 Review of the use of robustness and ruggedness in analytical chemistry. In: HENDRIKS, M. M. W. B., DE BOER, J. H. & SMILDE, A. K. (eds.) *Data Handling in Science and Technology*. Elsevier.
- VILLE, S. & MERRETT, D. T. (2020). Investing in a Wealthy Resource-Based Colonial Economy: International Business in Australia before World War I. *Business History Review* 94(2): 321-346.
- WALTON, M. 2012 An evaluation of the administrative law role of the Queensland Planning and Environment Court. <https://www.mondaq.com/australia/court-procedure/191326/an-evaluation-of-the-administrative-law-role-of-the-queensland-planning-and-environment-court>.

- WARREN, J., BELCHER, K. W. & LAWSON, C. 2008. *The agri-environment*, Cambridge, Cambridge Univ. Press.
- WARRICK, A. W. 2002. *Soil physics companion*, Boca Raton, Fla., CRC Press.
- WATER QUALITY AUSTRALIA (2011). *Australian Drinking Water Guidelines*. <https://www.waterquality.gov.au/guidelines>
- WATER QUALITY AUSTRALIA (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. 2018. Available online: <http://www.waterquality.gov.au/guidelines/anz-fresh-marine>
- WATER, G. C. 2006. *The Gold Coast Waterfuture Strategy*. Gold Coast, Gold Coast City Council & Gold Coast Water.
- WILK, J. & JONSSON, A. C. (2013). From water poverty to water prosperity—A more participatory approach to studying local water resources management. *Water Resources Management* 27(3): 695-713.
- WILLMOTT, W. 2010. *Rocks and landscapes of the Gold Coast hinterland*, Brisbane, Geological Society of Australia, Queensland Division.
- WINE, M. L., RIMMER, A. & LARONNE, J. B. 2019. Agriculture, diversions, and drought shrinking Galilee Sea. *Science of The Total Environment*, 651, 70-83.
- WITHERS, B. & VIPOND, S. 1988. *Irrigation: design and practice*, London, Batsford Limited.
- WURTZ, M., ANGELIAUME, A., HERRERA, M. T. A., BLOT, F., PAEGELOW, M. & REYES, V. M. 2019. A spatial application of the water poverty index (WPI) in the State of Chihuahua, Mexico. *Water Policy*, 21, 147-161.

Appendixes

Appendix 1 – Hume judgment

Supreme Court

New South Wales

**Medium Neutral
Citation:**

Hume v Patterson [2013] NSWSC 1203

Hearing dates:

8, 9, 10, 11, 12 October 2012; 25, 26, 27 March 2013

Decision date:

30 August 2013

Jurisdiction:

Common Law

Before:

Campbell J

Decision:

- 1) Judgment for the plaintiff on the question of liability with damages to be assessed;
- 2) The defendant to pay the plaintiff's costs of the determination of the separate question of liability forthwith after they have been agreed or assessed;
- 3) List the matter for directions before the Common Law Case Management Registrar at 9:00 am on Friday 27th September 2013.

Catchwords:

TORTS - negligence - plaintiff suffered catastrophic injury while participating in sport of wakeskating - determination of liability as separate question - whether defendant tow boat driver was in breach of his duty to exercise reasonable care for the safety of the plaintiff in the conduct of the activity - whether wakeskating dangerous recreational activity

Legislation Cited:

Civil Liability Act 2002 (NSW)
Civil Liability Amendment (Personal Responsibility) Act 2002 (NSW)
Evidence Act 1995 (NSW)
Uniform Civil Procedure Rules 2005 (NSW)

Cases Cited:

- Dovuro Pty Ltd v Wilkins [2003] HCA 51; 215 CLR 317
- Echin v Southern Tablelands Gliding Club [2013] NSWSC 516
- Fallas v Mourlas [2006] NSWCA 32; 65 NSWLR 418
- Falvo v Australian Oztag Sports Association [2006] NSWSC 17

- Imbree v McNeilly [2008] HCA 40; 236 CLR 510
- Jones v Dunkel (1959) 101 CLR 298
- Lormine Pty Ltd v Xuereb [2006] NSWCA 200
- Paric v John Holland Constructions Pty Ltd [1985] HCA 58; 59 ALJR 844
- Rootes v Shelton (1967) 116 CLR 383
- Wallace v Kam [2013] HCA 19; 87 ALJR 648
- Wyong Shire Council v Shirt (1980) 146 CLR 40

Category:

Principal judgment

Parties:

Martin Hume (plaintiff)
Timothy John Patterson (defendant)

Representation:

Counsel:
Dr AS Morrison SC and A Campbell (plaintiff)
GJ Parker SC (defendant)
Solicitors:
Gerard Malouf & Partners (plaintiff)
HWL Ebsworth (defendant)

File Number(s):

2010/379172

JUDGMENT

- 1 The plaintiff, Mr Martin Hume, suffered a catastrophic injury at around 2:10 pm on 18th November 2007 when participating in the sport of wakeskating on the Tweed River in northern New South Wales. As a result of a fall he suffered C6 tetraplegia. By statement of claim filed 15 November 2010 he brings a claim in negligence against Timothy John Patterson, the driver of the boat behind which the plaintiff was being towed at the time. A claim against the owner of the boat, was discontinued by notice filed 9 March 2011.
- 2 The substance of the plaintiff's claim, which the defendant denies, is that the defendant negligently drove the boat outside the navigation channel causing him to strike his head on a sandbar when he fell, resulting in his injury. This judgment determines the question of liability only by dint of an order made by Johnson J on 6th May 2011 under r. 28.2 *Uniform Civil Procedure Rules 2005* (NSW).
- 3 There is no dispute that the plaintiff's injury was caused by his head colliding with a firm, unyielding surface with his neck in flexion. The key issues are whether the incident occurred within the navigation channel; whether the plaintiff struck the riverbed, or an unseen submerged object; if the former, the depth; negligence and causation; and whether the plaintiff's injury resulted from the materialisation of an obvious risk of a dangerous recreational activity.

- 4 There is no question in this case that the driver of a towboat owes a duty of care to the towed wakeskater to exercise reasonable care in the control and management of the vessel to minimise the risk of personal injury. Equally there is no serious issue that if the defendant navigated the towboat outside the channel he was in breach of that duty because there the depth of the river was uncertain and variable, being foreseeably too shallow in places for the reasonably safe performance of the activity. It is otherwise if the activity took place wholly within the channel.

THE SPORT OF WAKESKATING

- 5 The sport of wakeskating is described in exhibit 7A, an expert report prepared by Jack Ellison, a professional boat driver, jet ski rider and water skier, in the following terms at [10]:

Wakeskating is a surface water sport which involves riding a wakeskate over the surface of a body of water whilst being towed by a boat. Wakeskating is an adaption (sic) of wakeboarding with similar boards except the most notable difference is that a wakeskate has no boots and a wakeboard has boots which keeps you bound to the board.

- 6 The 'wakeskate' board is described by Mr Ellison as follows at [13]-[15]:

13. A wakeskate board is manufactured from maple or from fibreglass... The top surface of the board is covered with a non slip, soft high-traction foam rubber material or grip tape similar to the surface of a skateboard. The foam rubber material provides some protection in an event that you fall off and also allows the rider to ride he wakeskate barefoot...

14. The shape of a wakeboard is isometric and can be ridden either forwards or backwards, the size of the boards varies from 100cm to 115cm long and approximately 40cm wide. A wakeskate usually does not have a sharp edge which limits aggressive edging and reduces the risk of a face plant.

15. The board has a small fin on either end to assist in tracking and manoeuvring of the board. The average size of the fin is 170mm and 12mm deep. The fins can be manufactured from aluminium, fibreglass or plastic.

- 7 The absence of foot straps, or boots, binding the skater to the equipment is one aspect of wakeskating which is of some significance as explained below.
- 8 Waterskiing, wakeboarding and wakeskating as recreational pursuits are undertaken at slower speeds than ski-racing and other professional or display events within the genre. Recreational waterskiing using two skis is conducted in the range of 20 to 35 knots per hour, a little faster on one ski, at 30 to 40 knots. Recreational wakeboarding is conducted at between 15 and 20 knots per hour and wakeskating within the same range, but perhaps 10 or 15 per cent slower (414.10 - .20T).

- 9 A wakeskate is, obviously, much wider than a waterski, and somewhat wider than a wakeboard. It is this additional surface area which permits the activity to be undertaken at a slower speed. The relatively low speed, and lack of binding, facilitates the type of stunts and tricks that may be undertaken, which are similar to the manoeuvres performed on a skateboard (413.35 - 414.5T).
- 10 Mr. Ellison expressed the opinion that the minimum safe depth for the conduct of wakeskating is 1.5 metres. This is based upon what might be referred to as practice in the field, rather than upon any formal risk assessment extending to the risk of a participant hitting the bottom (403.5 -30T; 414.35T; exhibit 7A [34]; exhibit 7C [15]).
- 11 Mr. Ellison is of the view that the risk of injury while riding a wakeskate is very low (exhibit 7A [71]; 400.10T). He is only aware of minor injuries having occurred by a falling skater "just hitting the water" (409.10T). He put this down to the relatively low speed at which the activity is conducted. He said, "the impact when you fall off a wakeskate and hit the water is a lot less than falling off while water skiing" (exhibit 7A [72]). As there are no bindings connecting the skater to the board, the risk of ankle or knee injury when falling is reduced, if not eliminated. He is unaware of any case of a wakeskater or wakeboarder falling and sustaining injury by striking the bottom (exhibit 7C [14]).
- 12 Mr. Ellison has great experience as a champion competitor and coach in various forms of water skiing including wakeskating. He has been a national wakeskating champion. He is a nationally accredited level two coach and has held appointments as coach of overseas national teams. He has also produced or directed a number of water sport "spectaculars" and co-ordinated water action events for film, including James Bond films.
- 13 His evidence is that it is very common for novice waterskaters to fall. Other evidence is to the effect that falling is an inevitable incident of the sport (Mr. Woodford at 191.10-22T)). Mr. Ellison said his experience of teaching people to wakeskate suggests that it is normal for the novice to fall up to ten times in a session of around 20 minutes (exhibit 7A [74]). At exhibit 7A [75] - [77] he said:

I have personally ridden a wakeskate over the past 10 years and have also coached many hundreds of people at my ski school on how to use a wakeskate. I have witnessed many people falling off the wakeskate while learning to do a deep water start and also while up and going. On average a person may take up to 10 attempts to successfully do a deep water start on a wakeskate.

I have never received any injuries myself while on a wakeskate and have never witnessed any serious injuries while I have been coaching people to ride a wakeskate.

I have witnessed injuries of people while riding a wakeskate and falling off which include: sprains, bruises and broken arms from becoming entangled in the water ski handle.

- 14 To avoid entanglement, the proper technique is simply for the rider to release the ski handle as soon as he or she commences to fall. The impression one forms from Mr. Ellisons's evidence, including his written reports, is that only minor injuries are involved in this variant of waterskiing, and that such injuries as do occur affect "only a very small percentage of the people that wakeskate" (exhibit 7A [80]). Notwithstanding his experience, he was of the view that there are inherent risks which include the following (exhibit 7A [81]):
- a) Running into something submerged below the water surface;
 - b) Risk of injury when falling off;
 - c) Risk of drowning when falling off;
 - d) Risk the boat could run over you;
 - e) Risk of falling off and becoming entangled in the ski rope.

I infer that some of these risks are theoretical, in the sense that on his evidence he has not witnessed incidents falling into at least some of the categories he identifies. He has no experience of catastrophic injury involving wakeskating and considers the prospect "highly unlikely" (exhibit 7A [82]). Indeed across the wide variety of waterskiing he knows of two serious spinal injuries only. One involved, I infer, a highly skilled performer in a display at Sea World who collided with a wharf whilst performing a misjudged ski jump. The other involved a ski-racing competitor. Ski-racing is performed at speeds of in excess of 100 miles per hour. The competitor fell at that high speed and suffered a spinal injury hitting the water (400.45 - 401.20T).

- 15 It is convenient to interpolate that I heard other evidence relevant to an evaluation of the risk of injury in this sport. Associate Professor Yeo, a leading medical expert in the field of spinal injury, gave evidence. Professor Yeo is, of course, a very eminent specialist. For the obvious reason that his expertise is in medicine, he was not able to distinguish amongst the many variants of waterskiing in giving evidence. He was unfamiliar with wakeskating (307.38T). He assumed that the plaintiff was waterskiing (307.4T). With great respect, then, in this case his evidence is not very pertinent to the question of risks arising from the sport. I formed the impression that most of the many serious spinal cord injuries seen by him involve motor vehicle accidents (304.35T). Most of the "water related accidents", which together amounted to five to eight per cent of the cases seen each year at the Spinal Unit at Royal North Shore Hospital, involve "diving into shallow water in pools where alcohol plays a part" (304.50T). He has experience of "waterskiers" who suffer traction injuries involving the brachial plexus, and he said (304.20T):

Not so much spinal cord injury and certainly not so much fracture [of the bony processes of the spine] unless you had an impact aspect to the fall from the ski such as into the bank.

- 16 Professor Yeo had sat in Court during some of the concurrent evidence of two biomechanical engineers. During his evidence he said he had been involved in some of the research involving inquiry into the risk of diving injury referred to by those experts. Professor Yeo described the plaintiff's injury as "a compression fracture of the vertebrae" of the cervical spine. He said of the injury (302.50T):

It was a high impact injury and it must have occurred in a fairly shallow depth of water.

Professor Yeo, understandably, was not able to better quantify "a fairly shallow depth of water", and, from the point of view of the spinal specialist, he said that to avoid the risk of spinal injury when diving "[the] water has to be as deep as the person is tall" (303.25T).

- 17 Dr. Andrew McIntosh and Dr. Tom Gibson are both highly qualified biomechanical engineers. In their joint report (exhibit T) they agreed that the plaintiff's "cervical spine injuries were caused by flexion and compression loading of the cervical spine most likely when his head contacted the bottom of the channel" (exhibit T, 2.1 [4]). I understood the reference to the bottom of the channel to be to the riverbed. I did not understand them to purport to say where in the river the accident occurred. Their opinion as to likely cause accords with Professor Yeo's.
- 18 Amongst other matters agreed was the following (exhibit T, 2.4[11]):

The experts agree that there are many factors that contribute to the causation of this injury including the impact velocity of the head, the neck posture on impact, the weight of the plaintiff, the type of surface impacted and vector of the impact force.

Of these, head speed at impact is critical (278.10 - .15T). The plaintiff is 183 cm tall and as at the date of the accident weighed 100 kg. As a sandy riverbed has some give, it may indent on impact, "capturing" the person's head and increasing the risk of neck injury (262.45-263.40T). The velocity vector is the angle, or direction, of travel of the person on impact (exhibit 6, p.13, Fig.6).

- 19 As Professor Yeo indicated - so too the biomechanical engineers - most of the research in this area is concerned with either an examination of the biomechanical forces relating to diving into swimming pools, or the review of the effects of diving injury. There is no question between the parties that this research has something to offer in the present discussion, as when the plaintiff fell from the wakeskate he pitched forward head-first, like a diver.

20 Applying the considerations expressed at [18] above, and additionally assuming: a horizontal speed of 15 to 20 knots, equivalent to the boat speed, or 7.7 to 10.3 metres/second; a maximum vertical speed of the plaintiff's head upon entry of 6.0 m/s based on falling from his standing height, rather than from the elevated position suggested by some of the evidence; and an angle of entry to the water of 30 to 45 degrees, the bio-mechanical experts agreed that for a person of the plaintiff's height and weight:

- (a) at 1 metre depth, the risk of catastrophic injury is high (272.35 - .50T);
- (b) at 1.5 metres, there is a substantial risk of catastrophic cervical spine injury (280.5 - .10T);
- (c) at 2 metres, the risk of such injury occurring is assessed as possible, but unlikely (273.5T; 279.25T);
- (d) at 3 metres, such an injury is "highly unlikely" to occur (273.20T - .35; 278.30; 279.25T).

21 As there is reference to it elsewhere in these reasons, I will set out my understanding of a deepwater start. Mr Ellison described this as a procedure for a beginner getting up out of the water on a wakeskate. The evidence before the Court, to which I will refer, indicates the plaintiff had not long completed such a manoeuvre at the time he fell. Mr Ellison described of a 'deep water start' in the following terms (exhibit 7A, [33]-[38]):

33. Before getting up, you should be able to do the following things:

- (a) Be comfortable in the water behind a boat
- (b) Be wearing a [personal floatation device]
- (c) Be able to pull yourself up from the sitting position

34. When preparing to get up, lay the board in the water perpendicular to the boat with the grip side up. Lay flat on your back perpendicular to the board and place your heels on the top of the board. Keep the rope in both hands around your belly button.

35. At this point, ask the boat driver to put the boat in gear, giving a little tension to the rope. This will help you stay balanced over the board as you will have something to hold on to. When the driver starts to give the boat a little more throttle, the board will turn up to the bottom of your feet and the pressure of the water will help to keep your feet on the board.

36. After the board lines up to your feet, relax and completely bend your knees allowing your knees to meet your chest. Keep the rope out in front of your knees. Once in this position, you are almost up as the boat can accelerate slowly up to a Wakeskating speed.

37. As you come out of the water you should be in a squatted position and the rope out in front of your knees. Now you should slowly stand up and apply the most pressure to the foot that will be in the back and push the ski rope handle in to your leading hip. You may also find it easier to let go with your back hand in order to get your body in the correct riding position.

38. Once you are up and gliding over the surface of the water the correct technique is to have equal pressure on both of your feet with your knees slightly bent.

22 I accept the evidence I have summarised in this section from [5]. I appreciate there may be a tension between the evidence of Mr. Ellison set out at [10], on the one hand, and the evidence of Professor Yeo at [16], and Dr. Gibson and Dr. McIntosh at [20], on the other. But it may be unsurprising that Mr. Ellison's practical view based upon his experience in the field differs from the approach of medical and biomechanical experts.

THE TOWING VESSEL

- 23 The towing vessel was a Cruise Craft "Resort" model powered by a Yamaha 225HP outboard motor. The defendant borrowed it from a friend, but he was accustomed to driving it. This model of boat is depicted in annexure C to exhibit 7A. Mr. Ellison rode in the boat as a passenger when the defendant drove it on the occasion of a view conducted for the purpose of Mr Ellison preparing his report. The actual vessel is depicted in various photographs in the body of his report. Close up photographs of the stern of the boat showing the ski pole for attachment of the towrope, the outboard motor, propeller and skeg are reproduced on page 28 of the report. The skeg is a fin-like protrusion below the propeller.
- 24 In exhibit 7D, Mr. Ellison said that a boat like that being driven by the defendant is able to operate "on the plane" in shallow water of approximately one metre in depth. By "on the plane" I understand him to mean at cruising speed with its hull in a more or less horizontal plane. It may be otherwise when the vessel is accelerating from a stationary start with its hull angled more towards the vertical because the outboard motor is lower in the water. In such a manoeuvre, in water of one metre in depth "there is an increased chance that the skeg would hit the bottom of the river" (exhibit 7D [4](b)). This could slow the boat "or even possibly stop it".
- 25 Unfortunately, Mr. Ellison did not take the opportunity to measure the boat driven by the defendant at his view. He sought to support this opinion by examination of a similar boat of a different make, sporting an identical motor. A photograph of this boat was annexed to the exhibit as annexure A. Objection was taken to the tender of the photograph, which I admitted provisionally.
- 26 After some cross-examination, I rejected the photograph annexed to exhibit 7D for reasons I expressed at 397.45 - 398.10T. I marked the photograph MFI 15. I was not satisfied that the evidence was relevant because it did not seem to me on the evidence of Mr. Ellison that I could be satisfied that there was sufficient similarity of hull dimension, manner of fixation of the outboard motor and the like to render the later inspected vessel a meaningful guide to the dimensions of the vessel involved in the accident. By this I mean that the evidence did not establish sufficient similarity between the two vessels: *Paric*

- 27 Moreover, Mr. Ellison made it clear that he had conducted recreational wakeskating at a depth of one metre (403.5T; 414.25 - .30T). The evidence in this case, which both parties accept, is that when the plaintiff fell the vessel was being driven at a speed of 15 to 20 knots. This is cruising speed for this type of activity and it is very likely that the vessel was "on the plane" rather than at a more vertical angle, even if, as seems to be the case, the plaintiff fell soon after he had completed a deep water start, and was upright on the wakeskate. It seems to me, therefore, that the vessel involved in the accident could have been navigated in water one metre deep at the time of the accident without difficulty. Whether it was in such shallow water is the central factual dispute in the case.
- 28 Notwithstanding that Mr. Ellison has wakeskated at a depth of one metre, indeed 900 mm, he was of the view that it was unacceptable for a tow boat driver to navigate a boat in the stretch of the Tweed River with which I am concerned outside the marked navigational channel, and in the near vicinity of the sandbar: (402.45 - 403.5T). The defendant gave evidence to the same effect (340.35 - 341.10T). He explained that there is shallow water over a sandbar and that there is the potential for the skater to hit the sandbar if the boat navigated outside the channel. I understood that the defendant meant there was the potential for the skater to fall and hit the sandbar rather than skate into it.

THE TWEED RIVER AT CHINDERAH BAY

- 29 Exhibit A is a boating map of the lower Tweed River and Cudgen Creek, published by New South Wales Maritime (now Roads and Maritime Services) and printed in August 2011. It depicts the stretch of the Tweed River, approximately one kilometre south of the Barneys Point Bridge, at Chinderah, where the accident occurred. The river at this location runs from south to north, flowing towards its mouth at Tweed Heads, on the New South Wales and Queensland border. The river bends at Chinderah, switching from running generally northeast to generally north. The accident occurred near this bend.
- 30 There is a channel marker at the bend, labelled number 021 on exhibit A ("the marker"). It marks the western extremity of the channel, approximately 75 metres from the eastern shoreline. The eastern shoreline consists of a rock retaining wall interrupted by a boat ramp. To the west of the channel marker the river opens up considerably into Chinderah Bay. Chinderah Bay is of variable depth because of the presence of an extensive sandbar. Between the eastern shoreline and the marker is a channel of deep water. Marker 021 is a starboard marker for vessels heading downstream.

- 31 Exhibit A is colour-coded. Differing shades represent the approximate depth of water in metres over different parts of the river. The depth of the water in the middle of the channel in this stretch of the river is indicated as being between five and ten metres. The depth scale indicates that the water becomes shallower as one moves west from the middle of the channel, past the marker, toward and over the sandbar. The chart indicates a depth of between two and five metres at the marker. The area to the west of the marker - that is the area outside of the channel - is indicated as an area of zero to two metres in depth.
- 32 Mr Carl Cormack, a Boating Safety Officer with Roads and Maritime Services, provided further evidence about water depth in this stretch of the Tweed River based on his investigation of this incident in the course of his duties. Mr Cormack visited the site at Chinderah on 8th March 2008 and used the depth sounder and GPS device on his boat to plumb various points around the river. He made a contemporaneous handwritten record of his results, which was tendered by the plaintiff without objection and marked exhibit B.
- 33 After examining a 'tide table' to make adjustments for the tidal conditions prevailing at around 2:10pm on 18th November 2007. His evidence is that the depths recorded on exhibit B would each have been 33 centimetres shallower when the plaintiff suffered his injuries.
- 34 The depths recorded by Mr Cormack, adjusted for the conditions prevailing on the day of the incident, are as follows (exhibit B, 19.35-20.5T):
- a) Around the marker, a depth of approximately 3.07 metres.
 - b) Fifteen metres to the west of the marker, a depth of approximately 1.67 metres, and
 - c) Thirty metres to the west of the marker, a depth of approximately 67 centimetres.
- 35 Mr Cormack agreed with senior counsel for the plaintiff that "on [these] soundings there was no shallower water than at least two to three metres until [he] got to the west of the buoy" (18.25T).
- 36 These soundings were supplemented by further evidence from Mr Cormack, taken on 10th October 2012 during a 'view' of the location of the incident, conducted pursuant to s 53 *Evidence Act 1995* (NSW). The purpose of the view was for better understanding of the evidence about tidal and other conditions prevailing at the time of the incident. Mr Cormack's evidence at that the time was the tide was ebbing. Low tide was an hour and a half away (208.5T); whereas at the time of the incident the tide was incoming,

approximately two and a half hours before high tide (207.50T). The net effect of this is that in order to replicate the depth of the water at the time of the plaintiff's accident it was necessary to add approximately 40 centimetres to the soundings obtained at the view (209.45-210.10T, 211.5T, 216.10-15T, 218.10T).

- 37 The measurements taken at the view, adjusted for the conditions prevailing on the day of the incident, are:

In the channel	Around the marker	West of the marker
At approximately the middle of the channel, a depth of 8.2 metres.	Approximately ten metres south (upstream) of the marker, a depth of 3 metres;	Approximately twenty metres west of the marker, a depth of 2.9 metres;
	Approximately ten metres south (upstream) of the marker a depth of 4.3 metres;	Approximately twenty metres west of the marker, a depth of 2.3 metres;
	Approximately five to seven metres north (downstream) of the marker, a depth of 5.3 metres	Approximately twenty five to thirty metres west of the marker, a depth of 2 metres;
		Approximately thirty five to forty metres west of the marker, a depth of 1.1 metres;
		At approximately forty metres west of the marker, a depth of 1.3 metres;
		Approximately forty five to fifty metres west of the marker, a depth of 0.7 metres.

- 38 The apparent inconsistencies in some readings in the table are due to the delay in recording the detail which altered as the vessel plied across the river. When counsel could not agree a second reading was taken. Moreover Mr Cormack's course on 8th March 2008 was susceptible of only approximate replication. Doing the best I can, I find that the evidence in exhibit B taken together with the evidence on the view supports the following depths:
- a) At the middle of the channel - 8.2m;
 - b) Around the marker - between 3m and 5.3m;
 - c) Twenty metres to the west of the marker - between 1.7m and 2.9m;
 - d) Thirty metres to the west of the marker - between 0.7m and 2m;
 - e) Forty metres to the west of the marker - between 1.1m and 1.3m;
 - f) Forty five to fifty metres to the west of the marker - 0.7m.
- 39 The depth of the water around the marker at 2:10pm on 18th November 2007 was between 3m and 5.3m.
- 40 This evidence establishes that the river becomes steadily deeper moving east from the eastern shelf of the sandbar, past the marker and towards the centre of the channel. This is consistent with the evidence of Mr Neil Sutherland, a hydrographer (370-372T). From his examination of cross sectional data recorded at two locations along the eastern shelf of the sandbar (which he referred to as the "shoal"), he concluded that "the shoal increases in depth relevantly at no more than 0.2 metres over a 5 metre distance" moving from west to east (affidavit of Neil Mathew Sutherland 31 October 2012 at [9]; see also drawing numbers 12 and 13 annexed thereto). Mr Sutherland gave further evidence based upon his examination of aerial photographs, which I accept, that the shoal has not moved materially since the incident (affidavit of Neil Matthew Sutherland 10 October 2012 at [12].)
- 41 Mr Sutherland also gave evidence that, based on experiments he conducted under tidal conditions comparable to those prevailing around the time of the incident, if the plaintiff drifted after falling from his wakeskate he would have done so in a south-easterly direction (371.5T; 372.20T), which, I interpolate, is away from, rather than towards, the sandbar.
- 42 There is a difference between the range of depths recorded by Mr Cormack, both in March 2008 (forming exhibit B) and on the view, on the one hand, and the depth scale depicted on exhibit A, on the other. The main difference is that water at least three metres deep was recorded around the marker in exhibit B and on the view, whereas exhibit A indicates that the minimum depth in this area is two metres. These differences may be explained by the

fact that exhibit A contains a disclaimer as to its accuracy and is therefore presumably to be used as a guide only. Moreover the river is tidal at Chinderah Bay and the chart doubtless takes account of variations due to the tide. The depth soundings taken by Mr Cormack have been adjusted in an attempt to replicate conditions at the time of the accident. Exhibit A does not cause me to alter the findings recorded at [38]-[39].

THE EVENTS OF 18 NOVEMBER 2007

- 43 The plaintiff's evidentiary statement, dated 28 March 2011, was admitted without objection and marked exhibit D. On the day of the accident the plaintiff had been working at the Coles supermarket at Tweed Mall. He finished his shift early and proceeded to the Chinderah Boat Ramp where he met the defendant and various other friends, including Bryan Woodford and Scott Nipperess, each of whom gave evidence. The plaintiff and his friends were all very young men at the relevant time. When the plaintiff arrived the defendant was navigating the boat to the ramp, where Mr Nipperess, and some others whom the plaintiff did not identify, alighted. The plaintiff got into the boat with Mr Woodford, as observer, and the defendant as driver. The trio entered the channel.
- 44 The plaintiff put on a lifejacket and entered the water to wakeboard. Mr Hume had experience wakeboarding, having undertaken the activity since the age of sixteen, including on at least ten occasions in the two years leading up to the accident, each time on the Tweed River (exhibit D at [10], [13]). From the stretch of river adjacent to the Chinderah boat ramp, the plaintiff was towed upstream (in a southerly direction) toward Murwillumbah, during which time he "got up on the wakeboard a few times... [and] came off a couple of times". At this point, the defendant turned the boat around, and headed downstream, in a northerly direction. Soon after, the boat stopped and the plaintiff switched from the wakeboard to a wakeskate. The plaintiff had never wakeskated before (exhibit D at [18]).
- 45 Heading downstream on the wakeskate, it was the plaintiff's evidence that he fell three times; on the first occasion "almost straight away", and on the second occasion, after "about 50 metres". And it was on the third occasion that he fell that he sustained his injuries. His account of the incident is in the following terms (exhibit D at [44]-[46]):

The last time that I got up on the board I didn't even have time to properly position my feet on the board before I came off. The board wasn't straight at the time I fell.

The boat hadn't yet hit full speed when the accident happened. I think it had moved about 15 metres from its start position when I came off the board.

The next thing that I remember is falling off the wake-skate. I fell forwards. I can't remember whether I let go of the rope as I fell, but I can remember getting a breath of air.

I don't recall going up in the air before I hit the water. My feet did leave the board and I went forward. Then I hit the water, head first.

- 46 The plaintiff's memory in the moments following the fall is understandably poor. He said that he did not know how deep he went below the water, whether he hit the bottom, or how long he was lying in the water before help arrived (exhibit D at [49]-[50], [52]). He said his first memory after falling was trying unsuccessfully to roll over, before being turned over in the water by his friend, Mr Woodford (exhibit D at [52], [54]).
- 47 He recalled that there were a number of people in the water assisting him, and that they were standing. He said the person who was near his head had water up to, about, his belly button (exhibit D [57]-[58]). He also gave evidence that when he was rolled over, he could see that he was "very close to the channel markers", but could not say whether he was "just inside the channel or just outside it" (exhibit D at [56]).
- 48 Police interviewed the plaintiff on 26th March 2008. Exhibit E is a transcript of the recording. His account with respect to the distance over which he travelled on the wakeskate before his third fall differs from the account given in exhibit D. In the course of the police interview, Mr Hume suggested that prior to the fall causing his injuries he was up on the board for "at least 100 metres". Counsel for the defendant, Mr Parker SC, cross examined the plaintiff about these varying accounts. Mr Hume's oral testimony was that while he could not recall the distance he had travelled, "it would be the longer distance rather than the shorter distance, because 15 metres would be barely enough to get you out of the water in wake skating" (35.35T). This must be correct.
- 49 As I have said, Mr Woodford was the observer on the boat at the time of the accident. The observer's chair faces the skater. His role includes reporting any difficulty experienced by the skater to the driver (exhibit 7A at p7). Mr Woodford's evidence in chief is recorded in two statements, one of which was dated 17th April 2011 and marked exhibit 4A, while the other was undated and marked as exhibit 4B. As Mr Woodford did not have a boating licence (exhibit 4B at [3]-[4], [8]), but nothing turns on this.
- 50 Mr Woodford said before the plaintiff's third fall, the defendant had throttled up to a speed of about fifteen to twenty knots. As I have said, this is cruising speed. After getting up onto the wakeboard for "about 5 seconds", the plaintiff suddenly fell forward (exhibit 4A at [2]). Mr Woodford then informed the defendant that the plaintiff had fallen off, at which point the defendant circled the boat back to pick him up. When the boat returned to the site of the fall, Mr

Woodford realised the plaintiff was still lying face down in the water. He then entered the water to assist him. On Mr Woodford's account, the water depth was "above [his] head height", and he said he recalled having to push off the bottom to try to support the plaintiff (exhibit 4A at [5]). He also said that he then "moved over to the shallower water so that [he] could stand up on the mud flats or sandbars", and that this occurred "before any other persons turned up to assist" (exhibit 4A at [6]-[7]).

- 51 Mr Woodford was cross-examined by Dr Morrison SC about the precise distance over which he had moved with the plaintiff before being able to stand. He agreed that he had not moved "any significant distance"(188.45-189.5T). He also agreed the accident occurred "very close to the sandbar", and that the sandbar was at least at waist depth a metre or two from where the plaintiff fell (190.35T). Mr Woodford however was of the belief that they were inside the channel marker when the accident happened (exhibit 4A at [9]; 189.15T). Whilst maintaining his belief that the accident happened "in the channel", he agreed that it happened "very close to the sandbar". He agreed with the cross-examiner that "nowhere [in the channel was] shallower than 3 metres". He seemed to accept that if that was so, the accident could not have occurred in the channel (190.5 - .20T).
- 52 Before me he maintained that he entered the water by diving, suggesting deep water. But in exhibit 4A he had said he "jumped in", suggesting shallower water. In the end I understood him to accept that he had jumped, not dived (193.5T).
- 53 I permitted some further examination in chief by reference to the aerial photograph attached to exhibit 4A. Mr. Woodford, for the purpose of his statement, marked in pen a rough straight line and a circle. The circle appears above a white dot, which is the depiction of the marker buoy in the photograph. It may be taken to indicate the area around the marker buoy. He said that the circle depicts "roughly where the accident happened", and the line "where the boat was travelling" (195.20 - .30T). In further cross-examination, he agreed that if the plaintiff fell off somewhere in the vicinity of the green channel buoy in accordance with his markings "it may well have been out of the channel" (196.15T).
- 54 In a sketch prepared by Mr. Woodford dated 24th November 2007, admitted into evidence without objection as part of exhibit "X" (it bears the pagination "88"), Mr. Woodford depicted himself and the plaintiff in the water as other boats arrived - no other persons are shown as being in the water - at a point to the west of the channel marker. Moreover, in his statement to the police on 26th November 2007, also forming part of exhibit "X" and paginated 85-86, Mr. Woodford said at [12]:

We really didn't move once Marto fell, we just stayed there until the emergency services arrived. We could have drifted but we were pretty much in the same spot.

- 55 The defendant, Mr Patterson, gave two written statements, dated 5th February 2008 and 30th June 2011. These were marked as exhibits 2 and 3 respectively. The defendant's account of the events leading up to the incident was in similar terms to that given by the plaintiff. The defendant said that he collected the plaintiff from the Chinderah boat ramp at approximately 2:00 pm on the day of the incident, and that he, the plaintiff and Mr Woodford had set out into the channel, with the plaintiff in tow riding a wakeboard. The plaintiff wakeboarded for a short time (approximately 20 minutes), falling occasionally, before switching to a wakeskate (exhibit 2 at [13]-[14]).
- 56 With respect to the sequence of events surrounding the fall causing the plaintiff's injuries, the defendant's evidence-in-chief is similar to that given by Mr Woodford in chief. Mr Patterson said that the plaintiff was attempting a 'deep water start' while he (the defendant) throttled the boat up to a speed of fifteen to twenty knots, moving downstream (exhibit 2 at [15]-[16], exhibit 3 at [2]). As the defendant was driving the boat and was facing away from the plaintiff, he did not see the accident occur, but was alerted to the fall by Mr Woodford. The defendant turned the boat around and when the boat arrived by the plaintiff's side, the defendant saw Mr Hume "face down in the water, panicking" (exhibit 2 at [17]). Mr Woodford then entered the water. In exhibit 2 he said Mr Woodford "dove in" and in exhibit 3, he "jumped in". It was Mr Patterson's evidence that Mr Woodford "could not touch the bottom of the river" (exhibit 3 at [4]). After the plaintiff reported an inability to feel any part of his body, Mr Patterson called an ambulance using his mobile telephone. He stayed on the phone, in the boat, until the ambulance arrived (exhibit 2 at [19]). The defendant said that whilst he and Mr Woodford assisted the plaintiff, the defendant from the boat, they drifted over towards the sand bank and eventually Mr Woodford was able to stand up in the shallower water once they were out of the channel (exhibit 3 at [5]). At this time, after the ambulance had been called and the trio had drifted to the sand bar, a person in another boat arrived at the scene and also entered the water, helping Mr Woodford keep the plaintiff stable in the water (exhibit 2 at [20]; exhibit 3 at [6]).
- 57 Mr Patterson gave evidence about the location of the boat at the time of the incident. In his second written statement he indicated that he was "clearly to the right of the channel marker" and "far from the edge of the channel" although he was "not... sure how far inside the channel marker" he was (exhibit 3, page 2). The defendant reiterated the substance of this evidence in cross-examination. He said he was "on the eastern side of the buoy" (160.45T) and "just to the left of the centre of the channel" (160.50T).

- 58 Under cross-examination, Mr. Patterson initially remained adamant that the accident happened whilst he was navigating in the channel just to the left of its centre (160.45 - 161.5T). He didn't observe any shallow areas in the channel nor did he observe any "debris or wreckage or hard object" (155.25 - .30T), submerged or otherwise, I interpolate. He agreed that his first statement, exhibit 2, made no reference to the plaintiff drifting to shallower water after Mr. Woodford commenced to rescue him (157.5T). Nor does this statement contain any suggestion that Mr. Woodford swam Mr. Hume across to the sandbank (158.25T). He agreed that in a sketch prepared by him on 24th November 2007 he drew the boats involved in Mr. Hume's rescue "clustered around in the vicinity of the channel marker" (170.10T; exhibit P). He denied that the accident happened over the edge of the sandbank or that Mr. Woodford was able to stand when he entered the water to assist the plaintiff (177.15 - .25T).
- 59 Mr. Patterson was cross-examined about his conversation on the telephone with the ambulance operator. He recalled some of the details but not all of them (179.10 - 181.35T). I am satisfied that the transcript, which was admitted as exhibit O, is accurate.
- 60 He told the operator that the accident happened "just about five minutes ago". I would not take this literally as the call was logged close to 2:15pm. It indicates the passing of a short period of time only. At that time, the defendant reported that there were two people in the water supporting the plaintiff. From this I infer that the call took place after Mr. James Myers, another boater, whose evidence is referred to below, arrived on the scene. The defendant said, "There are two blokes standing and holding him up about waist deep". The defendant confirmed that the persons supporting the plaintiff were able to stand up. A little later he said, "We've got half a dozen people here supporting him". The transcript contradicts the statement that other rescuers only arrived after the call to the ambulance. I accept it as reliable as to its details.
- 61 Early in the conversation, the defendant said to the operator:

I don't think we can get him across the river because we are on a sandbank away from the other side of the river ...

He reported "we are at least 100 metres across the river ... in the middle of the river". And a little later the following exchange occurred:

Operator: Just get somebody to support him but try not to move him as well. Is the water running anywhere or is he going anywhere?

[The Defendant]: No we are still sitting in the same spot. We are on the sandbar.

- 62 The defendant was recalled to give further evidence on 25th March 2013. Again he was adamant that he did not go outside the channel. He denied the suggestion going outside the channel is "exactly what happened on [the] day" (341.10T).
- 63 Notwithstanding his adamant answers, at 175.35 - 50T he became unable to say where he was in relation to the channel marker at the time the accident occurred, although he rejected the suggestion that "it must have happened outside the channel marker" (176.20T).
- 64 Mr James Myers gave a sworn statement dated 20th October 2011 with an annexed colour aerial map of the location of the incident marked with two coloured "X" symbols. Together these were marked exhibit M. A second evidentiary statement of 25 November 2007, taken by the police seven days after the incident occurred, was also tendered as exhibit N. James Myers (whom I will refer to as Mr J Myers so as to distinguish him from his son Adam, whom I will refer to below as Mr A Myers) was on board the first boat that came to assist the plaintiff and his friends at the scene. His son, Mr A Myers, and his son's friend Geoffrey Harrison were also in the boat. They were aged twelve and thirteen respectively.
- 65 Mr J Myers says he saw the boat towing the plaintiff approaching the bend at Chinderah prior to the accident, and formed the impression "that the driver was cutting the bend too close" (exhibit M at [6]). I repeat that the river turns from the north east to north at Chinderah Bay. Mr J Myers did not see the plaintiff fall from his wakeskate because he was manoeuvring his vessel into the Chinderah boat ramp - and therefore facing in the opposite direction - when the fall occurred. He says that when he was alerted to the fall by his son, and noticed that the plaintiff was not moving in the water, he "immediately turned [his] boat around and accelerated" toward the scene, arriving there "no more than a minute" later (exhibit M at [6], [9], [12]).
- 66 He says when he arrived at the scene of the fall he handed over control of the boat to his son and jumped in the water. His evidence is that the water was only "crotch to waist deep" on him, and "probably chest deep or lower" on Mr Woodford (125.50; 139.30T). He is 186cm tall (exhibit M at [13]). He also said (exhibit M at [17]):

The whole area in the vicinity of where we were was shallow. It never got above waist deep.

- 67 When questioned about whether the plaintiff's position in the water had changed during the time from when he first saw the plaintiff in the water to when he jumped in to assist, Mr J Myers denied that the plaintiff had moved in the water or had been moved by anybody else (125.20-.35T).

68 As I have said, Mr J Myers' statement includes a colour aerial map of the location of the accident. On this map are marked two "X" symbols, one in yellow indicating Mr J Myers' impression of the location of the boat in which he was travelling when he was alerted to the accident, and another in purple indicating the position on the river where Mr J Myers says the plaintiff fell, and at which Mr J Myers entered the water to help. The latter symbol places the location of the incident on the eastern edge of the sandbar. However under cross-examination Mr J Myers accepted that he could not identify the channel marker on the map and therefore could not say whether the position indicated as the site of the fall was inside or outside the marker (130.25T).

69 Mr A Myers, as I have noted above, is the son of Mr J Myers, and was in the boat with his father and a friend, Mr Harrison (whose evidence I will refer to below) when the plaintiff fell from his wakeskate. Mr A Myers was born on 18th April 1995, was twelve years old at the time of the incident and seventeen years old when he gave evidence at trial. His evidentiary statement of 13th January 2012 was marked exhibit G while his police statement of 25th November 2007 was marked exhibit H.

70 Mr A Myers noticed the boat towing the plaintiff approaching from approximately 60 metres away. In his statement he gave the following account (exhibit G at [5] - [6], [8] - [9])

I saw the skier do some turns in the wake [and] he then went outside the wake and came back in. When he went over the wake he got airborne and lost control, fell forward and hit the water at a fairly steep angle.

From where we were I could see the sandbar. The boat appeared to be on or near the edge of the sandbar.

When he jumped off the wake the front of his board caught [an] edge and he tipped forward quickly. He let go of the rope before he hit the water.

When he hit the water he went in head first with his hands in an upward position but only as far as the side of his head. He went into the water and suddenly stopped with his feet left sticking out of the water. He then floated to the surface and floated face down.

71 Mr A Myers said that the defendant then turned the boat around and returned to the location of the fall. He says that the observer, Mr Woodford:

...rushed to the back of the boat and jumped onto the duckboard. He sat down on the duckboard and tried to grab the person in the water. He then pushed himself off the duckboard and slid into the water and grabbed the skier around the chest and flipped him over. (Exhibit G at [10]).

72 In cross examination Mr A Myers agreed that he had mistakenly referred to the plaintiff as a "skier" and that it was more accurate to describe him as a "skater". However he rejected any suggestion he may have been mistaken about whether the plaintiff had gone outside of the boats wake and then come

back in (76.10T). He gave evidence that both the plaintiff and the towboat were "on the plane" and that the plaintiff then got airborne, about two feet off the water, at which point he fell at an angle of about 35 to 40 degrees (74.40-76.5T). Mr A Myers disagreed with the suggestion that he may have been mistaken about the boat from which the plaintiff was being towed having a duckboard (81.20T). He said he could not remember seeing the navigation marker (77.45T; 82.10T).

- 73 In his statement, Mr A Myers said the water was waist deep on the bodies of both Mr Woodford and Mr J Myers (exhibit G at [13]). When questioned about these matters, Mr A Myers confirmed that the water was "probably just above [Mr Woodford's] waist", and "waist deep" on his father (68.25-30T). Mr A Myers also rejected the suggestion that the plaintiff's position had moved more than one or two metres from the time he fell to the time his fathers boat arrived, or that Mr Woodford moved the plaintiff over to the sandbar (68.35-40).
- 74 Mr Geoffrey Harrison, as I have said, was also on board Mr J Myers' boat. He was born on 24th February 1994. He saw a wake boarder coming towards him on the river. He says the rider fell from his board, went three feet in the air, hit the water and then lay face down floating in the water, not moving (exhibit J at [5]-[7]).
- 75 In exhibit K, a statement made on 25th November 2007, he put the sequence of events differently (at paragraph [6]). The wakeboarder "getting air" preceded him falling. In cross-examination (at 108.10 - .20T) he sought to clarify his evidence by explaining that the wakeboarder crossed to the outside of the wake and "as he was coming back he got air". Then he fell. He said he entered the water at an angle of about 45 degrees (109.12T). In his statement he described the injured person as a wakeboarder. He knew the difference between a wakeboard and a wakeskate, but at the time of the accident he assumed that the plaintiff was on a wakeboard.
- 76 Mr. Harrison said that when he got into the river to help with the rescue the water "was up to my belly button" (exhibit K at [9]). He is now aged eighteen and six feet and four inches tall. At age thirteen was shorter.
- 77 In chief, Mr Harrison marked exhibit L with an "X" symbol to indicate where the accident happened. The symbol puts the location of the accident west of the marker, well over the sandbar, out from the boat ramp. This puts the scene of the accident in a place similar to that indicated by the mark made by him on exhibit "1", an out of court representation by him (112.5-20T), and in a similar location to Mr J Myers mark.
- 78 Mr. Harrison was clearly confused about some details. In evidence, as I understood him, he indicated the water was deeper than he had suggested in his statement (95.20 - 91.20T). Moreover he had the plaintiff travelling

upstream (south), not downstream (north), immediately before the accident (114.50 - 115.17T). This is clearly incorrect.

- 79 It was suggested to him that he may have been mistaken as to the person he was observing, which proposition he rejected: (108.45T).
- 80 Mr. A. Myers and Mr. Harrison were, as I have said, twelve and thirteen years old respectively at the time of the accident. Because of their youth and the effluxion of time since the accident, I am of the view they are clearly wrong in some respects. They are clearly wrong about the plaintiff being airborne immediately prior to his fall. Neither the plaintiff nor Mr. Woodford say that, and I think in this respect their account is more likely to be reliable. Obviously, they were directly involved in the action and the boys were some distance away. Moreover, the plaintiff was a novice at wakeskating and there is no suggestion he had progressed to tricks or stunts on his third attempt on his first day of trying a new sport. As I have said, Mr. Harrison clearly has the direction of travel wrong. These considerations, however, do not lead me to conclude I should reject the whole of the evidence of both of them.
- 81 The Plaintiff's mother Mrs. Barbara Hume was called to give evidence, and, subject to some objections to part of paragraph 12, was admitted into evidence as exhibit F. She was not cross-examined. The significance of her evidence is that when stroking the plaintiff's head in hospital about a week after the accident she noticed river sand and grit in his hair and scalp. She described it as "not fine beach sand". As a mother her concern was about hygiene, as it occurred to her that her son's hair had not been washed at all in hospital. She raised this with one of the nurses who explained that they had been unable to shower the plaintiff until a surgical scar on his neck started to heal. I confess to having been initially sceptical about this evidence, not because I doubted Mrs. Hume's sincerity, but because I wondered about her ability to discern between river and beach sand. But her evidence fits in with the agreement between the biomechanical engineers as to the mechanism of injury and their evidence about a sandy river bottom "giving" and "capturing" the skull of a person colliding with it in the manner hypothesised by them in this case. As I say her testimony was not challenged.
- 82 Mr. Scott Nipperess gave evidence in the defendant's case. He had been in the boat at the time the plaintiff joined it at the Chinderah Boat Ramp. Mr. Nipperess and two others disembarked to go for lunch. Mr. Nipperess said when he became aware of the accident he swam out to where the plaintiff was being supported and found that it was in water so deep that he could not touch the bottom (exhibit 5 at [14] - [17]). His evidence is that he assisted swimming the plaintiff over "to the sandbank so that we could at least stand up".

- 83 The difficulty with this evidence is that he says (exhibit 5 at [11]) that he was made aware of the incident by the ambulance arriving at the boat ramp car park. By then, on any version, those assisting the plaintiff were standing in shallow water (199.40 - 200.15T). I am not able to accept his evidence.

WHERE IN THE RIVER DID THE ACCIDENT OCCUR?

- 84 The question may be refined as whether I am persuaded on the balance of probabilities that the accident happened outside the channel in relatively shallow water over the sandbank. To answer this question favourably to the plaintiff, I would need to be satisfied, as Dixon CJ remarked in *Jones v Dunkel* (1959) 101 CLR 298 at 304, to the following standard:

In an action of negligence for death or personal injuries the plaintiff must fail unless he offers evidence supporting some positive inference implying negligence and it must be an inference which arises as an affirmative conclusion from the circumstances proved in evidence and one which they establish to the reasonable satisfaction of a judicial mind. It is true that "you need only circumstances raising a more probable inference in favour of what is alleged". But "they must do more than give rise to conflicting inferences of equal degree of probability so that the choice between them is mere matter of conjecture". [Citation omitted].

- 85 The defendant submitted that I could not be so affirmatively satisfied that the accident happened outside the channel because:

(a) According to exhibit A, the channel, even if only at its western extremity, is as shallow as 2 metres in depth; and

(b) The biomechanical evidence is to the effect the injury could have occurred in a depth *greater* than 2 metres.

- 86 I have already said at [39] and [42] that I prefer the evidence of the depth readings taken by Mr. Cormack in March 2008, and on the view, to exhibit A. On this basis, the depth drops from 2 metres, 30 metres west of the marker, to a range of 1.1 to 1.3 metres, 40 metres the west of the marker. Nowhere in the channel in the vicinity of the marker is less than 3 metres in depth. At this depth a catastrophic spinal cord injury caused by the fracture of C6 is highly unlikely to occur, on the assumptions expressed at [18] and [20].
- 87 I find that each of the assumptions made by the biomechanical engineers has been made good by the evidence. As I have said, I reject that part of the evidence of Mr. A. Myers and Mr. Harrison that the plaintiff fell from an elevated height because he was airborne when re-crossing the wake. Rather, I find that he remained inside the wake; that the fall occurred soon after he had completed his deep water start; that he was standing erect; and that he

pitched forward as though diving when both he and the tow boat were on the plane at a cruising speed of 15 to 20 knots per hour. I accept the evidence of Mr. Harrison that he entered the water at about a 45-degree angle. This is similar to the assessment of Mr A Myers. I have already said, at [18], that the plaintiff was 183 centimetres tall and weighed 100 kilograms.

- 88 I reject the submerged object hypothesis. Whilst it remains a theoretical possibility, there is simply no evidence giving it any credence whether from the defendant or anyone else. Moreover, it does not tally with Mrs Hume's evidence about the sand in her son's hair, which I accept. As I said at [81] this evidence fits in with the agreed biomechanical evidence on the probable mechanism of injury. (See [90] below.)
- 89 Further, despite discounting some of Mr. A. Myers evidence because of his youth as at November 2007, I am satisfied that his somewhat graphic description of "landing head first into the sandbar" (exhibit H [6]) is the type of detail likely to stick in the mind, especially if one adds the further consideration that the plaintiff's feet were left sticking out of the water (exhibit "G" [9]). He repeated this in his oral testimony (77.15T). Despite a searching cross-examination about various details of the events leading up to the accident, it was put in general terms only that Mr. A. Myer was "substantially mistaken" (85.5T). He was not specifically challenged about seeing the plaintiff's feet sticking out of the water except at 77.12T, when it was put "*then* you saw him with his feet sticking out, is that right?" - my emphasis - to which the witness responded "yes". But I would not dissociate the evidence of the plaintiff's feet protruding from the water from the preceding statement of the plaintiff's head connecting with the sandbar. The evidence spoke of a single event, not a strike followed by a rebound.
- 90 This evidence, which I accept, to my mind, and it is largely a matter of impression, supports the case that the plaintiff fell in water of between 1.1 and 1.3 metres in depth. At such a depth, the risk of catastrophic injury to the cervical spine is between "high" and "substantial" ([20], above). And that joint opinion of the biomechanical engineers provides strong circumstantial evidence supporting the plaintiff's case that he fell in shallow water. So too does Professor Yeo's evidence recounted at [16] above, even if expressed in terms of some generality.
- 91 Mr. J. Myer's evidence of the water being "shallow" and "about waist deep", which I accept, is also consistent with this conclusion. This is supported by Mr. Harrison's police statement (exhibit K) and by Mr. A. Myer's police statement (exhibit H). These estimates, given a week after the accident, for that reason, are likely to be reliable.

- 92 My preference for this body of evidence means that I reject that part of the evidence of Mr. Patterson, Mr. Woodford and Mr. Nipperess suggesting the accident happened in deep water. The evidence of Mr. Patterson and Mr. Woodford was to the effect that the accident occurred in the channel. Mr. Nipperess did not mention the channel but, inferentially, that is what he meant.
- 93 The evidence of Mr. Nipperess can be put to one side safely. His evidence is so inconsistent with all of the other evidence for the reason given at [83] that he must be wrong.
- 94 As I have explained above at [51] - [54], Mr. Woodford made significant "concessions" in cross-examination. I was left with the impression that he effectively accepted that the plaintiff fell outside of the channel "very close to the sandbar". His contemporaneous accounts recorded at [54], and as depicted in the sketch dated 24th November 2007 and in his police statement of 26th November 2007, support the conclusion that, at least on the balance of probabilities, the accident happened over the sandbar in relatively shallow water. I appreciate that the sketch depicts the aftermath of the accident, and locates it west of, but close to, the marker buoy. I have set out my findings about depth above (at [38]-[39]). One needs to travel 20 metres to the west of the marker before the depth falls below 3 metres. At that point, it is either unlikely or highly unlikely that the plaintiff could have broken his neck. It needs to be borne in mind that the sketch is just that, a sketch. It is not drawn to scale. The statement "[w]e really didn't move once Marto fell", taken with the other evidence which I accept, supports the conclusion that the depth where "Marto fell" was such that those assisting the plaintiff were comfortably able to stand. This suggests to me a depth of no more than 1.1 to 1.3 metres, probably at the lower end of that range. Understood in this way, Mr. Woodford's evidence in fact supports the conclusion for which the plaintiff contends.
- 95 I appreciate that this puts the place where the plaintiff fell 40m west of the marker and the plaintiff remembers being very close to the marker while waiting for the ambulance. "Very close" is a relative term and I am not satisfied, given what he had just gone through that his impression about this displaces the accounts of the other witnesses I have accepted.
- 96 I turn now to the evidence of the defendant. I should say that Mr. Patterson, making every allowance for his comparative youth, was often a very defensive witness. At times he was combative and frequently suspicious of the cross-examiner's motives. He said he did not understand questions, which, at least at times, I considered straightforward. Perhaps these aspects of demeanour are understandable. After all, as I have said, he is a young man, and his conduct on the day was being thoroughly scrutinised. His strong and precise

evidence that he was navigating the boat to the left of the centre of the channel did not survive cross-examination, as I have recounted at [63]. In the end he was unable to say where the vessel was in relation to the channel marker at the time the accident occurred, notwithstanding that he rejected any suggestion that he was outside the channel.

- 97 Mr. Patterson's evidence about where he was in the channel at the time the plaintiff was injured is so far out of step with the other evidence I find acceptable that I must reject it.
- 98 The version that the boat was just to the left of the middle of the channel at the time the plaintiff fell did not accord with the probabilities. As I have found at [38], around its middle, the channel is 8.2 metres deep. The channel is about 75 metres wide, and accordingly, a course just to the left of it would be between, say, 45 and 50 metres from the eastern shore, which, on anyone's version, if Mr Patterson is correct, would have been substantially closer to the location of the accident than the shallow water over the sandbar where the plaintiff and those assisting him waited for the ambulance. That place itself would be about 75 metres west of the course the defendant says he was following. It would have been necessary to "swim" the plaintiff there from the deep water. But it would have been much easier to take him to the eastern bank than out to the sandbar. Absent a large submerged object, the plaintiff's injury could not have occurred in eight metres of water. As I have already found there is no foundation in the evidence at all to support that hypothesis (even accepting, as I have, that it is at least theoretically possible). It is not possible to overcome these logical difficulties simply by postulating that perhaps the defendant was somewhat out and that he was probably following a course at the western extremity of the channel. This requires me to speculate, in effect to guess, in the absence of any evidence supporting that theory. I accept that the onus of proof lies upon the plaintiff and never shifts. Further, as I have already found, even at its extremity, the channel was between 3 and 5.3 metres deep. It is highly unlikely that the plaintiff's injury would have occurred in water of that depth, once again absent the submerged object hypothesis.
- 99 Another current running through the defendant's case is that the plaintiff fell in relatively deep water and drifted to shallow water whilst waiting for the ambulance to arrive. Assuming in the defendant's favour for the purpose of the argument that the relatively deep water was within the channel, this involves the hypothesis that the plaintiff effectively drifted due west to the shallow water over the sandbar. Such a hypothesis is inconsistent with the evidence of Mr. Sutherland, which in this regard, as I have said above (at [41]), was that the prevailing "drift" was in a south-easterly direction (371.5T; 372.20T). Despite the benefit of an adjournment for that purpose, the

defendant did not call in the evidence to contradict Mr. Sutherland's evidence, and I accept it.

- 100 The defendant submitted that I could not rely upon the evidence of Professor Yeo to work out the location of the accident because the opinions expressed by him, which I have recorded, went beyond his specialised knowledge. It was further argued that without his evidence the opinions of the biomechanical engineers were worthless because they depended in part upon the availability of reliable medical information. The purport of this argument, if accepted, was that it was impossible to determine where - either inside or outside the channel - the plaintiff's accident occurred. This did not depend upon acceptance of the submerged object hypothesis because a body of evidence, specifically exhibit A, supported the proposition that the depth of the channel in places was as shallow as two metres and at that depth it was possible for the plaintiff to suffer his catastrophic injury.
- 101 It is true enough that Professor Yeo did not examine the original radiographic material, but at the same time there was no serious dispute about the nature of the plaintiff's injury. I did not understand it to be disputed that the plaintiff suffered a catastrophic spinal cord injury because the fracturing C6 vertebrae compressed the spinal cord. I did not understand it to be disputed that the likely mechanism of this fracture was the application of a significant compressive force through his head when his neck was in a position of significant disadvantage because it was bent. I did not understand it to be disputed that the origin of such a force was the head striking a more or less immovable object at speed. A submerged object or the bottom would equally suffice.
- 102 I accept, as I have recorded above, that Professor Yeo has no specialised knowledge in relation to the injurious incidents of wakeskating. He does have relevant expertise acquired through experience with diving injuries and, as I have said, the plaintiff's injury has much in common with injuries of that type. Moreover, in my judgment once it is known that the plaintiff suffered a broken neck, and the aetiology of that injury is identified in the general terms I have described at [100], the mechanical engineers are well qualified to express opinions about the possible mechanisms by which it may be caused.
- 103 In determining the likely location of the accident it is not appropriate to consider the expert evidence in isolation from its context amongst the whole of the evidence, both direct and circumstantial. The finding I have made is based upon my consideration of all of the circumstances established by the evidence to my satisfaction by application of the principle expressed by Dixon CJ in *Jones v Dunkel*.

104 I am comfortably satisfied on the balance of probabilities that the plaintiff suffered catastrophic injury when he fell whilst wakeskating over, or close to, the sandbar to the west of the channel at Chinderah Bay in shallow water of approximately 1.1 metre in depth. This is what I mean later when I use the expression "over or close to the sandbar".

THE QUESTION OF NEGLIGENCE

105 As I have previously indicated, it is not contested that the defendant boat driver owes the plaintiff wakeskater a duty of care recognised by the law of negligence, the content of which is to exercise reasonable care for the safety of the plaintiff in the conduct of the activity: *Rootes v Shelton* (1967) 116 CLR 383.

106 The key question is whether in the circumstances as I have found them the defendant is guilty of negligence. That question is to be determined by reference to the provisions of Part 1A *Civil Liability Act 2002* (NSW), and in particular sections 5B - 5E.

107 The central provision concerning the question of breach, of course, is s.5B, concerned with negligence that consists of the failure to take precautions against a risk of harm.

108 The parties essentially agree that the relevant risk of harm for the purpose of s.5B in the present case is the risk of the plaintiff suffering appreciable, rather than transient, physical injury from falling and colliding with the bottom of the river: defendant's submissions, page 13 [65]; plaintiff's submissions, page 13 [43].

109 The relevant precaution contended for was navigating the towboat in water known to be deep enough for the purpose of minimising the risk of harm. On the facts now known, the precaution could have been satisfied by navigating in, or within about 20 metres (to the west) of, the channel. From his evidence the defendant may not have known the depth outside the channel and might have expected it to be variable. Accordingly the relevant precaution may be taken to call for navigation within the channel.

110 I bear in mind that it is necessary to consider the essential requirements for a finding of breach established by s.5B(1) prospectively, as though the plaintiff's accident had not occurred. It would be erroneous in a fundamental way to employ the benefit of hindsight. Moreover, the standard of care is the standard of a reasonable person in the position of the defendant: *Imbree v McNeilly* [2008] HCA 40; 236 CLR 510.

111 In the present case the standard of care must be formulated by reference to

the attributes of a reasonable recreational boat driver engaged in wakeskating. The usual knowledge of spinal specialists or even biomechanical engineers cannot set this standard: *Dovuro Pty Ltd v Wilkins* [2003] HCA 51; 215 CLR 317 at 369 [163] per Hayne and Callinan JJ. It may also be debatable whether the expertise of a professional like Mr. Ellison is attributable to the reasonable recreational participant. However that may be, in light of the evidence of Mr. Ellison at 402.45 - 403.5T, and of the defendant at 340.35 - 341.10T, it may be accepted that the identified risk of harm was foreseeable because the defendant knew that there was shallow water over the sandbar and that there is the potential for injury to a wakeskater who falls and hits the sandbar if the boat is navigated over, or close to, it. It may be that, given Mr. Ellison's evidence, a reasonable recreational boat driver would not expect catastrophic injury to be suffered by a person hitting the bottom. But weighed objectively the relevant risk of harm is not insignificant when one considers the degree of likelihood of a falling skater hitting the bottom and suffering appreciable not transient injury. Were it permissible, as it is not, to have regard to the usual knowledge of the experts in evaluating this factor clearly, in some circumstances anyway, catastrophic injury is on the cards.

112 By reference to the relevant matters set out in s.5B(2) I am satisfied that in the circumstances a reasonable recreational boat driver would have taken the precaution of conducting his part of the activity of wakeskating, i.e. driving the tow boat, wholly within the marked channel. In my judgment, the probability that the harm would materialise if the precaution were not observed is relatively high. The defendant's evidence acknowledged that outside the channel the water could be shallow and the wakeskater could fall and hurt himself (340.35 - 341.12T). The facts in the present case clearly indicate that the harm suffered could be very serious indeed. But eschewing hindsight, it is implicit in Mr. Ellison's view that 1.5 metres is a safe depth, that less is unsafe. The defendant accepted so much: submissions page 13[64] - 14[67]. The burden of taking precautions to avoid the risk was slight, and involved no more than remaining within the channel. One may well accept the high social utility of participation in healthy, recreational sporting events. But the risk of harm in this case was not created by participation in the sport of wakeskating per se; rather conducting the activity in shallow water - or at least water of unknown and variable depth - over, or close to, the sandbar, created it.

113 In my judgment the defendant was negligent in failing to navigate the boat wholly within the channel whilst towing the plaintiff.

114 None of the principles referred to in s.5C of the Act have any impact on the outcome of the present case.

CAUSATION

115 The onus of proving every fact necessary to establish that the negligence of the defendant caused his injuries lies, and remains, with the plaintiff: s.5E *Civil Liability Act 2002*.

116 By s.5D the establishment of legal causation depends upon proof that the negligence of the defendant was a necessary condition of the occurrence of the injury suffered by the plaintiff, and that it is appropriate for the scope of the defendant's liability to extend to that injury: s.5D(1). In the circumstances of the present case, no question arises under s.5D(2) or 5D(3).

117 The defendant did not contest causation seriously, if the elements of breach were established (submissions page 18 [89]). But it is appropriate that I record my findings.

118 The plaintiff fell and struck his head on the sandbar at a depth of about 1.1 metres, and this mechanism of injury subjected his cervical spine to axial compression. The plaintiff's injury would not have occurred but for the defendant's conduct in navigating the boat over or close to the sandbar. To put it another way, had the defendant remained inside the channel where the depth was at least 3 metres, I am satisfied on the balance of probabilities that the plaintiff's injury would not have been sustained. At that depth on the primary facts I have found the risk of catastrophic injury was highly unlikely to materialise and this is a material circumstance. Unlike breach, questions of causation are determined with the benefit of hindsight. The purpose of the inquiry is to ascertain what happened and why. Even had the boat been navigated at the western extremity of the channel, the depth is such that no appreciable injury would have occurred. I am satisfied on the balance of probabilities that but for the failure of the defendant to take the precaution of remaining in the channel, the plaintiff's injury would not have occurred.

119 So far as the scope of the defendant's liability is concerned, a unanimous High Court of Australia in *Wallace v Kam* [2013] HCA 19; 87 ALJR 648 at [22] said the following:

In a case falling within an established class, the normative question posed by s 5D(1)(b) is properly answered by a court through the application of precedent. Section 5D guides but does not displace common law methodology. The common law method is that a policy choice once made is maintained unless confronted and overruled.

120 Their Honours went on to explain at [26] that:

.... the scope of liability for the consequences of negligence is often coextensive with the content of the duty of the negligent party that has been breached. That is because the policy of the law in imposing the duty on the negligent party will ordinarily be furthered by holding the negligent party liable for all harm that occurs in fact if that harm would not have occurred but for breach of that duty and if the harm was of a kind the risk of which it was the duty of the negligent party to use reasonable care and skill to avoid.

121 *Rootes v Shelton*, and to some extent *Wyong Shire Council v Shirt* (1980) 146 CLR 40 at 47 - 48, establish that the present case falls within an established category of liability. I have held that the harm suffered by the plaintiff would not have occurred but for the defendant's breach in navigating the vessel outside the channel in shallow water over, or close to, the sandbar. The personal injury suffered by the plaintiff was of a kind, the risk of which it was the duty of the defendant to use reasonable care and skill to avoid. It is appropriate in my judgment that legal responsibility for the consequences of his breach of duty should be attributed to the defendant.

DANGEROUS RECREATIONAL ACTIVITY

122 The findings I have made so far are not sufficient to dispose of the case because the defendant invokes the provision of s.5L of the Civil Liability Act 2002, which are in the following terms:

- (1) A person (***the defendant***) is not liable in negligence for harm suffered by another person (***the plaintiff***) as a result of the materialisation of an obvious risk of a dangerous recreational activity engaged in by the plaintiff.
- (2) This section applies whether or not the plaintiff was aware of the risk.

Obvious risk is defined by s.5F:

- (1) For the purposes of this Division, an ***obvious risk*** to a person who suffers harm is a risk that, in the circumstances, would have been obvious to a reasonable person in the position of that person.
- (2) Obvious risks include risks that are patent or a matter of common knowledge.
- (3) A risk of something occurring can be an obvious risk even though it has a low probability of occurring.
- (4) A risk can be an obvious risk even if the risk (or a condition or circumstance that gives rise to the risk) is not prominent, conspicuous or physically observable.

And dangerous recreational activity is defined by s.5K

dangerous recreational activity means a recreational activity that involves a significant risk of physical harm.

obvious risk has the same meaning as it has in Division 4.

recreational activity includes:

- (a) any sport (whether or not the sport is an organised activity), and
- (b) any pursuit or activity engaged in for enjoyment, relaxation or leisure, and
- (c) any pursuit or activity engaged in at a place (such as a beach, park or other public open space) where people ordinarily engage in sport or in any pursuit or activity for enjoyment, relaxation or leisure.

123 There is now a significant body of jurisprudence concerning the meaning and operation of s.5L. It might be fairly said that s.5L is a signature provision of the reform of the law of negligence introduced by the enactment of the *Civil*

124 In *Fallas v Mourlas* [2006] NSWCA 32; 65 NSWLR 418 at [123] Basten JA said:

...s.5L assumes there would otherwise be liability for negligence, and provides an immunity. The provision differs from the general law principle of voluntary assumption of risk because it does not require that the plaintiff had knowledge and appreciation of the risk which was accepted [citations omitted].

His Honour also held it was for the defendant to establish the elements of the immunity from liability: "accordingly, the principle that he or she who 'substantially affirms an issue must prove it' operates (citation omitted)" *Fallas* at 439 [122]. There were some differences amongst the Judges in *Fallas*, but all agreed with the reasons of Basten JA about where the onus lies. See also *Lormine Pty Ltd v Xuereb* [2006] NSWCA 200 at [31].

125 In *Xuereb*, Mason P pointed out that the question of whether a defence under s5L has been established must be "determined objectively and prospectively". The starting point must be determining the nature of the activity actually engaged in by the plaintiff, especially where, as here, it is of an ad hoc, as opposed to organised, type: *Fallas* at 426 [43] per Ipp JA; 432 [92] per Tobias JA; [144] - [148] per Basten JA. There is no doubt that the activity of wakeskating engaged in by the plaintiff was a recreational activity, being a sport as well as an activity engaged in for enjoyment and leisure, if not relaxation. The central and primary question, however, is whether it is a dangerous recreational activity. To my mind that central question cannot be considered without first determining the scope of the recreational activity at the appropriate level of specificity required by the passages from *Fallas* I have referred to.

126 As a starting point, viewed objectively and prospectively, the plaintiff was proposing to engage in wakeskating in the relatively deep water in the channel on the eastern side of the Tweed River at Chinderah Bay. Bearing in mind that the onus lies upon the defendant, it was never suggested to the plaintiff that he and the defendant arranged that the activity would extend beyond the channel into the shallow water over, or close to, the sandbar. Indeed, the defendant's case strenuously eschewed this proposition. That I have rejected the defendant's evidence as to where he actually was at the time of the accident does not affect the assessment of the specific activity the plaintiff was engaging in.

127 I regard it as significant that the plaintiff was not challenged about the nature of the activity in which he was engaged. By that I mean it was not put to the plaintiff that wakeskating in deepwater in the channel was a dangerous recreational activity because it involved a significant risk of physical harm. I appreciate by reference to s.5L(2), and *Fallas* at [123], that the plaintiff need

not be aware of the obvious risk said to have materialised which results in his injury. However, the whole of the judgment of Ipp JA in *Fallas*, from 424 [30] to 427 [50], bears close consideration. As the question of whether an activity is a dangerous recreational activity must be assessed objectively and prospectively the inquiry is necessarily fact-sensitive. I accept, however, that a conclusion one way or another necessarily involves mixed questions of fact and law and for the reasons given by Gummow J in *Dovuro* at 339 [66] to 342 [71], it will be pointless to closely cross-examine a plaintiff about his perception or understanding of the question. Subjectively most people do not actually court danger even if a degree of risk adds to the exhilaration of a sport. For this reason, if asked, most would deny that recreations engaged in by them are dangerous.

128 But as the determination of the question depends upon the consideration of all relevant circumstances including matters personal or subjective to the plaintiff such as competence, age and sobriety, it may be expected that the cross-examination will seek to elicit from the plaintiff relevant evidence tending to demonstrate dangerousness, and where appropriate challenge him or her about specific risks and the extent to which they may have been known or otherwise apparent. In the present case a purpose of the cross-examination of the plaintiff, consistently no doubt with the cross-examiner's instructions, was to pin the plaintiff down about the place where the activity was to be undertaken by restricting it to the channel. And it was not put to him that such an activity in that place involved any risk, significant or otherwise. It was certainly not suggested that the parties always intended to branch out into Chindarah Bay, west of the marker.

129 In *Fallas*, at 424 [36] Ipp JA observed:

Factors such as time, place, competence, age, sobriety, equipment and even the weather may make dangerous a recreational activity which would not otherwise involve a risk of harm (and the converse may be the case).

130 In *Falvo v Australian Oztag Sports Association* [2006] NSWSC 17 at [28] - [31] his Honour pointed out that in the definition of dangerous recreational activity "significant" is to be construed as bearing not only on "risk" but also on the phrase "physical harm". His Honour said that weight had to be given to the word "dangerous" itself.

131 The approach of Basten JA was to treat "significant" as qualifying the balance of the expression "risk of physical harm", clearly a composite idea (*Fallas* 440 [131]). The third member of that Court, Tobias JA at 432[90] - [92] agreed with aspects of the analysis of each of Ipp JA and Basten JA, however he preferred to approach "significant risk" as "one which has a real chance of materialising". His Honour also said:

... in determining whether the relevant recreational activity involves a significant risk of physical harm, one must identify that activity at a relatively detailed level of abstraction by including not only the particular conduct actually engaged in by the [plaintiff] but also the circumstances which provide the context in which that conduct occurs.

132 All of these considerations were summed up pithily by Mason P in *Xuereb*, and I will repeat what his Honour said at [31]:

The defendant bears the burden of proof in establishing a defence under s 5L. The question is to be determined objectively and prospectively. The standard lies somewhere between a trivial risk and one that is likely to occur. Significance is to be informed by the elements of both risk and physical harm. The characterisation must take place in the particular context in which the plaintiff places himself or herself.

133 At least in the context of the commercial supply of recreational services, Mason P thought it relevant to consider how the defendant represents the activities it offers to its potential consumers. Similarly, in *Echin v. Southern Tablelands Gliding Club* [2013] NSWSC 516 at [112] Davies JA said:

Whilst the determination of whether gliding is a dangerous recreational activity must be judged objectively, such a determination may be informed by views of persons with some knowledge of the sport.

134 Bearing these considerations in mind, and in particular approaching the question of whether the activity actually engaged in by the plaintiff was a dangerous recreational activity at an appropriately detailed level of abstraction, I am not persuaded that the defendant has proved that the wakeskating engaged in by the plaintiff at the time of his accident was a dangerous recreational activity.

135 The following circumstances have lead me to this conclusion:

- (ii) The activity was to be engaged in only in the relatively deep water of the channel;
- (iii) Unlike other variants of waterskiing, wakeskating is undertaken at a relatively slow speed; somewhat slower than wakeboarding; at about half the speed of waterskiing whether on one or two skis; and at a fraction of the speed of skiracing;
- (iv) The plaintiff was a novice but he had experience in other water sports including wakeboarding;
- (v) The evidence of Mr. Ellison that I have set out above at [10] - [14] does not support the idea that wakeskating is an activity involving a significant risk of physical harm even if one allows for the "inherent risks" which he identifies, some of which as I have said, are largely theoretical. On his evidence one would categorise wakeboarding in the deep water of the channel of

the Tweed River at Chinderah Bay (being in excess of 1.5 metres deep) as a recreational activity enjoying a trivial risk of minor physical harm only. The risk of serious injury is remote;

(vi) It may be permissible, taking an objective and prospective approach, to factor in the views of experts from other disciplines because the assessment of danger does not depend on the application of the universal standard of care. One would conclude from the evidence of the biomechanical engineers and of Professor Yeo that any risk of significant injury from striking the bottom in water of at least 3 metres in depth was one which was highly unlikely to materialise. Indeed according to the matters agreed on by the biomechanical engineers (see [18] above), the occurrence of the plaintiff's catastrophic injury depended upon the confluence of many factors including five which were specifically identified. Even at 1.5 metres or less in depth, so far as this may otherwise be relevant, it may be difficult to say that wakeskating involves a risk of injury through striking the bottom which had a real chance of materialising, to adopt Tobias JA's phrase. Especially when one bears in mind that "significant" informs both risk and harm. And considering the risk rating for catastrophic spinal injury provided by the biomechanical experts as set out at [20] above, it is relevant to bear in mind that the somewhat disparate risk factors identified actually need to be confluent before the risk materialises;

(vii) I accept that a low risk of catastrophic injury may amount to a "significant risk of physical harm", but in my judgment the risk of the relevant causative factors combining to produce catastrophic injury if the plaintiff had fallen in identical circumstances in the channel was so low to justifiably be put to one side as not "significant": *Falvo* at [31] per Ipp JA; *Fallas* at 422[13]; [18].

136 It may well have been otherwise, of course, if the parties had decided to conduct the wakeskating over, or close to, the sandbar: see *Fallas* at 424 [36]. But that is the case of neither party. I have found that the defendant did drive outside the channel but I would infer that that occurred as a result of mere negligence, not by misconduct, nor in actively courting danger.

137 Lest I be wrong in the conclusion I have expressed about the nature of the activity engaged in, it is necessary for me to consider whether the plaintiff's injury was the result of the materialisation of an obvious risk of the activity. The defendant still carries the onus.

- 138 I will accept that "a significant risk that converts a recreational activity" into a dangerous one "may be entirely different ... from the risk ... that materialises": *Fallas* at 423[25] per Ipp JA; cf 445 [151] per Basten JA.
- 139 It is clear from the definition in s.5F that in determining whether a risk is obvious, an objective approach must be taken. The risk is obvious if it would have been obvious to a reasonable person in the position of the plaintiff. It seems to me that the same level of specificity, or detailed level of abstraction, needs to be brought to bear in relation to the circumstances of the case for this purpose of determining whether the risk was obvious as was brought to bear in determining whether the risk was significant. As Basten JA said in *Fallas* at 445 [152], s.5L(1) directs attention to the risk which has materialised.
- 140 The relevant risk for consideration is the risk of harm, the materialisation of which gave rise to the decision, s.5L aside, that the defendant was negligent in the first place. Here, as I have said at [108] above, that risk is the risk of the plaintiff suffering appreciable, rather than transient, physical injury from falling and colliding with the riverbed. However, I bear in mind s.5F(4) set out above which seems particularly apposite in a case concerned with river-based activities.
- 141 I reiterate my acceptance, for the purpose of this contingent finding, that there is no necessary correlation between the significant risks which make an activity dangerous, and the obvious risk that materialises, notwithstanding Basten JA's compelling analysis to the contrary. However, on the basis that the activity undertaken was wakeskating in the channel, the considerations set out at [135] above lead me to conclude that the risk as formulated would not have been obvious to a reasonable person in the position of the plaintiff. Indeed on the basis that the activity was to be carried on wholly within the channel, a reasonable person in the position of the plaintiff (or of the defendant for that matter) would have been justified in putting the risk to one side as insignificant or trivial. I have not overlooked that a slight risk, one having a low probability of occurring, might yet be "not insignificant", and even "significant", when the resulting harm if it materialises is likely to be serious.
- 142 For these reasons the defendant's s.5L defence fails. Although pleaded, neither contributory negligence, nor s.5I, nor *volenti non fit injuria* were pressed.

Orders

- 143 My orders are:

- (1) Judgment for the plaintiff on the question of liability with damages to be assessed;
- (2) The defendant to pay the plaintiff's costs of the determination of the separate question of liability forthwith after they have been agreed or assessed;
- (3) List the matter for directions before the Common Law Case Management Registrar at 9:00 a.m. on Friday 27th September 2013.

DISCLAIMER - Every effort has been made to comply with suppression orders or statutory provisions prohibiting publication that may apply to this judgment or decision. The onus remains on any person using material in the judgment or decision to ensure that the intended use of that material does not breach any such order or provision. Further enquiries may be directed to the Registry of the Court or Tribunal in which it was generated.

Decision last updated: 30 August 2013

Appendix 2 – Thompson judgment

PLANNING & ENVIRONMENT COURT OF QUEENSLAND

CITATION: *R F Thompson (Qld) Pty Ltd v Noosa Shire Council* [2014] QPEC 17

PARTIES: **R F THOMPSON (QLD) PTY LTD (ACN 010 055 839)**
(Appellant)
v
NOOSA SHIRE COUNCIL
(Respondent)

FILE NO: 4533 of 2000

DIVISION: Appellate

PROCEEDING: Appeal against respondent council's refusal of compensation

DELIVERED ON: 24 April 2014

DELIVERED AT: Brisbane

HEARING DATES: 13, 20-23, 26-30 August , 02-06, 09-13 September, 21-25, 28-31 October 2013
17-21, 26-28 February 2014
Site Inspection 16 August 2013

JUDGE: Robin QC DCJ

ORDER: **Appeal dismissed; liberty to apply**

CATCHWORDS: *Local Government (Planning and Environment) Act 1990* s3.5, s8.2 -

PLANNING AND ENVIRONMENT-Appeal against respondent Council's refusal of compensation for injurious affection asserted by coming into force of a new strategic plan - preferred dominant land use (PDLU) mapping and descriptions of designations changed - open space PDLU designation (with wording allegedly more restrictive of development) significantly expanded to overlie more land zoned Residential High Density - former Urban Area PDLU also reduced where it overlay Future Urban zoning and designated Detached Housing for future - zonings all unchanged - symbol identifying site for potential tourist development removed - whether site's development potential, consequently value, was restricted to a similar extent by the original strategic plan and the continuing planning scheme given provisions in them protective of the environment, local

and visual amenity, etc and limiting intensity of development
 - relevance of Council approval 9 years before of rezoning
 (not subsequently endorsed by the Governor-in-Council)
 which would have opened the way for intensive development
 of the whole site - whether council bound by intimations that
 a development approved prior to original strategic plan
 coming into effect complied with its objectives , relevance of
 a more contemporary approval for the adjoining property,
 which shared an environmentally sensitive wetland -
 relevance of subsequent Council assessment of various
 development applications over the site by reference to the
 new strategic plan alleged by the appellant to show that it
 restricted development potential, alleged by the respondent to
 show it did not - expert evidence as to advice that would have
 been given to a hypothetical prudent purchaser (by
 unconditional cash contract) immediately before and
 immediately after the "relevant date" from ecologists (flora
 and fauna), engineers (geotechnical, hydraulic, traffic and
 general civil), visual amenity experts, economists, architects,
 planners and valuers bearing on the site's highest and best use
 before and after - changing legislative regimes, Government,
 community and court attitudes to environmental issues
 considered - to the extent that development scenarios relied
 on by the appellant required rezoning, section 3.5(5) did not
 assist its claim (the "*Sparke* point")

COUNSEL:	C L Hughes QC, B D Job and J Lyons for the appellant G J Gibson QC, R S Litster QC and N J Kefford for the respondent
SOLICITORS:	Geoff Klooger & Associates, then Connor O'Meara Solicitors for the appellant Wakefield Sykes for the respondent

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Introduction

- [1] This appeal is brought against the Council’s refusal of an application for compensation under s 3.5 of the *Local Government (Planning and Environment) Act 1990* (PEA). For a time, in consequence of amalgamation of local governments, the respondent was Sunshine Coast Regional Council. Following the amalgamation, by order of the court the proceeding was returned to its original constitution and title. The Council acknowledges that any liability for compensation established will be its responsibility. Paragraph 11 of the Notice of Appeal states:

While the claim for compensation lodged was originally ... \$34,629,000.00, more detailed analysis of the relevant injurious affection confirms that compensation ought to be assessed in the sum of \$52,904,000.00.”

- [2] The claim is based on the coming into force at “the relevant date”, namely 5 September 1997 of a new Strategic Plan which changed the preferred dominant land use (PDLU) designations of the appellant’s site. If the designations represented the be-all and end-all of development potential, the appellant would establish injurious affection. The appeal was commenced in 2000, but by reason of s 6.1.50 of the *Integrated Planning Act 1997* (IPA) and s 819 of the *Sustainable Planning Act 2009* (SPA) it is to be determined under the PEA. By s 3.5(1) where a person’s interest in land is injuriously affected by the coming into force of a provision contained in a planning scheme (or a of a new prohibition or restriction) compensation is payable by the local government in accordance with the section. Subsection (8)(a) is:

“the amount of compensation is (subject to paragraphs (b), (c) and (d)) to be an amount equal to the difference between the market value of the interest immediately after the time of the coming into operation of the provision of the planning scheme by virtue of the operation whereof the claim for compensation arose and what would have been the market value of that interest if the provision had not come into operation;”

- [3] In an appeal of the present kind instituted today, the Council would bear the onus of showing it should be dismissed under s 493(7) of SPA, which re-enacts s 4.1.50(6) of IPA. The PEA provided to opposite effect in s 7.1A(2B), the appellant being an “applicant” seeking compensation, and so described in s 3.5(4)(d) and (5), although called a “claimant” elsewhere in s 3.5; the onus is placed on the local government if its assertion that compensation is not payable is based on subsection (4)(d):

subject to subsection (2), where an interest in premises is affected by a planning scheme which by its operation prohibits or restricts the

use of land or the erection of use of a building or other structure thereon for a particular purpose, unless the applicant establishes that the applicant had a legal right immediately before the provision in question of the planning scheme came into force to use the land or erect or use a building or other structure thereon for the particular purpose which is so prohibited or restricted;

See subsection (6). Such is the situation here.

General Principles in Compensation matters

- [4] I am content to accept the appellant's description of the "general principles" of compensation in the written outline of submissions¹:

"40. At the relevant date the Local Government (Planning & Environment) Act 1990... was in force.

41. Section 3.5 relevantly provides:

"(1) *Where a person—*

(a) *has an interest in premises within a planning scheme area and the interest is injuriously affected—*

(i) *by the coming into force of any provision contained in a planning scheme; or*

(ii) *by any prohibition or restriction imposed by the planning scheme; or*

...

the person is, subject to compliance with this section, entitled to obtain from the local government compensation in respect of the injurious affection or expenditure and may claim that compensation in accordance with this section."

It is s. 3.5(1)(a)(i) that is the focus in this case.²

42. A claim for compensation:

(a) must be assessed having regard to the matters listed in s. 3.5(8)...; and

(b) the circumstances when compensation is not payable are set out in s. 3.5(4)...

43. Section 3.5(8)(a).... makes it clear that the amount of compensation is to be equal to the difference between the "*market value*" of the interest immediately before the time of the coming into operation of the relevant planning scheme provision compared to what would have been the "*market value*" if the planning scheme provision had not come into operation. The focus here, therefore, needs to be immediately before 5 September 1997 (and ignoring the draft 97 SP) and on the other hand immediately after 5 September 1997 when the new strategic plan was in force.

¹ Footnotes and formatting omitted

² As appears below, the appellant's attempt to avoid confronting s 3.5(4)(d) by distancing its claim from s 3.5(1)(a)(ii) fails.

44. The notion of “market value” was explained in the often-quoted case of *Spencer v The Commonwealth* (1907) 5 CLR 418 where Griffith CJ observed at 432:

“In my judgment the test of value of land is to be determined, not by inquiring what price a man desiring to sell could actually have obtained for it on a given day, i.e., whether there was in fact on that day a willing buyer, but by inquiring “What would a man desiring to buy the land have had to pay for it on that day to a vendor willing to sell it for a fair price but not desirous to sell?” It is, no doubt, very difficult to answer such a question, and any answer must be to some extent conjectural. The necessary mental process is to put yourself as far as possible in the position of persons conversant with the subject at the relevant time, and from that point of view to ascertain what, according to the then current opinion of land values, a purchaser would have had to offer for the land to induce such a willing vendor to sell it, or, in other words, to inquire at what point a desirous purchaser and a not unwilling vendor would come together.”

and further at 441 where Isaacs J observed:

“To arrive at the value of the land at that date, we have, as I conceive, to suppose it sold then, not by means of a forced sale, but by voluntary bargaining between the plaintiff and a purchaser, willing to trade, but neither of them so anxious to do so that he would overlook any ordinary business consideration. We must further suppose both to be perfectly acquainted with the land, and cognisant of all circumstances which might affect its value, either advantageously or prejudicially, including its situation, character, quality, proximity to conveniences or inconveniences, its surrounding features, the then present demand for land, and the likelihood, as then appearing to persons best capable of forming an opinion, of a rise or fall for what reason soever in the amount which one would otherwise be willing to fix as the value of the property.”

45. The Court would not lose sight of the fact that this case is a compensation case rather than a town planning case. Accordingly the Court is concerned with determining what a prudent purchaser would pay. The following further considerations are relevant:

(a) as the Court is considering provisions of successive strategic plans within a planning scheme, the ordinary principles relevant to construing planning schemes would apply;

(b) the assertions of the Council, as a party now potentially liable to pay compensation, should be treated with appropriate reserve;

(c) unlike in revenue cases, in a compensation case, doubts are resolved in favour of a more liberal estimate as was explained by Dixon J in *Commissioner of Succession Duties (SA) v Executor Trustee and Agency Co of SA Ltd* (1947) 74 CLR 358 ...

(d) a number of other relevant principles are set out in *Kettering v Noosa Shire Council* [2007] QPELR 605 at 622 where this Court observed:

- (i) *“The question to be determined is not whether a particular development application would have been approved or refused. The question is whether, in the minds of a hypothetical vendor and purchaser, there was potential for the additional development components identified by Kettering: cf Fast Signs Pty Ltd v Gladstone City Council [2005] QPELR 711 at [61], [62], [68] and [71].*
- (ii) *In that context, the hypothetical purchaser described in Spencer is not to be taken to be a dewy-eyed dreamer who will take the most optimistic view of all things, and nor is the purchaser to be regarded as a wilting lily who will proceed with such pessimism that each potential problem will be seen to result in failure: Yalgan Investments Pty Ltd v Albert Shire Council (1997-1998) 17 QLCR 331 at 341-342.*
- (iii) *A related point is that where the highest and best use is not a use actually in existence, and planning approval has not been obtained at the relevant date for that highest and best use, the vendor and purchaser must necessarily engage in some prediction about the prospect of obtaining approval. To do so they will not engage experts to work up a development application to a high degree of detail, but will undertake those investigations necessary to produce a state of satisfaction that the highest and best use is achievable: see Yalgan at 342 and Pajares v State of Queensland (2003) QLC 0044 at [74]-[80].*
- (iv) *Given that the hypothetical prudent purchaser is not a dewy-eyed optimist or a wilting lily, he will accept some risk in realisation of the highest and best use. That risk will be reflected in the value: see Fast Signs at [68]-[69] and Heavey Lex No 64 Pty Ltd v Chief Executive Department of Transport (1999) 20 QLCR 29 at 347.”*

As to 45(b) reliance was placed on the willingness explained in *Garbler v Redland Shire Council* [2001] QPELR 442 at 464 [59] to “accept the force of Mr Hughes’ proposition that the Council’s assertions, as those of a party now potentially liable to pay compensation, should be treated with appropriate reserve”.

- [5] There could be added to the adopted paragraphs of the appellant’s arguments in that proceeding identified in (d) (60-63, which constitute (i) to (iv) above) paragraph 49: “The enquiry is not the same as that which arises in an appeal about development approval. The question is not whether an approval would have been given. Rather, because it arises in a compensation context, it requires consideration of reasonable expectation, involving a hypothetical development scenario (not an actual development application), as an intrinsic element of assessing market value.”
- [6] Apropos 43 above, it was agreed that the hypothetical contract of sale was an unconditional one (with a completion period of two or three months – it did not seem to matter which), so that the hypothetical purchaser, a “prudent” one, having

acquired title and outlaid the contract price in full, took the risk of approvals to permit contemplated development not eventuating. Not only the content or existence of any draft of the new strategic plan must be ignored, but also the investigations and ensuing reports that underlay it: in other words, the only strategic planning by the Council that the putative vendor and purchaser would take into account be that embodied in the existing 1988 Strategic Plan.

- [7] The relevant principles emerging from the decision of Judge Quirk relied on by the appellant, *Lubrano Pty Ltd v Brisbane City Council* [1995] QPLR 81 are clarified in *Tonak Pty Ltd v Cairns City Council* [2003] QPELR 373 in which the Council's defence of a compensation claim relied in part on its "Policy 4.06": Judge White said at [20]:

It is also submitted for the Appellant that even if valid the policy should be ignored. This was on the basis that it was preliminary to the coming into effect of the 1993 Scheme and therefore to give it any weight would be to give some effect to the provisions of the 1993 Scheme. It is submitted that this would be contrary to the requirement that before value is to be assessed on the basis that the 1993 Scheme did not come into effect. Reliance was placed upon the judgment of His Honour Judge Quirk in *Lubrano Pty Ltd v Brisbane City Council* (1995) Q.P.L.R 81. In that case His Honour adopted the view of Waddell J in *Jones v. Gosford Shire Council* (1975) 33 L.G.R.A where the following submission was adopted: -

"It is submitted for the plaintiff that in determining the unaffected value of the land the effect on value of the draft planning scheme and the provisions of Div.7 of Pt 12A of the Local Government Act relating to interim development should be ignored. It is said that as the purpose of s342AC as applied to a case such as the present is to provide compensation for a reduction in the value of the land caused by a restriction that purpose should not be defeated by taking into account the reduction in value, which has already taken place because of the prospect of the imposition of the restriction."

I respectfully agree with everything said by their Honours in those cases. However, in my view they are to be distinguished from the present case. The statement in the *Jones* case seems to me to refer to the effect which knowledge of the impending planning restriction would have in the market place rather than any effect any existing or interim planning restriction would have had on the prospects of development of the subject land. In the *Lubrano* case His Honour was dealing informal statements of planning intent which His Honour, rightly with respect, concluded should be given no weight.

[21] In this case once it is accepted that Policy 4.06 was validly introduced it is given formal statutory status pursuant to the provisions of the *Local Government Planning and Environment Act* although it does not form part of the planning scheme itself. See s2.6. Subsection 4.4(3) sets out the various matters to be considered

in assessing an application to amend the planning scheme. A local planning policy is not expressly mentioned, although it would no doubt be potentially included in para (1) namely “such other matters, having regard to the nature of the application to amend the planning scheme may give such weight as it thinks fit to a valid local planning policy.

- [8] The appellant says that its case is an unusually strong one, apart from what it contends was clear abandonment in the 1997 instrument of a pro-development line in the 1988 instrument: it can point to Council approval of rezoning for large-scale development on the site in 1988, said (by the Council) to be consistent with the objectives of the 1988 Strategic Plan, although applied for in 1987 before there was any strategic plan governing the application (R221); it can also point to a relatively contemporary approval of similar development, on a site immediately adjacent known as Noosa Sanctuary. This was approved by the Council in September 1995, leading to a developer appeal against conditions compromised so as to lead to a consent order of the court in June 1997. The appellant in *Barns v Maroochy Shire Council* [2010] QPELR 419 could point to nothing equivalent. Much effort was expended by the Council – and successfully in the end – to demonstrate that those approvals would not have had the encouraging or comforting effects that were suggested by the appellant on the mind of a prudent potential purchaser appropriately advised in the before scenario in evaluating the site’s development potential.

Quantifying the Appellant’s claim

- [9] To support its 45(c) the appellant relied on the short concurring judgment of Dixon J:

I have had the advantage of reading the judgment prepared by *Williams J.* and agree in it. I should like, however, to add for myself that there is some difference of purpose in valuing property for revenue cases and in compensation cases. In the second the purpose is to ensure that the person to be compensated is given a full money equivalent of his loss, while in the first it is to ascertain what money value is plainly contained in the asset so as to afford a proper measure of liability to tax. While this difference cannot change the test of value, it is not without effect upon a court’s attitude in the application of the test. In a case of compensation doubts are resolved in favour of a more liberal estimate, in a revenue case, of a more conservative estimate. But even so I cannot find grounds for estimating the value of the shares below thirty-seven shillings each.

but shorn of the first and last sentences, also of the fourth – which tends to qualify the recommendation of generosity. The present compensation case may be distinguished from one arising from compulsory acquisition, where the owner loses all or some of the land. The appellant’s title was not affected. The valuers revealed that it sold its land, apparently advantageously, for \$95 million in 2005 in a transaction too late to be considered as a comparable sale, and a transaction no doubt affected by the currency of valuable development approvals which the purchaser could (and did) avail itself of. (The Council says that those approvals

(from 2003 or later) which are referred to in the 2005 contract (Exhibit 220) illustrate what the hypothetical prudent purchaser would have anticipated immediately after the relevant date as feasible development options. The appellant's case is that, on the contrary, expectations would have been that the 1997 Strategic Plan would be relied on by the Council to reject development, as allegedly illustrated by the assessment of a development application known as 22423DA in June 2002 (Exhibit 178).)

- [10] For purposes of the “before” case, the appellant’s valuer, Mr Brett (less sanguine that the appellant about the development approvals a potential purchaser could confidently anticipate) assessed the value before the relevant date as \$41.9 million, compared with \$14.45 million immediately after the relevant date. His counterpart, Mr Slater persuasively observed that, different as the circumstances were, the price achieved in 2005 suggests there is something wrong with the “after” valuation. There was no evidence about general movements in the property market in Noosa before or after 1997. The only set of numbers for changing values in Noosa afterwards was Mr Brett’s sales evidence for Noosa Springs October 1996 to June 2005 (Exhibit 214 p 18), which does not suggest even a doubling of values.
- [11] Mr Brett adhered to his \$14.45 million, but provided alternative values for the “before” case, which might be relied on if the court on various bases considered that development potential (and accordingly market value) in the “before” case was less than he surmised, based on architectural opinions of what was feasible. Thus Exhibit 228 is a reworking in which the before value is \$37,730,730. An issue has been whether through Mr Brett or otherwise the appellant has provided a useable formula or enough evidence to support calculation by the court of an award of compensation on the basis of development scenarios not specifically assessed by any valuer. There are no numbers from Mr Slater, who considered that suggesting ultimate dollar amounts for values of the site was an irrelevant exercise, given his underlying view (broadly consistent with the opinions of Mr Robinson, the architect and Mr Venn, the planner) that the before and after values would be the same, changes in strategic planning having no impact on the site’s development potential, as a properly advised hypothetical prudent purchaser would assess it.

The Site: “Area A” and “Area B” identified

- [12] The appellant’s land consists of some 37 hectares centrally located in Noosa Heads with a street address of Banksia Avenue and water frontage to the Noosa River system. The real property description as at 5 September 1997 when a new strategic plan came into effect (“the relevant date” for the purposes of s 3.5) was Lot 2 on RP 889602. I have found it helpful to visualise the site in terms of the “hexagon” of metropolitan France, Weyba Creek and Noosa Inlet reflecting the Bay of Biscay and the English Channel/la Manche; Banksia Avenue reflects the straightened-out frontiers with Germany, Switzerland and Italy, separated from the water frontage by the Belgian frontier. The last two sides of the hexagon, being the Mediterranean coast and Spanish border are amalgamated on the site as its straight east-west southern boundary. At the east of the site, there are two areas of high dunes, steep at the northern or western edges, treated in some planning documents as one with Noosa Hill; those two areas are separated by a low-lying

corridor running from the “kink” in Banksia Avenue to the low, flat remainder of the site fronting Weyba Creek. The northern of the two dunal areas, which falls to Noosa Inlet, has been identified in the context of this proceeding as Area A, the southern one as Area B. Putative development scenarios are described in relation to these Areas. Begging a question, the flat area may be called the sedgeland.

The new and former Strategic Plans

- [13] On the relevant date, the Shire of Noosa Strategic Plan was gazetted. This instrument “affected” the land in various ways, including by particular provisions about it under the objective for the Preferred Dominant Land Use of Urban Semi-Detached & Attached Residential to “Protect sites for resort developments which focus on the Shire’s natural low key outdoor appeal and cultural values” (19.2.4, p 118). The issue is whether the land was affected “injuriously” in the sense of reduced in value: *T M Burke Estates Pty Ltd v Noosa Shire Council* [1998] 2 Qd R 448. The land’s zoning was not changed and remained as it had been under the 1985 and 1990 planning schemes for Noosa, said to be:-
- “Open Space, 1.87 hectares
 - Residential High Density (RHD), 6.44 hectares
 - Future Urban (FU), 17.79 hectares
 - Non-Urban, 9.03 hectares and a separate area of 1.03 hectares.”
- [14] The earlier 1988 Strategic Plan had shown Future Preferred Dominant Land Uses, the entire water frontage of the site (to Weyba Creek and Noosa Inlet) and otherwise what might be called the “western half” being designated Public and Private Open Space, the balance of the land Urban Area, with an elongated oval-shaped symbol over the heart of the land generally (covering both designations) and that of its southern neighbour.
- [15] The 1997 Strategic Plan changed the Preferred Dominant Land Use Designations (PDLU) and the descriptions of them. Corresponding with the Residential High Density (RHD) Zone was “Semi-Detached and Attached Residential” (SD&AR), limited to 3.852 hectares³ and “Detached Housing” limited to 7.756 hectares, as compared with the Future Urban (FU) Zone Area, being some 10 hectares greater in extent. Everything else, that is the bulk of the land came within “Open Space - Conservation and Waterway Protection” (OSC & WP), at once the explanation of the Public and Private Open Space PDLU area and of the Non-Urban zone on the one hand and on the other hand a reduction of the Urban Area PDLU and the aggregate RHD and FU zones. The Open Space zoned land separating RHD from FU which fronted Banksia Avenue essentially changed its PDLU on the relevant date from Urban to (Open Space) Conservation and Waterway Protection, which designation also came to be adopted for the Non-Urban zoned areas along Weyba Creek and Noosa Inlet. The foregoing summary involves some approximation, in that the boundaries assigned to the zones and to the two sets of PDLU designations do not coincide precisely. The tourist facility logo disappeared in the new Strategic Plan, but in effect remained, according to the Council. Its stance is that, notwithstanding the various provisions in the PEA mandating the refusal of an application for approval of a proposed development if it conflicted with “any relevant Strategic Plan” (see s 4.4(5A), s 4.7(5A), s 4.13(5A) and s 5.1(6A)), by reason of constraints affecting the land, from a standpoint of determining

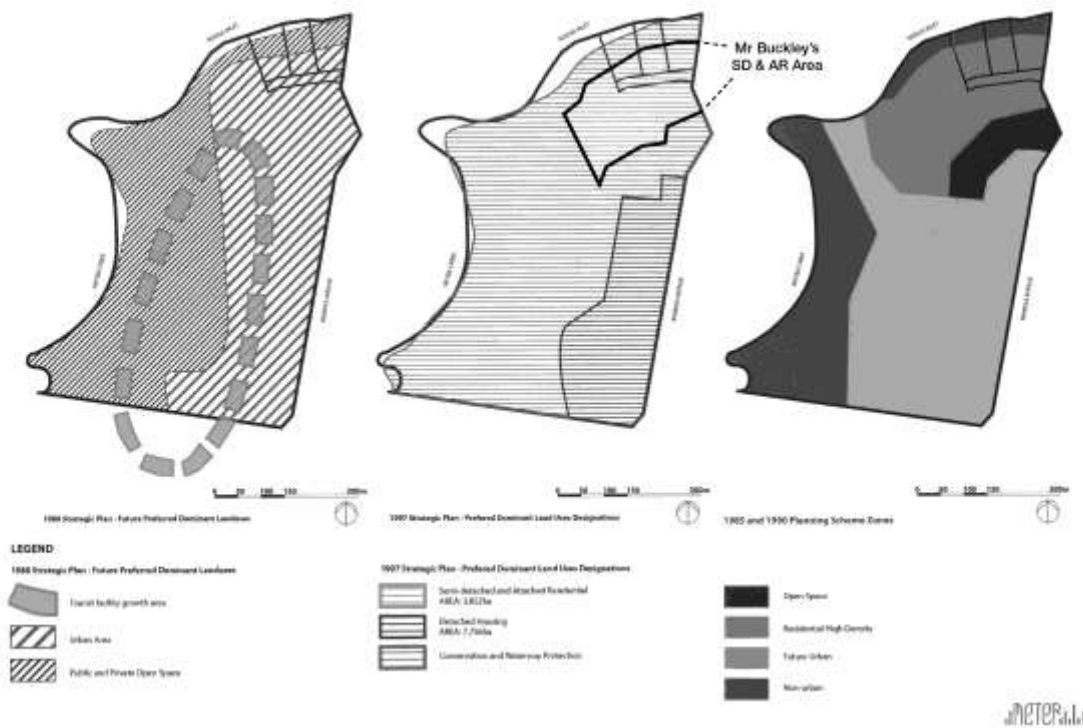
³ Planner Mr Buckley’s estimate; the architects agreed on 3.374 hectares.

compensation as required by s 3.5(8)(a), what could be achieved by way of development of the land was not changed by the coming into effect of the 1997 Strategic Plan in a way that would affect the judgment of a prudent purchaser as to its value.

- [16] The planning schemes for Noosa, for purposes of this proceeding, have never contained provision, as encountered in some other planning schemes, excluding the Strategic Plan from consideration in assessing development applications. Thus, the Strategic Plans for consideration here must be accounted “relevant”. The 1988 (and Noosa’s first) Strategic Plan was gazetted on 13 February that year and, in the appellant’s case, there is much significance in the Council’s having approved, by decisions in the weeks and months following gazettal a particular rezoning application on the basis (to be reported to the Minister) that the proposal accorded with the objectives of “Council’s Strategic Plan”, necessarily the 1988 one. See Exhibits 8 and 9.

Exhibit 4

- [17] What goes before can be better understood by reference to exhibit 4, reproduced here with a note naming Mr Buckley added. It was tendered by Mr Hughes QC (leading counsel for the appellant) in his opening address as a litigation aid, as which it is useful. Unfortunately, it came to have more reliance placed on it by some witnesses than it deserved.



Area A is generally where the RHD zoning is shown; Area B is generally where the Detached Housing PDLU is shown. The term “shrinkage area” came to be used as a convenient way of describing the difference between “Area A” and the new “SD&AR

PDLU”. Roughly, it corresponds with the south-western part of the RHD zoned land. The vice of exhibit 4, which caused mischief from time to time, was its depiction of the PDLU pushed too far back from Noosa Inlet.

A Mistake in the strategic plan mapping?

- [18] Mr Slater’s bold characterisation of the 1997 strategic plan boundary between the SD&AR and OS-C&WP PDLUs as a mistake, for all that it is unexplained and seems inexplicable, is rejected. From an early point in the appeal, long before Mr Slater gave evidence, Mr Hughes submitted that a mistake in designations was without consequences if a landowner was able to show injurious affection come the relevant date, albeit based on a mistake. Presumably he had in mind *CMB No1 Pty Ltd v Council of Shire of Mulgrave* [1997] QPELR 51, in which land that had recently been rezoned from Residential A to Local Shopping Zone following a consent order in the court in a conditions appeal was inexplicably shown as Rural Zone in the Town Planning Scheme Map when a new Town Planning Scheme for the Shire was gazetted two weeks later. The mistake was quickly rectified by the Council’s approaching the Department of Local Government, which fast tracked matters, leading to rezoning to the intended Commercial Zone, the Department waiving provision of an environmental impact statement. At relevant times, the site was under an uncompleted contract of sale for 5 million dollars, the parties to which made some adjustments (for example to the deposit amount) on being alerted to the mistake, without changing the sale price. The judge in this court considered that reference could not be made to events after the relevant date, producing a result he conceded was “somewhat less than satisfying in that the compensation which I have been required to assess appears to be greater than the loss actually sustained”, dealing with the valuation evidence in this way:

“I fear that M Coonan has been overly influenced by the effective and very commendable way in which the Respondent did in fact deal with the problem which arose. The hypothetical exercise must be carried out as at the relevant time. Whether it would have been as apparent as he believes to prudent hypothetical parties faced with the gazettal on 17 December 1993 that matters would occur as they have is another matter entirely.

As Mr Stallman correctly pointed out it would have been obvious to a prudent and properly advised party that there were matters which were not entirely within the Respondent’s control. The new town Planning scheme, upon its gazettal, had, as a matter of law, an unfavourable impact upon land use rights which could be reversed only by prescribed procedures. Whether an application to return the land to an appropriate zoning would be able to be made (as it was) in a way that excluded opportunity for objection and appeal (e.g. by competing commercial interests) and whether the trouble and expense of a further Environmental Impact Statement would be able to be avoided was not at all clear at the relevant time.

Whether the problems in the settling of conditions of a rezoning which had earlier presented themselves might re-surface because of any change in the attitudes of the statutory authorities involved could not be known with certainty. That some other misadventure (such as was responsible for all of this trouble) might occur could not be discounted.

Against this background to suggest that the inclusion of the subject land in the Rural Zone on 17 December 1993 had a negligible effect on its market value is, in my view, to ignore reality. As it was, the matter moving as favourably as one might have expected, it was nearly six months before the land was once more in an appropriate zoning.”

- [19] The decision was reversed by the Court of Appeal, by majority: *CMB No1 Pty Ltd v Cairns City Council* [1999] 1 Qd R 1. The majority considered that “immediately” in s 3.5(8)(a) admitted of some flexibility, permitting, subject to limits, reference to subsequent events as confirming foresight, as Williams J put it at page 21, when he said (19-20):

“What the respondent appears therefore to be saying is that it is permissible, if not necessary, to have regard to hypothetical subsequent events in determining compensation, but one must ignore what actually occurred. There is nothing in the legislation, in my view, which forces one to accept that; it must generally be regarded as an absurd proposition”.

The matter was remitted to this court with an intimation that the dominant component of the compensation it had allowed was inappropriate, but without any other intimation as to which, if any, of the other components should be awarded. Both parties here referred to subsequent events, in particular to what Council officers said about or did under the 1997 Strategic Plan. This was done without reference to *CMB*. It has been considered subsequently, for example in *Mio Art Pty Ltd v Brisbane City Council* [2010] QLAC 0007, an appeal from which was allowed: *Brisbane City Council v Mio Art Pty Ltd* [2012] 2 Qd R 1. The headnote indicates that the Court of Appeal distinguished *CMB* which, however, I would regard as good law. The decision was not without precedent, reference being made to *Thorpe v Brisbane City Council* [1966] Qd R 37, where use was made of an offer made by the respondent Council two years after an acquisition.

- [20] In this case, there was no amendment, but we have a subsequent history of Council approvals for the site expressly based on the idea that the SD&AR designation and the RHD zoning were for practical purposes the same (following what looks like a strong “obiter” ruling against development outside SD&AR in exhibit 178): Exhibit 221ff. The idea of a mistake made in 1997, however, seems inconsistent with the Council’s rejection in that year of Mr Buckley’s submission on behalf of the appellant that boundaries of the zone and the designation should coincide: Exhibit 190. These matters will be canvassed at greater length below

The appellant’s before and after cases

- [21] The appellant never abandoned its ambit claim based on the entire site having potential to attract necessary approvals for the R221 proposal approved in 1988 or something similar, by 5 September 1997. Although such a development may have been achievable in engineering terms, for environmental reasons it would have been rejected. The Council needed to raise the environmental issues it did to put R221 out of contention: no witness supported it or anything like it as a possibility by the relevant date. The relevant witnesses identified various constraint lines on the site within which they considered development should be confined, giving rise

to a revised “before” case. The appellant’s closing submissions (in bold type) argue that:

“414 At the end of the day, the Court would be satisfied that the highest and best use of Area A in the ‘before’ would be as the architects McKerrell and Robinson agreed, in accordance with McKerrell’s ‘before’ plan yielding a GFA of some 72,918m².”

There was less directness regarding Mr McKerrell’s before case for Area B; Mr McKerrell is mentioned only once in passing in paragraphs 435-450, reliance being placed on Mr Brett’s exhibit 26A; the 65,045m² of GFA propounded is no doubt based on Mr McKerrell’s work.

- [22] Area A and Area B have always been treated separately, in the former in the before case taking full advantage of the RHD zoning and in the latter of rezoning to Residential Medium Density. Exhibit 23 (page 97) is one depiction in evidence demonstrating achievement of GFA of 74,958m² in some 20 typical three and four storey buildings and six smaller ones in Area A and 71,985m² in Area B (from exhibit 23 page 109) in some two dozen typical buildings plus 48 board walk villas on stilts above the southmost edge of the sedgeland (67,269m² without them).
- [23] The appellant’s after case for highest and best use of the site was that Area B had potential for detached housing only about in Area A no development would be permitted outside the SD&AR PDLU, even on land zoned RHD. GFA achievable reduced to 33,740m², the 20 buildings reducing to 13 and the six smaller structures to four.
- [24] Regarding the appellant’s paragraph 45(b), it is not only the Council’s evidence and arguments in a compensation claim that should be approached cautiously. Just as the Council may be motivated by minimising any liability for compensation, an applicant may be presumed desirous of winning more compensation rather than less. Development scenarios propounded will never be tested in the real world from the point of view of being funded or of attracting ultimate purchase(s) in the market. There may be a temptation to present an unduly rosy picture of what could have been done with a site before the relevant date and an unduly negative one of what could have been done after. The obverse applies to the respondent Council. Chapter and verse argument in following paragraphs, inviting the riposte at both sides are playing to win. Against the Council’s assertion that increasing environmental awareness through the 1990s affected development expectations in a negative way, it was pointed out that no formal planning document reflects this.
- [25] The Council stands accused of rewriting history by now advocating inconsistently with what it “was actually doing around the time of the relevant date” and (rather than focus upon “the clear wording of the two different strategic plans”) impermissibly (given the *Pointe Gourde*⁴ principles) relying on “informal documents” that were “part and parcel” of its review of the old strategic plan: Paragraph 50. The Council contends that the appellant’s case laces too much reliance on the map in the 1997 strategic plan and ignores vital parts of the other statutory components of a strategic plan identified in s 2.4 of the PEA, in particular statements of objectives for the PDLUs and criteria for implementation.

⁴ *Pointe Gourde Quarrying and Transport Company Ltd v Sub-Intendent of Crown Lands* [1947] AC 565

An important provision which establishes the flexibility inherent in the 1997 strategic plan, it says, is s 25.2.6, found among the Strategic Principles in s 25 which requires that “all development should adhere to the Strategic Principles”. Under the heading Environmental Principles is:

“It is necessary to reveal in detail the matters adverted to in a summary way here.”

Legislation providing for strategic plans and planning schemes generally

- [26] The *Local Government Act 1936 – 1984* in s 33(1) defined a strategic plan as: “‘Strategic plan’ – A plan that specifies in general terms the future preferred dominant land uses for the town planning scheme area for the progressive development of lands within such area⁵ during the period for which the scheme has force and effect.”

The following subsections provided:

“(2A) Inclusion of a strategic plan, development control plan in town planning scheme. (a) In the course of preparation of a town planning scheme by it in accordance with a resolution approved by the Minister pursuant to subsection (2)(c) subsequent to the commencement of the *Local Government Act and Another Act Amendment Act 1980*, the Local Authority –

- (i) shall, unless exempted by the Minister (he being hereby thereunto authorised) from so doing, prepare a strategic plan for the town planning scheme area.

...

(2C) Composition of town planning scheme. A town planning scheme shall consist of –

- (a) the Order in Council notifying approval of the scheme, together with the schedules, if any, to the Order in Council;
- (b) the scheme maps;
- (c) by-laws made by the Local Authority (whether before or after the commencement of the *Local Government and Another Act Amendment Act 1980*) to implement the scheme and to provide for, regulate and control the administration and execution of the scheme;
- (d) strategic plans and development control plans (whether made before or after the commencement of the *Local Government Act and Another Act Amendment Act 1980*), together with supporting documents;
- (e) every amendment of the scheme duly approved from time to time subsequent to the approval of the scheme.

(2D) Composition of strategic plan. A strategic plan referred to in subsection (2A) shall consist of –

- (a) a map or series of maps identifying preferred dominant land uses;

⁵ The following words were replaced in the PEA by ‘that conforms with section 2.4 and is approved by the Governor in Council’.

- (b) a statement of objectives of the Local Authority in relation to preferred dominant land uses together with other criteria for determining the type, scale or distribution of other uses required as an integral component to service the preferred dominant land uses;
- (ba) copies of writings for the implementation of that plan;
- (c) copies of writings containing supporting information used or in connexion with for the preparation of that plan.”

[27] The corresponding PEA provisions were:

“PART 2 – PLANNING SCHEMES

Composition of planning scheme

2.1 A planning scheme is to consist of –

- (a) planning scheme provisions for the regulation, implementation and administration of the planning scheme;
- (b) zoning maps and regulatory maps;
- (c) a strategic plan;
- (d) a development control plan (if any);
- (e) any amendment approved by the Governor in Council in respect of the planning scheme.

Planning scheme provisions

2.2 Provisions for the regulation, implementation and administration of a planning scheme are to include –

- (a) the designation of each zone;
- (b) a statement of the intent of each of the zones;
- (c) requirements for –
 - (i) the use of premises; and
 - (ii) the erection of structures; and
 - (iii) the subdivision of land;
- (d) administrative requirements for –
 - (i) the form of making of applications; and
 - (ii) matter for consideration in deciding applications; and
 - (iii) the keeping of records and registers in respect of the planning scheme; and
 - (iv) matters relating to offences; and
 - (v) other matters necessary for the proper and orderly administration of the planning scheme.

Zoning and regulatory maps

2.3(1) Zoning maps are to depict the zones into which a planning scheme area is divided.

(2) Regulatory maps are to depict areas which are subject to particular planning controls.

(3) Zoning maps and regulatory maps are to have a cadastral base.

Strategic plan

2.4 A strategic plan is to include –

- (a) a map or series of maps depicting preferred dominant land uses for the area;
- (b) a statement of objectives in respect of each of the preferred dominant land uses together with other criteria for determining the type, scale or distribution of other uses required as an integral component to service each preferred dominant land use;
- (c) criteria for the implementation of the plan.

Development control plan ...

Supporting documents to a planning scheme

2.6(1) Each planning scheme is to be supported by –

- (a) planning studies; and
- (b) local planning policies (if any).

(2) The supporting documents referred to in subsection (1) do not form part of a planning scheme.

Planning studies

2.7(1) A planning study is to be prepared in connection with the formulation of each –

- (a) planning scheme; and
- (b) strategic plan; and
- (c) development control plan

(1A) In preparing the planning study, the local government concerned must have regard to relevant State planning policies.

(1B) The planning study must include a statement about the extent to which the local government had regard to State planning policies.

(2) Each planning study is to include an assessment of each of the following matters which are relevant to the formulation of the planning scheme, the strategic plan or the development control plan –

- (a) topography;
- (b) natural or built environment (or both);
- (c) regional land use patterns;
- (d) public utility infrastructure systems and transport systems;
- (e) regional or local economic and employment factors;
- (f) the social and cultural features of the population, including housing;
- (g) any constraints and opportunities in respect of development;
- (h) in the case of a strategic plan, any reasonable development options available.”

Some features of foregoing, relevant to the adoption of the adoption of the 1997 strategic plan which at p175 lists thirty-four underlying planning studies, some of which became exhibits are that:

- It is the documents described in s 2.1(a), (b) and (e), s 2.2 and s 2.3 which set out the requirements for uses of premises. The 1988 strategic plan was specific that:

“PREFERRED DOMINANT LAND USES

2. The strategic plan maps designate preferred dominant land use categories which are not zones, and do not confer development rights for individual sites. Uses which may establish within the preferred dominant land use areas are subject to the land in question being included in an appropriate zone on the scheme maps. This Plan in no way abrogates the use rights applicable to the existing zones under the town planning scheme.”

There is nothing corresponding in the 1997 strategic plan, by the legislative provisions set out above establish the primacy of the zoning arrangements.

- The maps referred to in those provisions are to have a cadastral base – not a requirement of maps in a “strategic plan”.
- The definition of “strategic plan” implicitly acknowledges that preferred dominant land uses may not necessarily come about; different uses may. The 1997 strategic plan itself recognises this in what I think constitutes a helpful explanation of “preferred dominant land use”, an expression not defined:

“To assist the interpretation of the objectives, a table for each designation includes the following descriptions:-

- The name of the Preferred Dominant Land Use or Other Designation. The Preferred Dominant Land Use name is intended to reflect the dominant land use likely to be found within its mapped area, in the life of this Strategic Plan. The names of the preferred Dominant Land Uses cannot reflect all land uses which will be found within the designation, however a brief statement regarding the principal uses associated with each Preferred Dominant Land Use, is contained in the table.”

[28] At first blush, the lack of deference to zoning as the basis of uses permitted or potentially permitted bespeaks a grab at primacy by the new strategic plan. I do not accept that there is any change from the situation since the commencement of the PEA with its requirement to reject a development proposal conflicting with a strategic plan in the absence of sufficient planning grounds favouring the proposal to outweigh the conflict. No doubt it would be a planning ground that the zoning favoured the proposal. Of course, the application may be for rezoning, as would have to be the case here. Thus, for example, possibilities were canvassed of Area A being rezoned Special Facilities from RHD or Area B rezoned from Future Urban to Residential Medium Density (RMD). So the issue becomes whether the new PDLU arrangements might stand in the way of a particular proposal in the outcome in a way that the old PDLU arrangements would not have.

(The PEA provisions set out alleviate my initial concerns that the 1997 Strategic Plan contained nothing corresponding to the self-effacing acknowledgement immediately following the introduction to the 1998 Strategic Plan:

“PREFERRED DOMINANT LAND USES

2. The strategic plan maps designate preferred dominant land use categories which are not zones, and do not confer development rights for individual sites. Uses which may establish within the preferred dominant land use areas are subject to the land in question being included in an appropriate zone on the scheme maps. This Plan in no way abrogates the use rights applicable to the existing zones under the town planning scheme.”

[29] The 1997 replacement contains minimal, if any, acknowledgment of zoning. Nevertheless, it will be the unaltered zoning that determines development rights, that specifies the “requirements for the use of premises” as the PEA puts it. The zoning had to be right before any development could be approved and rezoning by amendment of the planning scheme may well be required. It would have been required for the site outside the RHD zone/PDLU for anything beyond limited residential development. Of course, this is where the provision in s 4.4(5A) requiring the local government to refuse to approve the application if:

“the application conflicts with any relevant strategic plan ...; and

(b) there are not sufficient planning grounds to justify approving the application despite the conflict,”

comes into play.

Council’s Opportunity to adopt, then replace its Strategic Plan taken up

[30] During closing addresses there was some speculation about whether the Council was obliged to adopt a new strategic plan in 1997 or, having no obligation, took up an opportunity to do so, perhaps in pursuit of an agenda to reduce the development potential of parts of the shire, such as the site. The answer to this question, which leads nowhere in particular, lies somewhere in the middle. By s 2.16(2) the Council had seven years following 15 December 1990 (I think it unlikely that the starting date was 13 February 1988) to review its planning scheme (including the 1988 strategic plan) to determine its suitability for continued operation. The Council had to decide one way or the other. Subsection (3) required a report to the chief executive if continued operation was considered suitable. Otherwise, a new or consolidated or amended planning scheme had to be prepared. Subsection (5) mandated preparation of a new planning scheme. It is not clear to me whether the 10 year limit from “notification of each order in Council last notifying approval of a planning scheme” applies to the requirement “to prepare” or the requirement “to supersede” (which would shorten the time available to the Council). Subsection (6) allowed the Council to extend or further extend the time limit, but subject to the Minister’s written direction to different effect under subsection (7). There was no evidence showing in what way s 2.16 had been applied by the Council here. While there may have been an “agenda” of sorts involved in the approach of limiting roads to two lanes, investigating the idea of a population cap for the Shire

and the like, nothing in the voluminous evidence speaks a mission to bring to an end strategic planning to make “Noosa Shire a land of opportunity”, or to accord environmental considerations increased weight in assessing development proposals: If it had been possible to locate any statements by the Council or significant Council personnel indicating such an agenda, I would expect them to have got into evidence. We know, for example, that a detailed public statement was recommended to be (and was) prepared to explain why the Council compromised the appeal about R527. See exhibit 135, p 1095 and p 1175.

Zoning

- [31] What uses might be made of the site depended on existing zonings, or re-zonings that were achievable. Stated intents for the zones relevant to the appellant’s land in the Town Planning Scheme for the Whole of the Shire of Noosa were as follows:

- “4. *Residential High Density Zone* – This Zone is intended to provide for areas of relatively high density residential unit development generally providing accommodation for holiday makers and tourists. It is intended that the maximum height of such residential accommodation to be six storeys.

Ancillary resort development of a comprehensive nature (wide range of associated holiday support and tourist orientated development which would be compatible with the nature of this Zone), is permissible with the Council’s consent.

It is not intended that the Council approve all development applications where such comply with the scheme and policies, because of the potential for detrimental effect on the visual environment and surrounding amenity in this Zone. The Council will encourage the formulation of development proposals by liaison with the Council and the testing, where appropriate, of public opinion.

5. *Future Urban Zone* – This Zone is intended to provide a reservoir of land to cater for the expansion of urban areas until the next review of the scheme.

A prerequisite for the rezoning of this land by inclusion in a higher density urban zone is the adequacy of public utility services, but temporary uses of land are permitted or permissible depending on the circumstances without the extension of full public utility services

The future development of such areas is not wholly restricted to residential usage and, in appropriate locations, the rezonings of such land to include same in other zones may be possible, but the development of land in this Zone will be compatible with the strategic plan, development control plans and policies. ...

10. *Open Space Zone* – This Zone includes private and public land used or intended for use for passive parkland purposes or for sport and recreation purposes. It is also intended that some land included in this Zone serve functions such as providing floodways and buffer areas between residential and other development.

Land in this Zone of suitable size and circumstances may be developed for facilities for organised sports with associated facilities such as amenities blocks, stadiums, carparking facilities, kiosks and the like.

Some land included in this Zone may be used for community facilities. ...

19. *Non-Urban Zone* – This Zone is intended to include land in close proximity to existing urban areas which are considered to be unsuitable for urbanisation. It includes land adversely affected by excessive slope, inundation by floodwaters or other physical disabilities. This Zone includes the worst affected parcels of land which are also included in Drainage Problem Area, Area Subject to River Flooding or Sand Dune Problem Area allocations. Subdivision of land in this Zone is severely restricted.”

That planning instrument was gazetted on 4 May 1985.

- [32] The 1985 planning scheme was replaced by the Town Planning Scheme for the Shire of Noosa which was gazetted on 15 December 1990; it exhibits some differences in language, which the parties apparently accepted were not of any significance in this appeal. It might be noted in particular that reduction of the maximum building height in the Residential High Density (RHD) Zone was said to be unimportant, as the appellant never had any interest in buildings higher than four stories (The 4 storey limit had come in by the end of 1988). In 1990, the intents became:

- “4. **Residential High Density Zone** – This zone is intended to provide for areas of unit accommodation for predominantly holidaymakers and tourists. There are limited areas of land included within the Residential High Density Zone and it is not intended to increase the area of land included within this zone over that existing at the appointed day. Buildings of up to four (4) storeys in height will be found in this zone and high levels of design, aesthetic and landscape treatments are demanded, commensurate with the tourism objectives of the Strategic Plan. To encourage diversity of building form and further control the scale and bulk of buildings within the Residential High Density Zone, a maximum gross floor area for any site is stipulated.

The table of Zones provides for a broad range of uses which may be achieved with the consent of Council, all of which

are intended to provide a level of attraction or service, associated with the holiday and resort functions found within this zone. ...

6. **Future Urban Zone** – The intent of this zone is to set aside areas for planned urban development until all services and all urban facilities can be provided. The ultimate land use will be predominantly residential and the Table of Zones reflects this intention by limiting land uses which may be achieved with consent, to those which are likely to be conducted on a temporary or interim basis or those which may be compatible with urban residential functions.

The rezoning of land included in the Future Urban Zone for other than residential land uses, will only be considered where such land uses will necessarily be associated with urban areas, and where such rezonings accord with the Strategic Plan. ...

18. **Non-Urban Zone** – This zone includes land, which is generally in close proximity to urban areas, where that land is considered to be unsuitable for urban development. Land included within this zone will be adversely affected by excessive slope, inundation by flood waters, poor subsoil conditions giving rise to foundation difficulties, etc, which have been determined to be of such significance that urban uses should not be permitted. Land included in the designated Sand Dune Problem Areas, Drainage Problem Areas, Steeply Sloping Land and Areas Subject to River Flooding upon the Scheme Maps and which feature high levels of constraint, are included in this zone.
19. **Open Space Zone** – This zone includes private and public land used or intended for use for passive open space/park functions or for sport and recreation purposes. Some land included within this zone serves buffer or conservation functions. In appropriate areas, land included within this zone will be suitable for development to cater for indoor and outdoor sports, with associated facilities such as amenities blocks, stadiums, kiosks, car parking facilities and the like.”.

Zonings for the appellant’s land did not change. Only the first sentence of the RHD intent as at 1985 survived. What follows in the revision of paragraph 4 is plainly a set of new restrictions – an indication that in 1990, two years after the first Strategic Plan, the existing arrangements may have been allowing more intensive development than was by 1990 notions acceptable. (The four storey limit had come in by the end of 1988.) The 1990 intent is more prescriptive than its predecessor, set out in the preceding paragraph. The outcome of this appeal depends not on changes made in the wording of planning instruments which speak for themselves, but on consequential changes, if any, in the market values of specific sites affected, in particular by new restrictions limiting development potential. The culprit here is said to be the new strategic plan, regarding whose effects the parties present diametrically opposed cases. There is much room for argument about its effects, whose assessment obviously requires a proper

understanding of the effects of its predecessor. There had been changes in the zoning provisions in 1990, which greatly affected development potential of the site. Those were not the subject of any compensation claim of concern to the court. Whether in this appeal the appellant can recover compensation for later changes in December 1997 said by it to be consequent upon the new strategic plan to the extent they can be assimilated with it, has been the subject of controversy.

Amendments to Town Planning Scheme 1997

- [33] There are issues arising from amendments effected to the town planning scheme schedule effected in December 1997, in particular those reducing maximum densities permitted in the RHD zone were so much part and parcel of the 1997 strategic plan's coming into effect, "inextricably linked" to quote the appellant's written submissions at 386ff or were something independent and irrelevant as at the relevant date for purposes of the appellant's compensation claim, as the Council submits at 450ff.
- [34] On 29 August 1997 the Council advertised in the Noosa News a "proposal to amend", commencing as follows:

**"PUBLIC NOTICE OF A PROPOSAL TO AMEND A
PLANNING SCHEME
Section 2.18**

An amendment to the Planning Scheme for the Shire of Noosa is proposed by Noosa Council.

The proposed amendment relates to the Schedule to the Planning Scheme and includes the following:-

- changes to some definitions and adding new definitions
- delete the Tourist & Entertainment Facilities Zone
- changes to some of the Intents of the Zones
- changes to the Table of Zones
- changes to the existing use provisions
- changes to a number of development standards including residential, commercial and carparking.

Particulars of the proposed amendment will be open to inspection at Council's offices ..."

3 October 1997 was the cut-off date for requesting details of the proposed amendment by mail or otherwise and for the making of submissions. At the Council's offices, one would have located a single page summary commencing:

"NOOSA COUNCIL

PROPOSED AMENDMENTS TO

THE SCHEDULE TO THE PLANNING SCHEME

**THE AMENDMENTS PROPOSE A SERIES OF CHANGES
FOR REASON OF-**

- THE NEW STRATEGIC PLAN
- NEW INITIATIVES
- CLARIFICATION OR UPDATING OF PROVISIONS

THE CHANGES RELATING TO THE NEW STRATEGIC PLAN ARE AS FOLLOWS-

- RESIDENTIAL DEVELOPMENT DENSITIES ARE TO BE REDUCED IN-
 - THE RESIDENTIAL LOW DENSITY ZONE (120 TO 100 P/HA)
 - THE RESIDENTIAL MEDIUM DENSITY ZONE (200 TO 160 P/HA)
 - THE RESIDENTIAL HIGH DENSITY ZONE IN HASTINGS STREET (340 TO 280 P/HA)
 - THE RESIDENTIAL HIGH DENSITY ZONE OUTSIDE HASTINGS STREET (340 TO 250 P/HA).
- IN AREAS WITHOUT SEWERAGE, RESIDENTIAL DEVELOPMENT SHALL NOT EXCEED DUPLEX DWELLINGS
- CHANGES HAVE BEEN MADE TO THE PROVISIONS OUTLINING THE INTENTS OF THE VARIOUS RESIDENTIAL AND FUTURE URBAN ZONES”

and 12 pages following of “suggested amendments”. The one change in the definition of “Building height in storeys” has been noticed elsewhere

“1.13 INTENTS FOR THE ZONES

PART: B DIVISION: 3
 CLAUSE: 10(6) TABLE/APPENDIX: Nil

SUBJECT: Intents of the Zones

ISSUE: The Intents require review for consistency with the approach of the Strategic Plan.

...

- (4) **Residential High Density Zone** – The Residential High Density Zone provides for high density residential uses, with building heights of 3 to 4 storeys. This zone is intended to provide for areas of unit accommodation for holidaymakers and tourists. The Strategic Plan provides for multiple dwellings, accommodation buildings and group housing developments in this zone. ...

...

- (6) **Future Urban Zone** – The intent of this zone is to retain areas for future urban development until a time when all

services and urban facilities can be provided. The ultimate land use will be predominantly residential and the Table of Zones reflects this intention by limiting land uses which may be achieved with consent, to those which are likely to be conducted on a temporary or interim basis or to those which may be compatible with urban residential functions.

The zone is generally bounded by real property boundaries and consequently may include land feature environmental constraints that preclude its use for urban purposes. These aspects require specific consideration in the assessment of any planning application. ...”

- [35] In 1.28.1 the suggested amendment of Appendix XV Part F in respect of maximum population density for the RHD zone for all sites (whether larger or smaller than the benchmark of 1,000m² site area consulted in other zones) reduced the maximum to 250 persons from 340. The above material under this heading may be found in Appendix 1.6.7(ii) in Exhibit 124, the supplementary joint expert reports of the architects dealing with the After Case. At p 56 Mr McKerrell identified:

“... proposed changes of particular relevance to RHD zoned Area A which were identified in part as:-

- Section 1.13.1(4) – ‘...building heights of 3-4 storeys’ are proposed in the RHD zone. This was to replace the existing planning scheme provisions which stated that ‘buildings of up to four (4) storeys in height will be found in this zone.’
- ‘Performance standards for multiple dwellings ... seek to control the impact of these buildings ...’
- Section 1.28.1 – It was proposed that a downgraded RHD maximum population density of 250 persons/ha would replace the maximum 340 persons/ha population density provision in the existing planning scheme.

MTM states that this document was in the public realm on the Relevant Date and that the document would have been considered by the town planner, architect and/or PP.

NR believes that the document referred to by **MTM** was most possibly in the public area for the purposes of gaining comment and feedback from stakeholders such as the residents of Noosa, potential developers as well as consultants, and others working with the plan. There could be no guarantee that what was proposed would become law in any way, shape or form. ...”

The “downgraded” density cap was particularly influential in limiting what Mr McKerrell thought could be achieved as the highest and best use in the after case: see p 137. He proposes eight buildings of three storeys (two linked by an “ancillary services” component), only four of four storeys and two clusters (a “building”-equivalent footprint) of two storey duplexes. As to height, I think that as a misreading of the change which I see as setting a minimum building height of

three storeys, I do not see how it can be regarded as precluding four storey structures.

[36] The Council makes telling points in this regard:

- “452. That the development potential of the Land would be diminished in the after case as a consequence of the August 1997 proposed amendments to the 1990 Planning Scheme was not a matter advanced in the Points of Claim.
- 453. Further, and in any event, the language of section 3.5(1) and (8) of the P&E Act tells against consideration of the August 1997 proposal in connection with a claim for compensation that arises on the coming into force of the 1997 Strategic Plan.
- 454. In addition, Mr McKerrell could offer no cogent explanation as to why a prudent purchaser would have regard to the document in the after case, but not in the before case (see **T21-11/L42 – T21-17/L38**).”

There was cited in support of 453 *Lubrano v Brisbane City Council* [1995] QPLR 81 at 83:⁶

“... Mrs Heinke (who was called by the Respondent) was of the opinion that any application for consent for a use of an industrial kind was likely to be unsuccessful because of its incompatibility with residential use which would have been seen as the preferred type of development for the area in question.

It appears however that, in reaching this conclusion, she was influenced by planning indications that occurred prior to gazettal and which related to the prospect of a change in the area’s zoning (except in relation to land fronting Lytton Road) to protect the amenity of existing residential use in the area. Particular reference was made to a minute of the Planning Policy Advisory Committee...

...

If one has, in looking at the “before” situation of the subject land, to exclude from consideration the impending change of zoning, it would follow, in my view, that one should not be distracted by informal (in the sense that they are not part of the Town Plan) expressions of planning strategy that contemplated and evidently led to the change in zoning.”

In opening addresses, at the beginning of the appeal hearing, it was made abundantly clear by Mr Gibson that the Council’s view (which I think is a correct one) is that the December 1997 changes may well have caused injurious affection, for which compensation could have been but was not claimed; it is not open to the appellant to use a compensation claim based on the December 1997 changes

⁶ This is the decisions relied on by the appellant as authority for ignoring the draft 1997 Strategic Plan, etc in determining market value at the relevant date.

which, from the standpoint of the relevant date, might never have come about. In similar vein, I do not think it was justifiable to frame the highest and best use in the after case by reference to restrictions which, as things stood on the relevant date, might or might not come to pass.

Population Density and GFA Restrictions in the Zones

[37] Appendix XV from 1990 provided:

APPENDIX XV

Performance Standard	Residential Low Density Zone	Residential Medium Density Zone	Residential High Density Zone	Commercial A and Commercial B Zones
Minimum site width (metres)	15	15	13	15
Maximum population density, sites less than 1000 square metres (persons)	5 persons plus 0.5 persons per 35 square metres of site area in excess of 600 square metres	7 persons plus 0.5 persons per 16 square metres of site area in excess of 600 square metres	As for sites of 1000 square metres or more	7 persons plus 0.5 persons per 16 square metres of site area in excess of 600 square metres
Maximum population density, sites of more than 1000 square metres or more (persons per hectare)	120	200	340	200
Maximum gross floor area (square metres)	Maximum allowable population in persons multiplied by 40	Maximum allowable population in persons multiplied by 40	Maximum allowable population in persons multiplied by 40, provided that the maximum gross floor area shall not exceed 13600 square metres	Maximum allowable population in persons multiplied by 40
Maximum site cover (percent)	40	35	45	35
Minimum landscaped open space (square metres)	Proposed population in persons multiplied by 40	Maximum allowable population in persons multiplied by 30	Maximum allowable population in persons multiplied by 14	Maximum allowable population in persons multiplied by 30
Maximum building height in storeys	2	3	4	3
Maximum building height in metres	8	12	15	12

This had a predecessor in the old Appendix X⁷, but the limit to the 13,600m² of GFA per site, which featured largely in the appeal, and had been overlooked by some experts in designing development proposals to establish “yields” possible for the site in different scenarios, was new. Changes to the Table of Zones in 1990 imposed new restrictions on development of the site. Column IV uses for which Council consent was required, but (by definition) contemplated, were reduced in relation to the site; it not having frontage to Hastings Street, hotels (previously in column IV) and Service Stations became prohibited development along with other uses such as “Tourist facilities.” The reference to “conservation functions” of the Open Space Zone was new in 1990. Dwelling houses were permitted development in all residential zones (3 storeys or 12 metres high in RHD and RMD, otherwise 2 storeys and 8 metres) and in the Future Urban. In Residential Single Unit, Future Urban, Non Urban and Open Space Zones, accommodation buildings, duplex

⁷

It prescribed a minimum site area of 2,500m², and ability to contain a 50m diameter circle within site boundaries, also somewhat more stringent maximum site cover and landscaping provisions.

dwellings and multiple dwellings were prohibited; those uses were consent development in all of the residential zones mentioned (Residential Single use being excluded) so that Council consent had to be applied for and obtained.

- [38] Apropos permitted uses, one might note the definitions in the PEA s 14:
 “**permissible use**’ means a use of premises which may only be undertaken pursuant to a planning scheme with the approval of the local government pursuant to section 4.13;

 “**permitted use**’ means a use of premises which may be undertaken pursuant to a planning scheme without the approval of the local government notwithstanding that the local government may require an application for the setting of conditions for the issue of a certificate of compliance or in respect of any other matter;

 “**prohibited use**’ means a use of premises which by virtue of the zone in which the premises are situated, is a use which is not permitted use or a permissible use;”

A useful discussion of consent uses is found in *Bell v Noosa Shire Council* [1983] QPLR 311, at 313:

“Because the proposed use is a consent use, it obviously is one which, in the overall scheme of the Town Plan, should be permitted in a appropriate case. Otherwise it would have been made a prohibited use. In my opinion an appropriate case is one in which one can give effect to the ancient right of a landowner to use his land for any lawful use he desires while at the same time protecting the modern rights (given by Town Planning Schemes) of the other landowners in the vicinity not to have the enjoyment of their land detrimentally affected to an unreasonable extent. The qualification ‘to an unreasonable extent’ is obviously a necessary one, because any development land almost certainly will have some detrimental effect on other land in the vicinity. Under a town planning scheme however a landowner must be taken to contemplate that a nearby parcel of land *will* be put to one of the uses to which that land may be put as of right. He must also be taken to contemplate that such a parcel of land *may* come to be put to one of the uses permitted with the consent of the Local Authority. Those are the expectations which he must be taken to have in relation to that parcel of land. So while it may be that as Mr Hewison , the town planner called by the Respondent, said, the development of a consent use such as a caravan park would have an adverse psychological effect on those residents who have built permanent homes in the area, in that they have a particular image of the area, I cannot see that fact alone as being properly very persuasive to the mind of a town planning authority. The consent use was always possible; the real question is whether if the proposed use is established on the subject land and it will substantially degrade the area, whether it would unreasonably disrupt the lives of the occupants in the neighbourhood.”

Strategic Plan environmental objectives added to Zone intents

- [39] I think it is clear that the new GFA restriction in Appendix XV is to be applied with reasonable rigour, as a way of achieving the intent set out in words in 1985. By 1990, the Shire's first Strategic Plan had come into effect, featuring new provisions in Tourism Objective 3(3) to maintain and enhance the Shire's natural attributes and Urban Objective 4(5):

“To ensure that the expansion of the urban area occurs in areas which do not create significant environmental impacts, and within areas which do not suffer physical or engineering constraints which cannot be overcome.”

– sentiments filled out in each case in text following.

The urban objectives' "aim" was to encourage residential growth to meet community and tourist needs and lifestyles, having regard to the needs of the "natural environment". Unremarkably the public and private open space objectives have a "conservation" aim, in particular:

- “(1) To preserve the Noosa River and Lake System as a natural resource within the Shire...
- (2) To retain, in a natural state, areas of ecological and environmental significance and to consolidate and secure such areas in public ownership...
- (6) To ensure that the development of privately owned land included within the Public and Private Open Space Area, is in keeping with its setting and has due regard for the inherent qualities of the land.”

“Inordinate levels of impact” disfavoured

- [40] Apropos (1) and the explanatory paragraphs within it, the appellant contended that the only development proposals disfavoured were ones which would have “inordinate levels of impact” on the environment, apparently on the basis that “inordinate” was a synonym for massive, enormous, huge or the like. In my opinion the term has the second of the first two meanings given in the Oxford Dictionary:

“1. Not ‘ordered’; devoid of order or regularity; deviating from right or rule; irregular, disorderly; not regulated, controlled, or restrained.

1398 TREVISA *Barth. De P.R.* III. xxv (Add. MS 27,994), Anon be puls is swift and picke quakinge and inordinat. **1485** Act I *Hen. VII*, c. 7 Statutes.. for the Punition of unlawful and ordinate Hunttings in Forests. **1581** J. BELL *Haddon's Answ. Osor.* 414 That the cryme which is inordinate may be reduced to the order of Justice. **1625** FLETCHER *Noble Gent.* II. i, When did ye there keep such inordinate hours? **1692** RAY *Dissol. World* i. (1732) 3 A rude and inordinate heap. **1774** STRANGE in *Phil. Trans* LXV. 43 From the inordinate course of the Appenines in general, the volcanic hills of that chain afford no observation so interesting to physical geography. **1898** J. R ILLINGWORTH *Div. Immanence* iv. *4. 94 To remedy this lawlessness, to restore this inordinate state of humanity to order.

2. Not kept within orderly limits, immoderate, intemperate, excessive.

c**1386** CHAUCER *Pars. T.* P340 The clothyng... is cowpable.. for the superfluitee, or for the inordinate scantnesse of it. c**1425** *Orolog. Sapient.* ii. in *Anglia* X. 342/2 Querleyde with a inordinate sorowe and vnskilfulle heuynesse. **C1530** *Pol. Rel & L Poems* 31 Inordynat bilding causith hasty sale of placys. **1545**

BRINKLOW *Compl.* 6b, *Filled w. the Spirit* (1867) 15 Drunkenness with wine, or inordinate drinking, is altogether inconsistent with being filled with Spirit. **1716** ADDISON *Freeholder* No. 30 P5 He only taxes us with our inordinate Love of Pudding. **1791** BURKE *Let. Memb. Nsat. Assembly Wks.* VI. 31 Their object is to merge all natural and all social sentiment in ordinate vanity. **1840** MISS MITFORD in *L'Estrange Life* (1870) III. Vii. 108 Making us pay an inordinate rent for the luxury. **1872** YEATS *Growth Comm.* 284 The prices... were so inordinate.”

and in a context of planning may be seen to equate to unacceptable. It seems to me that in this context, given the prospects of conditions being imposed on any development, we can forget about “inordinate levels of impact” in the sense of uncontrolled or unregulated levels. This conclusion has implications for the validity of a contention that when the expanded, differently described open space designation from 1997’s intent called for “exclusion of development which would have impact on [environmental] values [referred to] irrespective of the scale of impact or the time taken to result in unmeasurable impact” – with a view to triggering investigations or measures to deal with the situation where relevant “development is proposed” (19.7.5.4 – see [16] below), there is a “paradigm shift” or anything like it. Further, standards and values change over time. Impacts that were acceptable in the 1980s or earlier may no longer be deemed acceptable in the 1990s. Consideration of the acceptable impacts is, of course, an exercise frequently undertaken by assessment managers and by this court, and unsurprisingly is one acknowledged in academic works, e.g. Stein *Principles of Planning Law* 197. The appellant’s written submissions in paragraph 223, as noted elsewhere, acknowledge that what is “environmentally acceptable” is something that “has evolved over time”. This analysis would be the same on the basis of the Macquarie (Revised Third Edition) definition propounded by the appellant:

“**inordinate** /ɪnˈɔːdəneɪt/ *adjective* **1.** not within proper limits; excessive: *inordinate demands*. **2.** disorderly. **3.** unrestrained in conduct, etc. **4.** irregular: *inordinate hours*. [ME *inordinat*, from L *inordinātus* disordered] – **inordinacy**, **inordinateness**, *n.* – **inordinately**, *adv.*”

Strategic Plan prior to “the relevant date”

- [41] The very first Strategic Plan for Noosa, gazetted on 13 February 1988, exhibits the familiar format of gazetted planning schemes with text in two columns. It begins as follows:

- “1. This strategic plan is prepared in accordance with the provisions of the **Local Government Act 1936-1987** and consists of three parts. These parts are: -
- (1) Two maps, one making reference to the overall Shire and a second more detailed map of the coastal urban area of the Shire. These maps identify the ultimate preferred dominant land uses for the Shire.
 - (2) A statement of aims and objectives of the Noosa Shire Council in respect of the preferred dominant land uses for the orderly development and use of land within the Shire. The need for these aims and objectives, the method of implementation and the criteria for determining the type, scale, distribution or development form of the various uses

has been established as an integral component of the preferred dominant land uses (PART A).

(3) A document containing supporting information used in the preparation of the plan (PART B).

The preparation of both the strategic plan maps and objectives flow from one principal broad aim for the Shire which in essence is planning ideal. The aim being: -

‘To enhance the health, safety, convenience and safeguard the economic, cultural, social and general welfare of the people and the amenities of the Shire and to promote developer and public confidence through consistent development control of the Shire’.

It is the purpose of the strategic plan maps and statement of objectives to convert this broad aim into practical guidelines to be used in the control of development within the shire.

PREFERRED DOMINANT LAND USES

2. The strategic plan maps designate preferred dominant land use categories which are not zones, and do not confer development rights for individual sites. Uses which may establish within the preferred dominant land use areas are subject to the land in question being included in an appropriate zone on the scheme maps. This Plan in now way abrogates the use rights applicable to the existing zones under the town planning scheme.”

Details of the preferred dominant land use categories and other information provided on the maps followed, of which these are of present relevance:

“(1) Tourist Facility Area

An orange circle is utilised to indicate those areas which are or will develop as significant tourist facility precincts. The size of the particular circle reflects the scale or significance of the precinct in a strategic sense.

(2) Tourist Facility Growth Area

Areas within the Shire which are considered to have *potential* as a tourist facility growth area are shown by a regular, broken, orange circle. Because the whole of the Shire of Noosa has significant tourist growth potential, the symbol does not define all areas, but those general areas that are considered to have significant and extensive potential for growth. Further investigation would be required to ascertain the form of development which is suitable at these locations.

(3) Urban Area

This area is coloured pink on the maps and essential defines those areas which will be developed for residential uses, comprising both permanent and tourist accommodation. Integral to the proper functioning of residential uses within the urban area, is the provision of a range of support uses, open space, essential services and

infrastructure, and therefore the urban area is not confined to residential uses only. ...

(7) Public and Private Open Space

Existing and proposed areas of public and private open space are coloured green on the maps. This land use area includes National Parks, Fauna Reserves, Conservation Reserves, Environmental Parks, Recreation Reserves, Parks and State Forests.

TOURISM OBJECTIVES

3. AIM: TO PROMOTE, ENHANCE AND CONSOLIDATE NOOSA SHIRE'S ROLE AS A MAJOR TOURIST AND HOLIDAY DESTINATION.

OBJECTIVES

(1) To provide adequate land and opportunities for all forms of tourist entertainment, recreation and accommodation facilities.

The tourist industry is an important component of the economic base of the Shire and has significant effects upon population and employment. Council therefore intends to encourage tourism by fostering of development that is orientated towards the tourist and holiday maker. In order to ensure that all such forms of development can be fostered, it is necessary to identify land which may be developed for tourist purposes. The strategic plan maps define areas within the Shire which are or will develop as significant tourist precincts. ...

(2) To consolidate the established tourists precincts, and encourage the development of new tourist precincts in appropriate locations.

Major tourist precincts within the Shire are located at Hastings Street and the Noosaville foreshore area. These areas are all feature accessibility, central location and visibility, which are all important features for the success of tourist facilities. Various advantages accrue to the existing precincts in encouraging additional facilities to these established areas. Such advantages include the reduction of transportation difficulties, the prevention of problems associated with intrusion into permanent residential areas and the creation of tourist focus. ...

(3) To maintain and enhance the Shire's natural attributes.

Noosa Shire contains an extensive range of natural attributes which serve as major attractions in their own right. Some of these include the Noosa Heads National Park, Cooloola National Park, Lakes Cootharaba, Coorobah, Cooloola and Weyba, Noosa River and environs, various State Forest area and the beaches. *It is necessary that these areas be maintained and enhanced to preserve their integrity. The careful assessment of the potential impact of development proposals in or adjacent to such areas will be of*

importance. Detailed planning controls are required to guide Council and developers in this regard, and it is Council's intention to supplement its existing controls where deemed necessary. Council will also strive to improve community awareness of the benefits which may be derived from the maintenance and enhancement of the Shire's natural attributes. ...

URBAN OBJECTIVES

4. AIM: TO ENCOURAGE RESIDENTIAL GROWTH TO MEET COMMUNITY AND TOURIST NEEDS AND LIFESTYLES, HAVING REGARD TO THE NEEDS OF THE NATURAL ENVIRONMENT AND COMMENSURATE WITH INFRASTRUCTURE SERVICING CAPABILITIES.

OBJECTIVE

(1) To provide for a diversity of accommodation styles to cater for the varying needs of the urban community. ...

(5) To ensure that expansion of the urban area occurs in areas which do not create significant environmental impacts, and within areas which do not suffer physical or engineering constraints which cannot be overcome.

In consideration of proposals for expansion of the urban area, into areas hitherto undeveloped, Council will consider –

(a) the effect of the proposal on the natural environments. Whilst progress and development is encouraged, the destruction of important areas of the natural environment is not to be condoned. It is recognised that the protection of certain natural areas is necessary for the future image of the Shire.

In order to determine the potential effect of any proposal upon areas determined to have environmental significance, Council may require the submission of an Environmental Impact Statement. Wherever possible environmentally significant land should be retained as open space and appropriately buffered from adjoining development. Clearing of areas should be carefully and sympathetically effected.

(b) the physical and engineering constraints of an area. Council considers that it is necessary to ensure that before development occurs all physical and engineering constraints can be overcome. The town planning scheme defines areas of constraint including areas prone to river flooding, drainage problem areas, and dune problem areas, steeply sloping land and erosion prone areas. ...

PUBLIC AND PRIVATE OPEN SPACE OBJECTIVES

7. AIM: TO PROVIDE AND MAINTAIN A RANGE OF OPEN SPACE AREAS OF LOCAL TO REGIONAL SCALE, AND TO PROMOTE, WHERE APPROPRIATE, THE USE OF THESE AREAS FOR CONSERVATION, EDUCATION, RECREATION AND TOURIST PURPOSES.

OBJECTIVES

(1) To preserve the Noosa River and Lake system as a natural resource within the Shire.

The Noosa River and Lake system are significant natural resources which benefit not only the residential community but also the tourist population and associated businesses. The retention of the areas in their natural form will ensure that their existing tourist and recreational functions may not only be retained but may be enhanced. Integral to the river's and the lake's function is the use of land adjacent to the foreshore areas. In order to preserve the natural river and lake environments, control of land adjacent to these areas is essential, particularly in sensitive areas, such as the North Shore, Lake Weyba and the Eenie Creek area.

In considering any development proposal, Council will carefully assess any potential development impact by way of physical or visual intrusion on the river and lake system. Proposals which would have inordinate levels of impact which either physically damage or impair the integrity of the waterway and adjacent environs will not be favourably considered. The incorporation of the broad buffer strips which visually screen and isolate such man made developments is a desirable goal. The strategic plan maps broadly support the Policy document by indicating that the Preferred Dominant Land Use among most river and lake foreshore areas is Public and Private Open Space. The intention is to preserve the natural or existing vegetated views from the water way system. The criteria does not take into account the specific topographical features in those areas.

(2) To retain, in their natural state, areas of ecological and environmental significance and to consolidate and secure such areas in public ownership.

A significant element of attraction to the tourist within the Shire of Noosa, is the extensive areas of open space located within its boundaries. Whilst a considerable portion of this open space comprises undeveloped or rural lands, the Shire also features extensive areas of National Park, Environmental Park, Fauna Reserve and State Forest (in total some 22,040 hectares).

Having regard to the fact that the shire is somewhat dependant upon its tourist functions, it is essential to the wellbeing of the resident population, to ensure that this image is not impaired. One method of ensuring the ongoing protection of such areas is to secure such areas in public ownership and preserve them as National Parks,

Environmental Parks, Fauna Reserves, State Forests and Park and Recreation Reserves. An additional method is to promote the land's inherent tourist and educational potential. In so doing, both tourist and open space objectives may be achieved. ...

(6) To ensure that the development of privately owned land included within the Public and Private Open Space area, is in keeping with its setting and has due regard for the inherent qualities of the land.

The strategic plan recognises that there is land included within the Public and Private Open Space area held in private ownership, which will be the subject of development applications. *Land included within this category generally features some inherent visual quality which, in broad terms, is desirable to preserve.* It is not the intention of the plan to preclude development of such privately owned land, but to ensure that the nature of development proposals receiving approval will be in keeping with the setting. *Thus it is intended to consider such development proposals on merit, with the desired goal of preserving the general integrity of that land and its inherent visual amenity.* This may be circumstances pertaining to the particular parcel of land. Intensity of development, visual treatment, general standard of design and the provision of setbacks and landscaping will all be important criteria in assessing such proposals. In addition, the furthering of Council's Tourism Objectives and other Public and Private Open Space Objectives shall also be of importance."

- [42] Part B of the 1988 Strategic Plan contained in map Figure 7.1 Tourist Development opportunities which identified 18 locations, including the site of present concern. Reference was made in the appeal to three of the 18. The appellant's land is known as Settler's Cove, its southern neighbour is the Estuary, or Noosa Sanctuary (now the RACV Resort). Reference was made to the way in which a site on Noosa Hill, then known as the Banana Plantation (now Viridian Resort), because of the caveat in the second sentence of the brief description which was not reflected in the descriptions of the other sites – a circumstance which the appellant says changed, to its injury, in the succeeding strategic plan. One reads in Part B:

"7.6 TOURIST DEVELOPMENT OPPORTUNITIES

The shire has numerous sites available for a range of tourist related developments (Fig. 7.1). This section acknowledges those sites which have potential for development within the life of the Strategic Plan. ...

8. 'Banana Plantation' – Situated between the National park and Morwong Drive, this elevated site offers an opportunity for development of a tourist/accommodation facility. The steep slope and exposed nature of the site warrants careful planning and design. ...
15. Settler's Cove – Located adjacent the Noosa River within Noosa Heads, this site is intended to be developed for a resort hotel, residential units, tavern, related commercial and

retail functions, supporting facilities, limited boat harbour and pedestrian access system.

16. The Estuary – Again located upon the Noosa River, this site is intended to be developed on a water related theme of a resort nature. ...”

and also in its “general conclusions”:

“9.0 DEVELOPMENT OF OBJECTIVES

From the preceding discussions it is possible to determine a series of objectives for the Shire of Noosa. It is firstly though, appropriate to summarise some of the basic and general conclusions that may be drawn from the information provided previously.

9.1 GENERAL CONCLUSIONS

9.1.1 Population ...

9.1.2 Tourism

The Shire, with its unique natural environment and unusually high proportions of State Forest, National Parks, etc, has numerous opportunities to realise its assets and consolidate and expand its tourist industry functions. It is essential to recognise that this industry, in economic terms is and has replaced primary industry as the predominant industry within the shire. Accordingly, every opportunity to facilitate tourist development must be encouraged, whilst at the same time, protecting and maintaining those assets which have been key elements of attraction to date. In some instances, this may entail restrictive planning practices to achieve desirable goals, however, these need not be regarded as prohibitive in nature. Future detailed planning is called for to direct and guide developers in assessing and developing sites. In this regard, the Strategic Plan should provide not only broad guidelines for assessment of such proposals, but also positive development statements indicating which areas are or may be suitable for development purposes.

9.1.3 Constraints

Maps C.4 and R.4 outline development constraints comprising mainly those relating to tenure or physical characteristics. As indicated in Section 4.0, constraints may be regarded as being either “hard” or “soft”. For instance, it is not possible to develop for urban purposes, a National Park, yet an area of low lying flood prone land may, at a cost, be converted to a canal estate. Accordingly, the impact or effect of any particular constraint is a matter of degree. Further, a constraint within the rural area may well represent an opportunity in the coastal urban area, where economics may justify the circumstances. Therefore constraints should be regarded as being relative and dependent upon factors such as location, timing and the prevailing economic circumstances. Land use planning must therefore seek to control and guide development in areas where the particular degree of impact of any constraint may alter.

The 1997 Shire of Noosa Strategic Plan

- [43] We now come to the planning instrument which gives rise to the appellant's application for compensation and this appeal. The Shire of Noosa Strategic Plan was gazetted on 5 September 1997 according to the current fashion, replete with mood-setting photographs. It runs to 175 pages of print, exclusive of maps. The predecessor barely made one hundred pages. The passages referred to in opening addresses by counsel were:

"18.4 INTENT"

Noosa Heads/Noosaville will retain its role as the focus for visitor accommodation and services in the Shire. Whilst Hastings Street has been the principal focal point, its capacity to support additional development and additional visitor populations, while maintaining its character is finite. It is intended to maintain this character. As a consequence, substantial increases in parking, provision of significant road widening, provision of a bridge from Noosa Sound to the Spit or Hastings Street and the like are not intended. The maintenance of greenspace, controls on the extent, scale and aesthetics of development and on the amount of commercial development will be key factors. ...

Environmental values across the Noosa Heads/Noosaville locality warrant protection. Many of these values have been identified in studies which support this Plan. In the lowland areas, there is a close relationship between environmental values and land which is floodprone. Where those areas have not been substantially modified as a consequence of development or commitments to development in the past, they should be retained in their natural state.

The environmental and aesthetic values of:-

- Noosa National Park and Keyser Island and Weyba Creek Conservation Parks;
- The vegetated hills and dune systems which variously frame Noosa Heads, Laguna Bay, Noosa Inlet and the Hastings Street precinct;
- Noosa Spit and the beaches;
- Noosa River, Lakes Doonella and Weyba and Eenie and Weyba Creeks and their associated riparian communities; and
- The koala corridor between Noosa National Park and vegetation stands around Lake Weyba.

are of the highest significance and will require the highest order of protection.

KEY CONCEPTS

1. Maintenance of the Noosa Heads/Noosaville locality as the focus for visitor accommodation and services in the Shire...
18. Protection and maintenance of the character of the open spaces and along the Noosa River foreshore.
19. Maintenance and improvement of water quality standards in the waterways of the Noosa

Heads/Noosaville locality, particularly those of the Noosa River, Lakes Doonella and Weyba and Eenie and Weyba Creeks.

20. Protection of major open space network links comprising:-

- The various sections of the Noosa National Park and their connections along Weyba Creek, to the Noosa Spit and south to those equivalent areas in the Eastern Beaches locality.
- Foreshore and beach areas along the Noosa River north of Gympie Terrance and Hilton Terrace.
- Lake Weyba to the Tewantin State Forest.
- The riparian corridors of the Noosa River, Lakes Doonella and Weyba and Eenie and Weyba Creeks.

19. NOOSA HEADS/NOOSAVILLE OBJECTIVES & IMPLEMENTATION

19.1 URBAN DETACHED HOUSING

Preferred Dominant Land Use	Detached Housing <i>Dwelling houses and ancillary uses in an urban setting. ...</i>

19.1.1 Objective: *Provide urban detached housing areas with high levels of amenity consistent with the varied character of the locality's residential neighbourhoods. ...*

19.2 URBAN SEMI-DETACHED & ATTACHED RESIDENTIAL

Preferred Dominant Land Use	Semi-Detached & Attached Residential <i>Units, duplex dwellings, dwelling houses and the like in an urban setting. ...</i>

19.2.1 Objective: *Provide urban semi-detached and attached residential areas with high levels of amenity consistent with the maintenance of the character of the Noosa Heads/Noosaville locality and the particular part of the locality in which the area is situated.*

19.2.1.1 The Semi-Detached & Attached Residential designation provides for resident and visitor accommodation in detached, semi-detached and attached development forms. The designation includes

two broad categories of land, the first located on slopes and the second located on land without significant slope. ...

19.2.4 Objective: *Protect sites for resort developments which focus on the Shire's natural low key outdoor appeal and cultural values.*

19.2.4.1 *The Noosa Heads/Noosaville locality includes a number of larger sites where there is opportunity for the provision of visitor accommodation in resorts which are based on the Shire's natural low key outdoor appeal and cultural values. The sensitive development of these sites consistent with Tourism Aims 27.9.3.1-27.9.3.5 and 19.2.1.14, will assist the Shire's economy and provide employment for its residents. Each site has key values which enhance its suitability for visitor accommodation purposes, but in many cases these values can be impacted as a consequence of development. Considerable care is required in the development of the sites, in order to protect these values.*

19.2.4.2 *Because of the limited number of these sites in serviced areas and their size, location and character, they will be protected for visitor accommodation in resort developments. The sites comprise: - ...*

- Lot 2 RP889602 located at Banksia Avenue, Noosa Heads. The site has vistas across Noosa Inlet and Weyba Creek and to the dune systems of the Noosa North Shore/Cooloola locality and the sub-coastal escarpment to the west. Whilst part of the site is visually prominent, much of it is also secluded, yet its central location provides ready access to Noosa Junction, the Hastings Street precinct and the beaches. A large part of the site is also of environmental importance, featuring significant vegetation, open space network and fauna corridor values and steep dune systems. The prominence of part of the site, its environmental significance and its location on the shores of Noosa Inlet and Weyba Creek, require a sensitive approach to development, particularly in regard to maintaining the character of the surrounding area, maintaining the environmental values of Weyba Creek and Noosa Inlet and maintaining the significant environmental values across the site. ...

19.7 OPEN SPACE & ENVIRONMENTAL ISSUES

...

Preferred Dominant Land Use	Open Space – Conservation & Waterway Protection <i>Open space, where the protection of environmental values or adjacent waterways is of key importance. ...</i>

19.7.5.2 The Open Space – Conservation & Waterway Protection designation has been used to identify land with environmental values:-

- Of the highest order;
- Which warrant conservation status; or
- Which is in or should be included in public tenure.

19.7.5.3 Based on 19.7.5.2, the Open Space – Conservation & Waterway Protection designation in the Noosa Heads/Noosaville locality includes:-

- Noosa National Park and Keyser Island and Weyba Creek Conservation Parks.
- The vegetated hills and dune systems which variously frame Noosa Heads, Laguna Bay, Noosa Inlet and the Hastings Street precinct.
- Noosa Pit and the beaches.
- The foreshore areas of the Noosa River, Lakes Doonella and Weyba and Eenie and Weyba Creeks and their associated riparian communities.
- The koala corridor between the various parts of the Noosa National Park and vegetation stands around Lake Weyba.
- Land with significant vegetation values;
- Land comprising part of a significant open space network.

19.7.5.4 The intent for the areas identified in 19.7.5.3 is to maintain the environmental values of that land to the exclusion of development which would have impact on those values, irrespective of the scale of impact or the time taken to result in a measurable impact. Where there are threats to the maintenance of those values or where development is proposed which may result in adverse impacts on those values, actions such as the following will be considered:-

- a. On planning applications over or adjacent to land with an Open Space – Conservation & Waterway Protection designation:-
 - Require the submission of Environmental Impact Statements in order to assess the potential impact of development.
 - Require modifications to or refuse proposals where the development would result in adverse impacts on environmental values.
 - Set conditions of approval which will protect environmental values.
 - Require land to be dedicated to the Crown for open space purposes.
- b. Include land with an Open Space – Conservation & Waterway Protection designation within regulatory areas for the protection of significant vegetation values. ...

19.7.5.6 For private allotments wholly included within the Open Space – Conservation & Waterway Protection designation, the highest order of use is a dwelling house and subdivision of those allotments is not intended.”

It might be recorded that the inspection undertaken by the court confirmed the locational advantages attributed to Lot 2. Mr Gibson QC, representing the Council, sought to correct the impression that might have been given by Mr Hughes, for the appellant that the 1988 strategic plan was pretty much a green light for development and the 1997 one a source of restrictions and constraints that had not been there before. He said it was significant, for example, that 19.7 contemplated development applications being made. Essentially, the Council’s argument in the appeal is that under the 1998 Strategic Plan, the appellant would not have gained approval for the intensity of development it asserts would have been approved for purposes of this appeal and that the 1997 Strategic Plan would allow more intensive development than the appellant asserts. The Council’s position is that no compensation is payable.

- [44] Both strategic plans contained provisions specific to the site which are set out below in the discussion of the evidence of the planning experts who differed as to whether 1997 provided lesser or greater recognition and protection of the site for development, especially tourism-related.

The experts

- [45] The court heard from contending experts (29 of whom three on the Council’s side “doubled up”) in numerous fields. Ultimately, each of them was called on to indicate what evidence he would have given to a potential purchaser of the appellant’s site in relation to its realistic development potential, from the point of view of enabling others to reach expert views and in particular, at the end of the day, regarding what the market value of the site might have been both “before” and “after”. I propose to record the experts’ evidence, or a summary of it, in the order in which it was presented in tranches by expertise, subject to dealing with the penultimate tranche (planning) first, it covering the ultimately determinative factor in the appeal - given by reference to the views of experts in other disciplines. For some, there was a good deal of common ground, but pretty well universally the Council’s experts indicated that their advice regarding the relevant possibilities in the before case would have been more cautious. Speaking generally, the experts were short on detail about the level of costs that might be involved in implementing engineering and like solutions which they acknowledged to be technically feasible.
- [46] While the Council may bear the onus of showing that no compensation is payable, it must be the case that the appellant bears the onus of establishing the level of compensation, i.e. difference between market value of the site before the relevant date (on the assumption that there was no thought of the 1997 strategic plan coming about) and the market value immediately after the relevant date. It cannot be that the Council has some onus to make a case against every dollar the appellant might choose to claim – in which regard the appellant has fluctuated, claiming at different times sums up to about \$53 million dollars, exclusive of interest. The appellant’s broad difficulty is, in my opinion, that if the court is satisfied that the cautious advice given by the Council’s expert in a particular field

would have been given, then that would notionally have to be taken into account by the hypothetical potential purchaser along with such other more optimistic, bullish or “gung ho” advice as might have been offered.

The planners

- [47] The principal town planning joint report of Mr Buckley (for the appellant) and Mr Venn (for the Council), Exhibit 25, dated 16 August 2011, is an important and helpful document. Its format highlights the planners’ differences and greatly assists the court to indicate its views, which, generally speaking, align with Mr Venn’s. In section 2.1 the planners agree that the environmental constraints upon the subject site were the same prior to and after the “Relevant Date”. Features of the site which a prudent purchaser would have noted included its being the largest one close to both Noosa Junction (the principal shopping centre) and Hastings Street (the principal centre for tourism) – although convenient two-way access via Grant Street was not available until 2006⁸ – and, at the same time, its seclusion, its varied and interesting topography, including elevated areas offering views in a number of directions, with water outlook on two sides. The site’s good vehicular access would be noted and its “variable vegetation cover”; development of the site, having regard to the pattern of development in the wider area would be:

- effectively infill; and
- able to create its own environment and critical mass.

- [48] The zonings did not change, but it was noted that:
- “(viii) The 97 SP is its own document and understandably is not based on the 88 Planning Study (SP Part B) but instead relied on new and more comprehensive planning and environmental reporting.
- (ix) **JV** says neither SP should be should be regarded as being cadastrally based. The 88 SP map is of large scale, vague and is difficult to read, and was not on a cadastral base. Although the 97 SP did appear on a cadastral base, it was for mapping purposes only. It has been held on numerous occasions by the Local Government, and later the Planning & Environment Courts, that Strategic Plan Maps under the LGPEA were not to be read as relating to cadastral boundaries or to be enlarged to identify locational features that were only intended to be indicative of planning philosophy. **CB** adds that the interpretation relied on plans and maps being read together and familiarity with local conditions and guidance from the Part B.

⁸ See T35-17 to 23. Until then, Grant Street was one-way, returning to the site from Noosa Junction. Years before, the appellant had paid contributions towards the road works ultimately carried out (including acquisitions of land), for which it became entitled to credit, if not (as it has asserted since) immunity from further like contributions to Council as a condition of approvals for its site, this serving to lighten the level or impact of potential contributions for road works in putative development scenarios. This issue has nothing to do with the issue of whether the Main Roads Department’s requirements would have kept the southern part of Area B from being developed.

- (x) **CB** agrees the 1988 Strategic Plan is not cadastrally based, and that it was very much typical of Strategic Plans of the time.

The 1988 Strategic Plan for the then Noosa Shire Council was very much a ‘creature’ of its time. It was based on two maps which were not cadastrally based, although it is possible by reference to street alignments and geographical features to determine where particular land is located, and more importantly determine how such land was affected by the plan. However, the designation boundaries are not precise like a zone.

Strategic Plans of that vintage were encouraged to be general by formal State Government guidance, and the profession embraced them at the time. The formal direction was given by the then Department of Local Government and Planning.

The use of broad designations and symbols (such as dots, dashes and triangles) combined with the scale of plans meant that accurate scaling or measurement of plans was discouraged. Otherwise, bizarre outcomes might result where the width of a line may scale wider than a highway. The general intent and preferred direction was best identified by reading the text in conjunction with the geographical impression gained from the maps themselves.

This is reinforced in the text itself.

The best indicator of how a Strategic Plan is to be interpreted is to have regard to the heading on the first page of the Strategic Plan at ‘preferred dominant land uses’.

The words are deliberate in that they indicate a preference and also that land uses are dominant and not precise. The wording underneath that heading goes on to describe that preferred dominant land use categories are not zones and do not confer development rights for individual sites.

All these things differentiated Strategic Plans from the zoning of the land. It meant that development proponents routinely had obligations imposed on them to conduct site specific investigations to prove assumptions or expectations about site suitability and the applicable planning controls.

CB observes the respondent’s points of defence scale the symbols and designations applying to the land, which he believes is an inappropriate way of conveying the meaning of a Strategic Plan of that vintage.

The '97 plan being cadastrally based could be read with greater precision.

- (xi) **JV** says that a Strategic Plan is intended to be read as a broad overarching document without detail and does not carry development rights which, instead, are vested only in the planning scheme Schedule. He adds that the use of the word 'dominant' also conveys the fact that the strategy is not aimed at exclusivity but general character and that other uses not strictly in accord with the land use which is stated as 'preferred' may be encompassed or tolerated in some circumstances.
- (xii) **CB** says that, although Strategic Plans did not confer rights, they were the primary planning instrument to create expectations and describe intended outcomes. They were routinely the document used by all parties involved in development assessment to determine the path and form of land use change in any local government area. **JV** adds that they were a consideration but that the only real 'expectation' was to be gained from the development rights listed in a Table of Zones or Development conferred by the planning scheme Schedule."

[49] The glaring point of difference relates to whether the 97 SP was cadastrally based, in which event one should be able to place lines on it precisely on the ground, and it could be regarded as tightly prescriptive. Mr Venn's view is correct, in my opinion. Mr Buckley adhered to his view regarding "a change from whole shire strategic plan to something associated with finer scales" (T24-20). In reference to his Exhibit 4 he responded in this way to a question from Mr Hughes:

"Does that indicate to you as a planner, a much more fine level of data or a finely – more finely scaled mapping in the second case in 1997 compared with 1988?---Absolutely. The – the '88 plan was a creature of its time and used symbols and the – the broad broken line represented the tourist facility growth area was one that was general in its application and the curvy, linear nature of the urban area boundary. You contrast all that to the plan immediately to its right which has lines reflective of those having bearings and more precision and, clearly, as is part of my planning opinion, a much reduced area in terms of opportunity."

[50] He said on the following page, "Speaking professionally, a distinguishing feature of the '97 Plan is its precision and its reliance on cadastral boundaries." He said that certain anomalies in Exhibit 4 did "not in the slightest ... cut down the concept that this is terribly precise." This goes well beyond what was said about the instrument in *Allied Estates Pty Ltd v Noosa Shire Council* [2000] QPELR 97 at 100:

"The result was production of a plan on a more cadastral base although the delineation between the designations remained indicative rather than exact."

Although there certainly are more straight lines in the 1997 Strategic Plan mapping, in relation to the site in particular, for the most part, there is simply no way of locating them in the physical world with any confidence whatever. I am in agreement with the views expressed by the planners in the paragraphs set out above, except for the last sentence in (x), which paragraph in my view describes also the approach to be taken to the 1997 Strategic Plan. That Plan does not purport to have and would not be given the effect of taking away development entitlements under an existing zoning. It may have effects on the prospects of achieving rezoning, and, in displacing the 1988 plan, in principle injuriously affect the appellant's land. Thus we have become committed to examining whether the latter was as welcoming of development of that land as the appellant suggests, and whether the former was as restrictive.

- [51] There are some interesting features emerging from Exhibit 4. Apropos the complaint of the 1997 restriction of the SD&AR (PDLU) designation, to about 60% or two thirds of the RHD zone, in favour of OS-C&WP, under the 1988 PDLU arrangements, the western quarter or so of the zoned area was public and private open space PDLU, the rest Urban Area. The Urban Area has the shape of a high boot, the foot extending half way along the site's southern boundary adjoining Noosa Sanctuary; the extent of development envisaged there, coincident with the 1986 rezoning to Special Facilities (Resort Accommodation and Ancillary Facilities) provides the only rational explanation for the extent of the "toe" of the boot, to meet a continuation of the SF line, assuming that there was any thought at all of corresponding uses on the site (in this part zoned Future Urban). Oddly, in 1997, the toe disappears, in favour of an expanded open space designation along more of the southern boundary, but there is an unexplained bump to the west in favour of the new detached housing PDLU on the site at the expense of open space where the vamp/high tongue of the "boot" had been. If Exhibit 4 were correct, it would appear that since the relevant date, four storey buildings have been approved and built on OS-C&WP designated land overlooking Noosa Inlet alongside (in some cases formerly part of) the site.

Strategic Plan provisions specific to the site

- [52] Strategic Plan provisions specific to the site were included in the context of advancing tourism objectives, which the site is suitable to serve, in both the 1988 and 1997 Strategic Plans. The appellant points to the brief 1988 provision:

"7.6 TOURIST DEVELOPMENT OPPORTUNITIES ...

15. Settler's Cove – Located adjacent the Noosa River within Noosa Heads, this site is intended to be developed for a resort hotel, residential units, tavern, related commercial and retail functions, supporting facilities, limited boat harbour and a pedestrian access system."

as encouraging development, the 1997 successor as constraining development, based on asserted unwelcome environmental (including visual amenity) impacts that threatened:

"19.2.4.2 Because of the limited number of these sites in serviced areas and their size, location and character, they will be protected for visitor accommodation in resort developments. The sites comprise:-

...

- Lot 2 RP889602 located at Banksia Avenue, Noosa Heads. The site has vistas across Noosa Inlet and Weyba Creek and to the dune systems of the Noosa North Shore/Cooloola locality and the sub-coastal escarpment to the west. Whilst part of the site is visually prominent, much of it is also secluded, yet its central location provides ready access to Noosa Junction, the Hastings Street precinct and the beaches. A large part of the site is also of environmental importance, featuring significant vegetation, open space network and fauna corridor values and steep dune systems. The prominence of part of the site, its environmental significance and its location on the shores of Noosa Inlet and Weyba Creek, require a sensitive approach to development, particularly in regard to maintaining the environmental values of Weyba Creek and Noosa Inlet and maintaining the significant environmental values across the site.”

[53] In 1988, only the summaries for sites 4, 8 and 18 contained any sort of qualification.⁹ While such observations are justified, they fail to take account of the owner’s disclosed intent for the site in 1988 (which the Council was content to adopt for itself and incorporate in its Strategic Plan) having to contend with the requirements of the Strategic Plan and planning system generally in implementing development, which could not happen without appropriate approvals. For reasons expressed elsewhere, I am of the view that before the relevant date, the planning arrangements and assessment criteria in place justified insistence upon as “careful” or “sensitive” an approach to the site as to any other of the 18. We know that throughout the 1990s, by way of marked contrast with the Noosa Sanctuary situation, both the Council and State authorities were placing high priority on the site’s environmental values.

[54] Mr Buckley’s view of the 1997 Strategic Plan was that it was “only in the areas designated other than open space that some development would be contemplated. Also it is an inappropriate conclusion to suggest that tourist accommodation would be situated in the detached dwelling designated areas ... a marked shift from the previous... expectations”: Exhibit 25, 3.3(iv). Thus arise a couple of important issues of interpretation of the 1997 Strategic Plan, which in the end can be set aside. 19.7.5.4 expressly contemplates applications for development in the OS-C&WP PDLU designation (the “planning applications” mentioned in “a”); only development that would have an impact on environmental values is excluded, this revealing a test for acceptable development in the designation, not necessarily different from the pre-1997 situation. Mr Buckley’s other point was that recognition of the site’s potential for resort development applied to the SD&A residential PDLU land only, that is, roughly speaking Area A – to the exclusion of Area B, which he thought strictly limited to detached housing (as has been developed there since¹⁰; for what it may be worth, multi-unit residential buildings

⁹ The lack of caveats for other locations is without significance in my view. There are none for 11 Lake Macdonald, but one would expect constraints to arise from the very attractions listed: “picturesque setting, abundance of bird life ... the Lake Macdonald Fish Hatchery”. By s 2(2) the Tourist Facility Growth Areas collectively were said to have “potential”, with further investigation ... required to ascertain the form of development which is appropriate”.

¹⁰ See his paragraphs (xiv)-(xvi) reproduced in footnote [Venn fn 2].

have been approved and constructed since the relevant date on OS-C&WP areas in the north-west of Area A). He has the strong point that the site-specific provision is found under the heading 19.2 “Urban Semi-Detached & Attached Residential”, the first objective under which refers to “resident and visitor accommodation in detached, semi-detached and attached development forms”. The preceding heading is 19.1 “Urban Detached Housing”, in which key strategic aims are those “Applicable to all forms of Residential Development and to Detached and Semi-Detached Housing in the Coastal ... Areas and Transport Aims”. Character is intended to be achieved and maintained with “Limited expansion of the Locality’s Detached Housing Area” under “19.1.1.3 ... Containing Urban Detached Housing to the Detached Housing and Semi-Detached & Attached Residential designations” (sic). Those headings roughly, but not precisely, reflect PDLU designations. There is even less correspondence with the designations in some of the following headings:

- Business, Retail & Administrative Development (which deals with centres PDLUs)
- Community services
- Industry
- Rural Housing (cf the PDLU of Rural Residential Settlement)
- Open Space & Environmental Issues
- Transport (which deals with the major road network, rather than a PDLU)

[55] It may be accepted that the location in the Strategic Plan of 19.2.4, which tends to associate it with a particular PDLU (although there is no “urban semi-detached & attached residential” PDLU), is odd in a way; perhaps there could have been a freestanding section. Resort developments, one would think, are urban, and it would seem curious to deal with them under 19.1 Urban Detached Housing. One might wonder where else 19.2.4.2 could have been placed. Of the seven sites dealt with, some have solely semi-detached & attached residential PDLU designation. Others, like the site, Noosa Sanctuary and the Banana Plantation, have multiple designations. It is worthy of note that the “site”, so far as the Banana Plantation is concerned, is identified as “that part of Lot 1 RT136508” with the relevant designation “located off Morwong Drive”. Other parts of Lot 1 have a detached housing or open space designation: it is clear they are not recognised as offering that “opportunity for the provision of visitor accommodation in resorts”. There is no corresponding exclusion of any part of the appellant’s site and it seems to me that the references to environmental importance, significant vegetation, open space network and fauna corridor values, also, perhaps “location on the shores of Noosa Inlet and Weyba Creek” refer to the lower-lying parts of the site which are regarded as part of it, just as would be Area B. 19.2.4.2 is careful in respect of Noosa Springs to identify only its “resort component ... on part of Lot 3 CP900478”. That lot too has multiple designations, the resort being on SD & AR land, as can be established by consulting the plan of development in Exhibit 191 (p 15), which designates it Precinct F. The plan of development was approved by the Governor in Council as part of the Planning Scheme for the Shire of Noosa on 6 June 1996, well before the relevant date. Most of the other precincts (A, B1, B2, C1, C2, D1, D2, E1 and E2) have as permitted uses “Multiple Dwelling and/or

Group Housing Development”; they comprehend areas given a detached housing PDLU designation in the 1997 Strategic Plan, plainly against the background of the permitted uses. Development has occurred accordingly, which would be suitable for visitor/tourist accommodation.

- [56] Mr Robinson was obliged to resile from his contention that multiple dwellings or group housing had been approved in the “detached housing” designation, something which by definition could not happen before the relevant date.
- [57] In 19.2.4.2, with the exception of the last (the Ivory Palms Resort located at Eumundi Road and Hilton Terrace, Noosaville) identification is by reference to identified lots on identified plans, with the qualification that for a couple, only “part” of the lot is included, in which case additional information is given to clarify what constitutes that part, in one case by reference to the PDLU designation alluded to in the HEADING for 19.2 – one would think unnecessarily, if Mr Buckley is right that nothing under the heading has any application outside that particular PDLU designation. While I agree with Mr Buckley (as opposed to Mr Litster QC, who cross-examined him over four days) that “off Morwong Drive” did not require a street frontage to Morwong Drive and that a remoter area of SD & AR was covered as well as the area with such frontage, I do not agree with him that the recognition of Lot 2 RP889602 for visitor accommodation and resort developments is limited effectively to Area A. The idea of “maintaining the significant environmental values across the site” seems ridiculous if “the site” is limited as suggested, given that the environmental values of such a constricted “site” would be minimal, if any. The site is expressly recognised as featuring “steep dune systems” (plural) which, to my mind, implies that Area B must be included, as it would be difficult to regard Area A as more than a single dune system.
- [58] Following a detailed 109 item chronology, the planners’ joint report discusses the important 1990 legislation under which this appeal is to be decided (which commenced on 15 April 1991) in a section one may infer was penned by Mr Venn:
- “2.3 LOCAL GOVERNMENT (PLANNING & ENVIRONMENT) ACT**
- (i) The legislation having force and effect over town planning matters at the Relevant Date was the Local Government (Planning & Environment) Act. One of two key objectives enunciated at s. 1.3(a) of the Act was:
- ‘to provide a code by which a local government or the Minister may undertake the planning of an area to facilitate orderly development and the protection of the environment.’* (emphasis by the writer).
- (ii) ‘Environment’ was defined as including:
- (a) *ecosystems and their constituent parts including people and communities; and*
- (b) *all natural and physical resources; and*
- (e) *those qualities an characteristics of locations, places and areas, however large or small, which contribute to their biological diversity and integrity, intrinsic or attributed scientific value*

- or interest, amenity, harmony, and sense of community; and*
- (f) *the social, economic, aesthetic and cultural conditions which affect the matters referred to in paragraphs (a), (b) and (c) or which are affected by those matters.'*
- (iii) The planning legislation, current at the Relevant Date, required the applicant to give due consideration to the environment and address any potential impacts that could be occasioned by a development proposal. The Council, therefore, was required to consider all effects that development occurring as a result of an application would have on the environment and amenity of a subject site and its adjoiners.
- (iv) Section 4.4(3) of the LGPEA sets out 'matters' that a local government is required to have regard to in the assessment of applications to amend the Planning Scheme. They include (as are relevant to the matter being reported on):
- (a) *'whether the proposal, if approved, or buildings erected in conformity with the proposal, or both the proposal, if approved, and the buildings so erected, would-*
- (i) *detrimentally affect the amenity of the neighbourhood;*
- (ii) *create a need for increased facilities;*
- (f) *the impact of the proposal on the environment (whether or not an environmental impact statement has been prepared);*
- (g) *the situation, suitability and amenity of the land in relation to neighbouring localities;*
- (l) *such other matters, having regard to the nature of the application, as are relevant.'*
- (iii) The Council, therefore, was required to consider all effects that development occurring as a result of an application for rezoning would have on the environment and amenity of the site and its environs.
- (iv) From clause (f) above, a consideration of the provisions of any Planning Scheme, Strategic Plan or DCP is mandated. Section 4.4 (5A) of the LGPEA requires that an application is to be refused where it conflicts with the Strategic Plan or Development Control Plan where there are insufficient planning grounds to justify the approval despite the conflict. **CB** adds that this shows the role played by Strategic Plans in development assessment (see his comments at 2.1(ix) above) had legislative support.

- (vi) Section 8.2(1) of the LGPEA is relevant where it requires a Local Authority to:
'take into consideration whether any deleterious effect on the environment would be occasioned by the implementation of the proposal, the subject of the application'.
- (vii) The Chief Executive of the DLG&P was able (under sub-section (4) of this part) to waive any requirements under this section if that Officer was satisfied that a recent report adequately addresses the relevant issues or if it is deemed that *'the consequence of the approval ... is minor'*. As there had not been any EIS conducted previously for the subject site, and that the particular environmental circumstances of the Noosa North Shore were known to the Department, it is unlikely that any development application could have been considered 'minor' for the purposes of relaxing the requirement for an EIS.
- (viii) Sub-section (15) introduced the concept 'designated development' and described it as meaning:
 - (a) *'a proposal prescribed by regulation for the purposes of this section; or*
 - (b) *a proposal specified in a local government's local planning policy as a designated development for the purposes of this section'.*
- (ix) The Regulation to the LGPEA (clause (a) above) identified certain uses under Schedule 1 that were deemed, by their nature or by the potential for impact on the environment, to be *'Designated Development'* requiring the Applicant to apply to the DLG&P for Terms of Reference (ToR) for the preparation of an EIS. The use of land sought was not a use under Schedule 1.
- (x) Regulation 16 of the LGPEA, as relevant, is:
'Environmental Impact – designated developments.
 16. *The following types of proposals (other than proposals which the Local Authority regards as of a minor or ancillary nature) are prescribed for the purposes of s.8.2 of the Act:*
 (b) *a proposal relating to a development (other than a dwelling house, out-building or farm building) on land located in or having a common boundary with an area referred to in Schedule 2.'*
- (xi) Schedule 2 includes the following 'Areas' which may or may not apply to the subject site:
 1. *Area below the flood line adopted by the local government, if development involves filling an area of more than 5 000m².*
 2. *Area that, under a conservation plan under the Nature Conservation Act 1992 (unless exempted under the plan), is identified as-*
 - (a) *a critical habitat for native wildlife; or*
 - (b) *an area of major interest.*

3. *Catchment area under the Water Resources Act 1989.*
 4. *Coastal management control district under the Beach Protection Act 1968.*
 5. *Designated landscape area under the Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987.*
 6. *Protected area, registered place or restricted zone under the Queensland Heritage Act 1992.*
 7. *Protected area, under the Nature Conservation Act 1992, unless exempted under a conservation plan under that Act for the area.*
 8. *Reserve, sanctuary and grounds, including fish habitat reserve, fish sanctuary, oyster grounds, public oyster reserve or wetland reserve set apart and declared under the Fisheries Act 1994.*
 9. *The Wet Tropics Area under the Wet Tropics World Heritage Protection and Management Act 1993, unless exempted-*
 - (a) *under a management plan under that Act; or*
 - (b) *by the Wet Tropics Management Authority.*
 10. *Wetland, whether fresh, brackish or marine, including coral reefs, mangrove areas mudflats, sand flats, sandy beaches, seagrass beds, and tidal marshes.*
- (xii) Alternatively, a Local Authority could declare a '*Designated Development*' which, similarly, resulted in development requiring the preparation of an EIS through PSP 16 (refer Section B9 below).
- (xii) There was a need, even in 1988, to undertake considerable environmental analysis work so as to define where the line between development-related and open space-related PDLU's fell.

2.4 PLANNING SCHEME POLICY (PSP 16)

- (i) Sub-section (15) of Section 8.2 of the LGPEA facilitates the prescribing, by the Council, of '*a proposal .. as a designated development*' requiring the preparation of an EIS.
- (ii) The subject site contained both environmental attributes of considerable value and environmental circumstances requiring close and particular attention;
- (iii) Planning Scheme Policy PSP 16 (Environmental Impact Statements) was originally adopted on 9 May 1991, amended on 22 December 1994 and ultimately repealed on 19 January 2001. It had effect on the Relevant Date.
- (iv) The subject site is not identified in Council's PSP 16 but PSP16 interprets section 8.2 of the LGPEA as applying the requirements in relation to EIS's to all matters requiring Council's '*approval, consent, permission or authority*'.
- (v) In particular, Section 4.2.2. sets out areas identified by the Council as requiring an EIS and sub-clause 4 includes:

‘developments adjacent to the Noosa River and lake system where deleterious impacts of an environmental or visual nature may result.’”

- [59] The discussion concludes as follows:
 (xvi) The Appellant did not make a submission during the public notification period leading to the adoption and gazettal of the 90 Scheme
- [60] I reproduce (xvi) only for the purpose of confirming that the circumstances stated there are in my view completely irrelevant in respect of the appellant’s compensation claim. I have been unable to identify what “item (d) above” refers to. There is an item (d) on page 29 of the report later on relating to Mr Venn’s assertion of an agreement in relation to development application R527 “that the area of the site along Banksia Avenue would be subject to limited development in recognition of the interface with existing residential development” – an agreement that would have no more present significance and the appellant’s inaction described in (xvi) above, which is not to deny that an agreement in those terms might be a correct description of the effects of the current applicable planning arrangements.¹¹ The d on page 38 in which Mr Venn observes that “what was Precincts 5 and 6B, have now been developed for 23 detached allotments whereas the R527 approval would have given a resort hotel to accommodate 763 persons... on 38,760m² GFA in buildings of threes storeys or 12m in height”. On the following page, perhaps in similar vein, in respect of current development in Banksia Avenue, Mr Venn observes that:
 “d. Lots 11-33 would appear to represent a wasted opportunity in wanting for more intense development.”
- [61] Half a dozen pages of discussion of the 1988 strategic plan follow, then two and a half pages regarding the 1997 strategic plan. Essentially, Mr Venn is saying that 1988 was not as good from the point of view of development prospects as Mr Buckley contends and that 1997 is not as bad.
- [62] The 1988 issue, resolution of which will decide the best “before” case strikes me as the major issue in the appeal. Words can be found there, as one would expect, favouring development. Words can also be found there, as one might not expect, making what may broadly be called environmental considerations important in the assessment of development proposals.
- [63] As to how welcome development might be in the Public and Private Open Space (PPOS) designation, Mr Buckley points to objectives, in particular the sixth as containing no suggestion that land in the designation will not be developed in response to Mr Venn’s pointing to language immediately following calling for respect for parcels of land (like the site) of identifiable visual quality. In part 3.2, they got to this point:
 “(xix) **JV** says that PPOS PDLU designation had the effect of seeking to recognise environmental qualities of the land that were inherent and/or recognised to that date. At the same time, while remaining silent on residential or other urban

¹¹ If it were suggested that an approach on the “agreed” lines was influenced by the 1997 Strategic Plan, I am unpersuaded that reference to it might have altered the view taken of the applicable Strategic Plan, which was the 1988 one.

uses, it focuses attention on other low-key forms of development – being recreation (passive and active), education and tourism. That is, the conferring of the PPOS designation does not deny the opportunity for some form of development so much as it directs that any development must be consistent with Strategic Objectives. The Conservation Land, which was ultimately reserved under conditions of approval related to R527, is consistent with these Objectives; but **CB** says this application was coloured by the '97 plan.

(xx) **CB** says a prospective purchaser properly advised would take from these provisions of the Strategic Plan strong guidance as to the subject land's development potential:

- It is extensive in that pro-development designations cover all of the subject land, including that part of the site in the Open Space designation;
- Its development for urban and tourist purposes is entirely consistent with the plan; and
- The 'green' colouring does not mean 'no development'.

(xxi) **JV** could never agree that an 'Open Space' strategic designation connotes a 'pro-development' stance. He agrees that urban and tourist development is consistent with some of the 88SP designations to a degree sustainable after consideration of all environmental circumstances; and that 'green colouring' (in the same context) does not necessarily mean 'no development'."

[64] The next set of disagreements related to the site specific provisions in the two strategic plans. The site is identified in Part B at figure 7.1 Tourist Development Opportunities as site 15. In the following brief descriptions of the locations, that for Settlers Cove lacks the qualifications incorporated in the descriptions of some others. However, all of the locations are qualified in a similar way by the 1988 strategic plan in the last sentence of s 2(a). In my opinion that sentence is not limited to those locations for which the gate is left open, so to speak, by the preceding sentence. It is important to note that the appellant's site does not have an orange circle like Hastings Street or some locations on the river at Noosaville. These are recognised by 2(1) Tourist Facilities Area as areas which "are or will develop as tourist facility precincts". The site's future is not similarly certain. Mr Venn referred to *Kettering Pty Ltd v Noosa Shire Council* [2007] QPELR 605 at [34] where the difference between a "TFA" and a Tourist Facility Growth Area ("TFGA") designated by broken orange circle was recognised:

"As a matter of interpretation (a TFGA) was not seen as likely to be a 'significant tourist precinct', but, rather, is covered by what Objective(1) says about land to be rezoned."

[65] The planners agreed in 3.3 that the 1997 Strategic Plan exhibited a format considerably different from that of its predecessor, abandoning for the most part a Shire wide approach. The Shire was divided into "localities", each with its own "Vision and Intent and Objectives and implementation for differing PDLUs". The localities begin with Cooran (ss 2-3, proceeding in alphabetical order through those relevant to the site, Noosa Heads/Noosaville (18-19), to Tewantin (22-23). As the planners noted, the concept of Tourist Facility Growth Areas espoused in

1988 was abandoned; nevertheless, for a second time, the site was specifically mentioned. Mr Venn contended that the whole site was accorded recognition for the tourist accommodation/resort development purposes “vision”. Mr Buckley disagreed strongly, being of the view that the detached housing and OS-C&WP areas were excluded from recognition and should be treated as unavailable for anything other than the new preferred dominant land uses after the relevant date.

- [66] On Mr Buckley’s approach the new PDLU designations OS-C&WP and Detached Housing were more restrictive of development than their predecessors (Public and Private Open Space and Urban Area), and worse, the former became much greater in extent, at the expense of what he saw otherwise as developable land. He set considerable store by 19.7.5.2’s description of it as applying to land whose environmental values were:

- of the highest order;
- which warrant conservation status; or
- should be included in public tenure.

which he considered overrode the relevant “dot point” in 19.2.4 referring to the site. The idea of public ownership was not new, featuring in the 1988 Strategic Plan in 7(2) for example. It cannot be the case that every square metre of land satisfies all or necessarily any of the three dot points. The mapping context shows that the relevant criterion was “significant environmental values” that might be impacted in undesired ways – which requires another detailed site-specific inquiry about potential impacts of an actual proposal, and underlying that, what if any “environmental values” are there to be concerned about. I take it that in this context the values are phenomena worth preserving rather than phenomena that happen to constitute the “environment” in a particular location. 19.7 Open Space & Environmental Issues, set out below refers to a “significant environmental values” criterion is relied on in many localities in the Shire. No useful submission was made as to what “strategically assessed” meant. I have concluded it is no more than rather meaningless jargon and far from being an indication that some final reliable identification of the qualities of particular land has happened and been translated into mapping.

- [67] Mr Venn listed eight reasons (all of which I regard as pertinent, excepting the fourth) for his view that the 1997 changes did not bring a shift from but tended to confirm the expectations that would have been realistically held already:

- a. The identification to the (whole of the) subject site in the 97SP as a site ‘*to be protected for visitor accommodation in resort developments*’ – instead of one that had the ‘*potential for growth ... subject to further investigation to ascertain the form of development which is suitable*’ as a TGFA under the 88SP – represented an elevation of the importance of its protection as a site for tourist or resort development;
- b. The designation of an area for detached housing PDLU in the southern part of the site showed a need to design sympathetically with the immediately adjacent existing residential area as distinct from the northern area which is

separate to a degree from relatively low intensity residential use.

- c. The need to consider adjacent residential development is required by urban Area PDLU Objective (6) in the 88SP. Between 1988 and 1997, the Noosa public had become increasingly vocal in their consideration and perception of development that should occur in their area as evidenced by the activities of the Noosa Parks Association.
- d. As will be described and discussed in Section 4.2 below, it was agreed during the assessment process of application R527 that the area of the site along Banksia Avenue would be subject to limited development in recognition of the interface with existing residential development.
- e. The mere fact that low intensity development is suggested as being '*preferred*' in the Detached Housing PDLU on the site does not mean that tourist accommodation cannot be contemplated. Many low key tourist accommodation developments in areas such as Noosaville were constructed during this period.
- f. Furthermore, the built form of development contemplated under the DH PDLU was consistent with that sustainable under the then FU zone where a two storey height limit applied.
- g. The concerns for '*environmental values*' identified by CB above were also well articulated in the Urban Area PDLU Objectives of the 88SP. In any event, the [1990] scheme Schedule required consideration of (inter alia) any deleterious effect on the environment as well as amenity and traffic issues in proposing development requiring either consent and rezoning applications.¹²
- h. Notwithstanding the agreement (refer Section 3.3(i) above) that the 97SP was of a considerably different format from its predecessor (the 88SP), its provisions do not represent a 'marked shift' in philosophy but, instead, a more robust, focussed, scientific and reasonable approach to the assessment of development potential that was grounded in more detailed analysis of environmental matters and furthered by a more environmentally-conscious public and Council."

[68] Mr Buckley in his court report opined that Mr Venn was really on his side:
 "11. At 5.3.1 of the JR, the difference of approach between Mr Venn and myself is succinctly summarised:

¹² See the new Chapter XLIV Town Planning Bylaw gazetted 15 December 1990 (Exhibit 11) Part B5(8) (rezoning) 9(7) (consent).

- I state the changes in forward planning were *a profound change in philosophy and preferred planning outcome.*
 - Mr Venn characterises the changes as *a more robust, environmentally sensitive and appropriate approach based on a scientific analysis of physical circumstances, a response to community aspirations, and a consideration for existing site environs.*
12. On reflection, I consider his summary supports the opinion I express.
13. This is because up until 5 September 1997 the Strategic Plan promoted development of the land in a very obvious and deliberate way. After that date, the development contemplated was limited in area, and in terms of housing density in two ways:
- a large area formerly designated ‘urban area’ where any number of urban uses including for tourists and permanent resident accommodation was promoted, was replaced with a much smaller area promoted for detached housing only; and
 - an area promoted for higher density housing was replaced with a much smaller area.
14. Throughout the 1990s Noosa Shire Council was a sophisticated planning authority with a reputation of calling development applications to account. Its actions ultimately relied on the need to have, underpinning its approach, statutory planning instruments that aligned with policy and intended outcomes. Its actions were always subject to review in this Court and needed to be supported by appropriate planning.
- ...
17. A robust environmentally sensitive approach underpinned the new Strategic Plan. This may have been driven by community attitudes – the point is this approach with respect to the subject land in particular was not reflected in the 1988 Strategic Plan.
18. The examples given in the JR regarding the differences between the respective open space provisions, the residential designations, and the physical extent of the various designations highlight very marked differences in approach and outcome between the two Strategic Plans.
19. Any prudent purchaser, as I highlight in Section 5.1 of the JR, particularly if properly advised would recognise two

very different planning regimes in the before and after. The JR draws attention to these as does my figure on page 42.”

- [69] He is no doubt right that as a new planning instrument the 1997 Strategic Plan would be accorded great weight. In the end, however, I am satisfied by the Council’s case that the 1988 Strategic Plan would have stood in the way of the appellant’s “before” cases as effectively as its successor. The potential purchaser by 1997 would have known of the Council’s and the community’s opposition to such development scenarios. While it is the quality of objections from members of the public to development proposals, and not their quantity, that ultimately counts, there is significance, as Mr Venn suggests, in their having been but two objections to R221, yet over 2,000 to R527. The “profound change in philosophy”, with likely consequences for the “preferred planning outcome” was, in my view, worked by the PEA; the legislators may in this instance even have been leading public opinion. For what it is worth, I would expect the drafters of the successor to have exercised some care not to invite compensation claims for injurious affection unless there had been a deliberate decision to prevent development currently (i.e. by 1997) achievable. The compensation claim in respect of the Banana Plantation was well underway (indeed had reached the court) in 1995: see [2007] QPELR 605 at [1].
- [70] More attention will be given in paragraphs following to the changes made in 1997 to provisions specific to the site.
- [71] It should not be thought that the appellant’s land was otherwise singled out. The OS-C&WP designation was applied widely throughout the shire to areas assessed to have significant environmental values associated with the highest potential to suffer adverse impacts. The areas so mapped after “strategic assessment” are typically large ones which one would not expect necessarily contained such values in every part. The mapping context is very similar to that for another PDLU designation dealt with in the same section:

“19.7 OPEN SPACE & ENVIRONMENTAL ISSUES

Preferred Dominant Land Use	Rural Conservation <i>Open space and other uses contemplated in Section 19.7.3</i>
Map Colour	Olive
Mapping Context	Land which has been strategically assessed as having significant environmental values. This land is unsuitable for intensive rural settlement, though house site areas may be capable of being identified at low densities which would not impact on the land’s environmental values.
Principal Planning Studies	1, 6, 10, 19, 20, 21, 23, 24, 25, 26, 30
Key Strategic Aims	Agriculture Aims, Environmental Management Aims, Aims Applicable to All Forms of Residential Development, Aims Applicable to Detached Housing in the Rural Non-Town and Village Areas of the Shire and On-Site Effluent Disposal Aims.

Preferred Dominant Land Use	Open Space – Conservation & Waterway Protection
Map Colour	<i>Open space, where the protection of environmental values or adjacent waterways is of key importance</i>
Mapping Context	Dark green
Principal Planning Studies	Land which has been strategically assessed as having significant environmental values and the potential for adverse impacts on those values is highest.
Key Strategic Aims	6, 10, 19, 20, 21, 23, 24, 25, 26, 30, 32.
	Conservation Aims, Environmental Management Aims.

The same mapping context and “significant environmental values” criterion can be found referred to in many places in the new Strategic Plan, such as 3.5, 5.3, 5.5, 7.7, 9.5, 11.5, 11.6, 13.3, 13.7, 15.5, 17.3, 21.5, 21.7, 23.6 and 23.7. Given their relative lack of environmental values, the development potential of Area A and Area B was unaffected. The 1988 strategic plan and 1990 planning scheme provisions (had the former continued in effect) were equally an issue for any development proposal.

- [72] The planners offered opinions on other matters, such as the significance of the approvals in “notable applications”, R221 and R527 and the Council’s assessment in the latter, as well as the Noosa Sanctuary approval, to a hypothetical prudent purchaser in September 1997. Mr Buckley was frankly uncertain of the relevance of R527 (an application made 2 June 1994) to a potential purchaser of the site given that “its assessment was coloured by the looming 1997 Strategic Plan”. The consent order finally resolving matters was made on 22 November 2000, well after the relevant date. The planners agreed that the coming into affect of the 1990 Planning Scheme some nine or 10 months after R221 officially lapsing on the Minister’s refusal to gazette the approved rezoning adversely affected the development yield achievable in comparison with what had been approved. It is convenient to examine what that significance should be found under separate headings.

Mr Venn’s Analysis of prospects of rezoning

- [73] Mr Venn presented compelling justifications for his view (which I share) that the rezonings that would have been necessary to accommodate the appellant’s “before” cases were highly problematic. Area B was proposed to be rezoned Residential Medium Density, which offered a three storey/12 metre height limit, likely to be exploited to the full to accommodate Mr McKerrell’s calculated development potential achieved in the block and stacking exercise. I agree with Mr Venn that by, say, August 1997, and indeed at all times since the 1988 Strategic Plan came into effect, out of consideration for the surrounding two storey amenity existing or approved (south and east), the Council (and I think the court too) would resist a rezoning allowing the whole gamut of possible RMD uses including buildings of

three storeys (considered by Mr Venn to be over-intensive development)¹³ on an uncontrolled basis throughout Area B. What might have been entertained (see T28-73) was rezoning to Special Facilities, which would control development by a plan of development and create greater certainty. Mr Venn is not alone in recognising the that “there is an observable reluctance on the part of local councils to rezone, perhaps on the basis that there will be no certainty in the planning process if rezoning can occur easily.” See Stein, *Principles of Planning Law*, p 43. Cf. *Lagoon Gardens Pty Ltd v Whitsunday Regional Council* [2010] QPELR 74 at [13], [22]-[26] and [31]-[34].

- [74] The achievability of the block and stacking yields was also very much in doubt by reason of the overlooked “units in a plane” limit in s 36(4) of the 1990 Planning Scheme (p 1,761) which relevantly demanded that in buildings erected or used:

“(4) Within the Residential Low Density Zone and Residential Medium Density Zone, not more than four (4) dwelling units and six (6) dwelling units respectively are attached in any one plane, provided that this provision shall not apply where the Council is satisfied that the proposed development would not have a detrimental effect upon the amenity, character and aesthetics of the surrounding area;”

which was consulted assiduously by Council officers in planning assessments of proposed buildings as demonstrated by many exhibits tendered, both before and after the relevant date. Those exhibits reveal many instances of relaxations, typically in locations where what was proposed did not impair visual amenity for neighbours or users of public areas, or where the established pattern of development in a location meant that it was realistically too late to hope for the desired “non-massive” form of development. There would almost certainly have been some relaxation allowed in Area B to the extent of the adverse amenity impacts being suffered internally, but not, in my opinion, across Area B generally. I may say that I agree with the officers’ restrictive interpretation of 36(4) which allowed reference to planes in any direction. (It might be noted that there are other provisions from the 1990 instrument that could affect the before case such as Part 2 Division 2 p 1768:

“Division 2 – Change of Natural Surface Levels

67. (1) No person shall change or cause to be changed, the natural surface levels, as lawfully existing on the appointed day, of any allotment or group of allotments except:-

- (a) As a condition of approval to subdivide land or open new road in accordance with the Subdivision of Land By-Laws;
- (b) As a condition of building approval;
- (c) As a result of an approval granted under this Town Planning Scheme for the development or use of the

¹³

Mr Venn conceded that a limited number of three storey buildings might have been permitted in locations that were shielded from view off the site: T28-80. This would be akin to the approval in Noosa Sanctuary of a single three-storey central facilities building encircled by two-storey buildings around the perimeter of development – and in that way “concealed”.

land or in conjunction with the development of land pursuant to Column 3A of the Table of Zones, provided that where such approval involves the erection of any building or other structure, no person shall without the approval of Council change or cause to be changed the natural surface levels of the land until such times as building approval has been granted;

- (d) For the purposes of landscaping the immediate surrounds of an existing or approved premises;
 - (e) For the purposes of storing water for rural usage on land included in the Rural Pursuits or Rural Residential Zones.
- (2) Notwithstanding the provisions of sub-clause (1) of this clause, Council may dispense with the requirements of that sub-clause and approve a change in the natural surface levels of any allotment or group of allotments, if it considers that such dispensation is justified having regard to:-
- (a) Whether development described in paragraphs (a) to (c) of sub-clause (1) of this clause is intended on the site and the likely timing associated with such development;
 - (b) Whether the site is prone to flooding, irrespective of whether the site is designated as an area subject to river flooding on the Scheme Maps;
 - (c) The change in natural surface levels not creating detrimental effects upon land upstream or downstream of the site;
 - (d) The change in natural surface levels not giving rise to any impacts upon the amenity of the area; and
 - (e) Whether the deposited materials are to be temporarily stored for use on another site.”

This may have stood in the way of proposals to level the highest parts of the dunes to accommodate construction. R221 envisaged taking sand from that area to provide fill for the golf course!)

[75] As to the “after” case, I agree with Mr Venn’s view at T28-83:

“... the urban detached housing PDLU is intended to demonstrate a dominance of detached housing – dwelling houses, but that covers the whole of the ... planning area, and if one has regard to the locality map.

... There were significant areas of urban detached housing PDLU that have already been developed for that purpose. It in my view can't be contemplated that development of this one site would affect that dominance that's shown there. ... this is a – a large lot that's remained undeveloped, ... the box page ... 118 ... of the strategic plan suggested refinement of previously committed settlement pattern.

... Sorry, 114. And based on biophysical constraints suggests ... area B has been put in the urban detached housing PDLU because ... it's in the future urban zone because it does not have a current approval ... it's known to have biophysical constraints, but it is capable of some unknown development – level of development. ... there's a mechanism ... to ensure that ... part of the land is developed consistent with the character surrounding ... that's not ... stated but ... underlies this ... designation. So I don't share Mr Buckley's pessimism that there can only be detached housing or dwelling houses."

We know that on 11 February 1999 the Council was amenable to rezoning the southern part of Area B Special Residential, for the purposes of resort development (Exhibit 134, page 1179), notwithstanding conflict with the 1997 Strategic Plan.

- [76] In similar vein, he provided helpful summaries of difficulties in the way of the "before" case for Area A at T28-66, 67 and 69:

"What do you say about the appropriateness or otherwise of introducing area A into the special facilities zone ... what would you advise a purchaser about a proposal to do that?--- ... I'm quite surprised that somebody would contemplate seeking a rezoning from the zone that gives you the highest development potential in the shire... . There are other mechanisms that could be utilised in subdividing the site ... to achieve the development that is proposed, albeit at a slightly reduced scale because of the need to observe boundary setbacks in a subdivision pattern ... I don't think that any attempt has been made to draw boundaries in-between and probably it couldn't be.

... one would have to consider a redesign and I think the optimum size to achieve that 13,600 is something like 4,000 square metres¹⁴ ... whether you can actually design a building within the design parameters to achieve that, I don't know. But against that, one has to weigh the opportunity ... that's afforded by the planning scheme to seek a rezoning to special facilities ... but not without risk ... not the least of which is the potential for objector submissions. ... it would be quite probable ... clearly it's not within the intent of the planning scheme. So the arguments mounted against a rezoning would ...

¹⁴ Mr Venn corrected this to 1 hectare (10,000m²) at T30-11, following which he conceded that in principle, with 6 "subdivided lots" averaging 10,070m² each, the block and stacking derived GFA could have been achieved. He reiterated his view that whether it was achievable in a suitable design was an unresolved question: T30-13.

carry more force than would be those mounted against a consent application, given that the same basic development is proposed.

... when one did an exercise like this, one would do a combined application for consent and subdivision which would then expose that subdivision component to public scrutiny.

...

... Mr Buckley ... is very strongly of the view ... that it's completely possible in the before case and completely impossible in the after case.¹⁵ I don't read the strategic plans the same way. I see in the '88

¹⁵

Mr Buckley's approach from the joint report was:

- “(ii) The 1988 Strategic Plan anticipated rezoning and on the subject land a prospective purchaser would be comforted by:
 - all three designations promoting development across the site;
 - the Tourist Facility Growth Area symbol being complementary to both the ‘urban’ and ‘open space’ designations over which it sat;
 - strong statements in Part B of the Strategic Plan, where this site was clearly favoured for tourist development, more so than other sites; and
 - very positive implementation criteria for development, in particular tourist development in all three designations.
- (iii) He or she would be aware of the need to conduct site specific investigations and configure a project that was responsive to its setting. The words ‘extensive and substantial’, in the Tourist Facility Growth Area provisions would have been terms that could not be ignored.
- (iv) The content of development described in R221 is the type of development he or she could reasonably expect, and know complied with the 1988 Strategic Plan.
- (v) There would be many ways of configuring 900 units and 600 hotel rooms on the site. The height change in the RHD part of the site would not affect the yield, as many design options exist. Whilst the number of units focussed near the river (where a canal was originally contemplated) might be reduced compared to one of the approved R221 layouts, some development there was not prohibited; it would have required a higher level of review than was the case say 10 years earlier, and hence a prudent purchaser would have attributed a greater risk to that component. Development in the R221 precinct where shopping was originally proposed, would accommodate some of the balance density yield, whilst still retaining some ancillary resort uses.
- (vi) The ‘die was cast’ in terms of the relative weight environmental issues would be given when its designations and supporting text were prepared. Clearly some other sites intended for ‘extensive and substantial’ tourist development were subject to more rigorous assessment before expectations were clear. For Settlers Cove, the environmental focus was not so much the banning or quarantining land from development (as is clear in the 1987 (sic) Strategic Plan) but encouraging development to work with the environmental constraints.
- (vii) I would have advised a prospective purchaser that development across the site, focussed on tourist/visitor accommodation, was reasonably expected. Whether a project had a canal (like R221) would depend on feasibility and expert advice.

strategic plan, there was quite considerable dialogue or requirement or provisions that required you to have regard to environmental issues and similarly in the after case that the '97 strategic plan required consideration of environmental issues. ...

...

-
- (viii) I acknowledge the Points of Defence that the Council allege general site unsuitability and a strong environmental fetter to anything like the R221 format existed close to 1997.
 - (ix) I acknowledge the trends evident in Council's pre-gazettal planning processes and accept that community attitudes were militant.
 - (x) In these circumstances, I would have advised a prospective purchaser at the time as follows:
 - The 1988 Strategic Plan is the plan in force and any application is entitled to be assessed under that plan; and
 - Whatever weight community attitudes may have on the final form of a new planning instrument will only be known when the new instrument is gazetted.
 - (xi) I believe it is important equally not to give too much weight to the events driving the change evident in the 1997 plan, a greater part of which was community activism.
 - (xii) The following figure compares the 1988 and 1997 designations as they apply to the site and to the zones.
 - (xiii) Basically, a contraction of development intent to Areas A and B is the effect of the 1997 Strategic Plan. These represent substantial reduction in site density.
 - (xiv) The net effect of converting most of the site to 'Open Space – Conservation and Waterway Protection' which the plan states is '*land with environmental values*:
 - *Of the highest order;*
 - *Which warrant conservation status or*
 - *Which is in or should be in public tenure?*
 is to blight areas so designated for any development. This is a stark contrast to the 1988 Strategic Plan. The 1997 Strategic Plan did seek to ban or quarantine most of the Settlers Cove land from development. The intent went as far as reducing the area of land zoned Residential High Density (where approval for units were subject to consent, and hence the discretion of the Council). This is, by any standards, a strong intervention in the development expectations of a site.
 - (xv) The reduction in:
 - area to be developed; and
 - density
 is a profound shift in planning policy.
 - (xvi) As discussed before, the statements in the 1997 Strategic Plan about suggesting the site be retained for tourist purposes cannot sensibly be applied to land the Strategic Plan identified for public acquisition and which is identified for low density housing across the road from other low density housing. It must only relate to what is left of the high density land off Serenity Close."

... it was 19.7.5.4 that clearly ... contemplated that applications would be made for development .. and it'll be subject to fairly rigorous environmental analysis and, if it proven that there is an unacceptable impact, then developmental approval will likely be conditioned in some manner, but it certainly is not turning its face away from some form of development.

... [as a consequence of the inclusion of part of area A] the prudent purchaser would be in control of all the environmental studies that he would ... feel the need to prepare and he'll have the expert evidence ... that there doesn't appear to be land in that particular area ... of significant environmental value and hence I'd be recommending that he proceed with the application, armed with that evidence that there's no environmental values that would require prohibition of development in that area."

At T29-7 he clarified the difficulty that had gone undetected by the architects in respect of Area A which meant that the proposal there, having regard to:

"... the upper limit of gross floor area for development in the residential high-density zone ... was unsustainable ... under a consent application, but what I was really meaning by that paragraph I think was that in my opinion a rezoning application would have more - have more difficulties in approval than would a consent application, and I think I mentioned the fact that a rezoning application was not consistent with the intent of the planning scheme as a whole.

...

... it is ... the residential zone that carries the greatest potential for development in the whole of the shire, so that is a factor to be considered when one contemplates changing it ... the ... Act required a consideration of balance of zones.

... And here we have a situation where this zone is in limited supply within the shire.... So to take what would be a significant proportion of land in that zone within the shire out is ... a bold step ... concerning the balance of zones."

- [77] Thus, independently of the "*Sparke* point", the appellant fails to show that a hypothetical prudent purchaser properly advised would have held any reasonable expectation of rezonings in the "before" case. Further, reasonable prospects existed of rezoning (or development approvals necessary to achieve the before case accepted by the court) after the relevant date which cannot practically or convincingly be shown to fall short of those that could be expected before.

Increasing importance of environmental matters: the courts

[78] That there has over the years been increasing “environmental awareness”, as it was designated, and in particular in the 1990s leading up to the relevant date, at all levels of government and in the community was common ground. One would not be surprised to encounter a similar phenomenon in courts. The parties presented opposed views of the implications of what was transpiring. The Council argues that the potential purchaser in 1997, for one, would not rely on historical approvals, R221 in particular, as some indication of what would currently be approved. The appellant argues that even if (which was never conceded) one could not expect a new R221 application to win approval, its fall-back notional “before” proposal (Mr McKerrell’s designs for Area A and Area B) was in a different case. The appellant’s experts, speaking generally, offered no support for the proposition that a hypothetical purchaser would count on anything more – which would appear to be recognition on their part of the consequences of increasing environmental awareness.

[79] Paragraph 16 of the appellant’s written submissions propounded “determinative matters” the hypothetical purchaser would have regard to in determining the site’s highest and best use in the before case, including that the gazetted planning scheme (1990) and strategic plan (1988) would prevail over everything else. Sub-paragraph (8) in effect argues that any attempt of the Council to limit development potential would be reviewed in the court, which would have regard to:-

“

- (i) the Council’s earlier support for both the R221 development and the Noosa Sanctuary approval;
- (ii) the availability of all infrastructure including reticulated water and sewerage;
- (iii) the general desirability of a Council acting consistently, and the Council’s resolutions that the R221 development was consistent with the 1988 *Strategic Plan*;
- (iv) the relevant case law which by 1997 demonstrates:
 - A. the proper approach to the application of policies is that the planning scheme and the strategic plan prevail over any informal expressions of the Council’s desires found in its policies;
 - B. that the importance of the environmental features of any site is assessed in the context of the planning decisions for that site including both zoning and PDLU designations that apply;
 - C. the importance of strategic plans in determining development potential and appropriate development approvals; and

- (v) the public or community benefits of granting an approval including the economic benefits and environmental benefits (occasioned from the dedication of land with environmental values).

[80] The “case law” which was said to be identified at pp 24 ff does not, in my view, demonstrate what is alleged in a way that helps the appellant’s case. Comparison of paragraph 16(g) with paragraph 17(h) shows the appellant apparently arguing that under the 1988 Strategic Plan regime the Council, if pursuing a “green agenda”, would lose in the court, but under the 1997 Strategic Plan would win. Or so a hypothetical prudent purchaser would think. In my opinion this argument rather turns the hypothetical prudent purchaser into a “wilting lily” at the stroke of midnight on the relevant date. It may be said that that is how the Council’s case regarded him or her even in the before case.

[81] I have undertaken a review (which I do not present as exhaustive) of the performance of the court and its predecessors and the higher courts to which appeals lay or lie with a view to testing the appellant’s version of what the “before” case might have been had the court become the assessing agency, in place of the Council, immediately before the relevant date. (It may well be that the Council would see some virtue in tailoring its decisions to relevant pronouncements or outcomes in the court.)

[82] The Full Court decision in *Strathpine Developments Pty Ltd v Pine Rivers Shire Council* [1974] Qd R 374 was considered a setback from the point of view of those desiring that environmental considerations be accorded high priority in the making of planning decisions. At 376, the Court said:

“Our attention was also directed to s. 32A of the *Local Government Act*, which was inserted by the amending Act of 1973, which came into force on December 20, 1973. It was therefore in force when the learned judge gave his decision, and, if relevant, was available for his consideration, although not in force at the time at which the appeal to the Local Government Court was instituted. See *Reg. v. Lukin: Ex parte Sunshine Pty. Ltd.* [1967] Qd.R. 49. Section 32A(1) provides as follows:

‘Without derogating from any of its power under this Act or any other Act, a Local Authority, when considering an application for its approval, consent, permission or authority for the implementation of a proposal under this Act or any other Act, shall take into consideration whether any deleterious effect on the environment would be occasioned by the implementation of the proposal, the subject of the application.’

In my opinion the considerations which are raised by this section would be more appropriately taken into account on an application for subdivision than on an application for rezoning. If, as I have decided, the evidence sought to be given in this case was irrelevant and therefore inadmissible, there is nothing in s. 32A which would make it admissible. In any event, it is difficult to see how the rezoning of land could of itself have ‘any deleterious effect on the environment.’”

- [83] Legislative amendments followed, leading Carter DCJ to declare in *Indooroopilly Golf Club v Brisbane City Council* (1981) 3 APAD 53 at 60:

“In my view, having regard to the terms of s. 8(5)(e) of the *City of Brisbane Town Planning Act*, it was incumbent upon the Council and it is incumbent upon the court to consider the matters referred to in s. 32A of the *Local Government Act* and that includes consideration of the deleterious effect upon the environment of the proposed rezoning. Again the question whether the proposal, which, if approved, will necessarily involve some destruction of the wooded area, and will thereby affect the amenity of the neighbourhood, is one specifically made relevant by statute.”

Ultimately, his Honour considered that the environmental issues raised did not stand in the way of approval of a proposed development: *Indooroopilly Golf Club v Brisbane City Council [No 2]* (1982) 4 APAD 125 at 152; [1982] QPLR 13, 42 C-D, where a further comment of significance in this appeal was made:

“Finally it was said that the granting of this application would constitute a dangerous precedent. There is no basis whatever for such an assertion. Each application for rezoning must be seen as resting on its own facts and relevant circumstances. A decision on the facts of one case will rarely if ever assist in the making of a decision in another. I need not repeat what I have said before in *Martin Dillon & Associates v Townsville City Council* [1981] 1 QPLR 29 at 32; (1981) 1 A.P.A. 134.”

See also *Gore v Brisbane City Council* [1996] QPELR 276, 280 H-I and *Keilar Fox & McGhie Pty Ltd v Noosa Shire Council* [1996] QPELR 390, 393K. The latter is a helpful decision in a number of respects. It is difficult to reconcile with the appellant’s argument set out immediately above.

- [84] *Keys v Woongarra Shire Council* [1983] QPLR 229 was an unsuccessful appeal against refusal of an application for re-zoning of land at Mon Repos Beach, where the most significant mainland loggerhead turtle rookery in Australia existed. The Council’s grounds for rejection were three, of which the second was the detrimental effect the proposed residential development would have on the turtle rookery. The appellant was defeated on all three bases. Row DCJ said at 239:

“During the hearing of the appeal counsel for the Appellants referred to *Strathpine Developments Pty Ltd v Pine Rivers Shire Council* [1974] Qd.R. 374 in relation to the admissibility of evidence on environmental matters on a re-zoning application. Whilst the reference did not take the form of an objection I allowed such evidence to be given on the basis that since the decision of the Full Court the relevant statutory provisions relating to the matters, amongst other things, to be taken into consideration on a re-zoning application were amended. At the date of the Full Court’s decision the *Local Government Act* did not contain section 33(6A). Under section 33(6A)(e)(iv)(B) a local authority in respect of an application for the re-zoning of land is required, amongst other things, to take into consideration whether, having regard to the permissible uses of land in the proposed zone and the potential for subdivision of the re-zoning is effected, the provisions of section 32A of the Act should be complied with. In *Indooroopilly Golf Club v Brisbane City Council*

(1981) 1 Q.P.L.R. 139 Carter D.C.J. (as he then was) adverted to the effect of the subsequent amendment in an appeal under “The City of Brisbane Town Planning Act’. A similar amendment was made to The Local Government Act. I agree with his remarks at page 142. In my view matters concerning the environment and the quality of the relevant area are a proper matter for consideration in respect of this application for re-zoning.”

It had been contemplated that the rookery issues might be accommodated by certain conditions. In the event, the Council subsequently approved the development. See *Fogg, Land Use and Urban Planning Queensland* (1984) 1 EPLJ 276 at 279, where the prospect of a new objector appeal was mooted.

- [85] Environmental considerations alone defeated a proposed canal development which was considered to deleteriously affect an existing environment to an extent which was unreasonable (judged from the community’s point of view), as set out in the headnote, although a separate application relevant to a smaller area was held unaffected by the arguments based on environmental considerations: *Sabdoen Pty Ltd v Redland Shire Council* [1989] QPLR 149.

- [86] The Mon Repos turtle rookery came under curial consideration again in the High Court in *Queensland v Murphy* (1990) 95 ALR 493, a case about compensation for resumption. The Court said at 496:

“Of course, a characteristic or attribute of the land which affects its value must be taken into account in the assessment of compensation even if the planning restriction which is a step in the process of resumption is dependent upon or directed to that characteristic or attribute. The Land Appeal Court considered that the existence of the turtle rookery adjacent to the land was an attribute of the land which affected its value to the extent that the existence of the rookery itself militated against the rezoning. Contrary to the view of the majority of the Full Court that there was an ‘open question’ on this point, the Land Appeal Court did consider whether the local authority would have refused the rezoning of the land, quite apart from the resumption and the scheme for the protection of the turtles. So much is clear from that court’s statement that:

‘We cannot fail to look at the position that, had there never been a scheme of positive action of which the resumption was an integral part, the position would have been that the land would have already had a rural zoning and any proposed developer would have been faced with a Council which would have been strongly and reasonably opposed to any rezoning which may have affected the rookery.’”

At 497:

“It is convenient to consider first the submission that the Land Appeal Court adopted an erroneous and extended meaning of the word ‘environment’. By s 32A(1) of the Act a local authority (which includes the Council) is required ‘when considering an application for its approval ... [to] take into consideration whether any deleterious effect on the environment would be occasioned by the

implementation of the proposal, the subject of the application'; By s 33(6A) of the Act a local authority is required, when considering an application for rezoning,

'amongst other things, [to] take into consideration –

...

- (v) whether, having regard to the permitted uses with or without the consent of the Local Authority of land in the zone in which the land is proposed to be included an the potential for subdivision if the land is included in the zone in which it is proposed to be included –

...

- (B) the provisions of section 32A of this Act should be applied.”

At 498:

“In reaching the view that the prospect of rezoning should have been considered ‘without regard for the possible impact of a subdivision... upon the turtle population’, the majority in the Full Court seemingly construed ‘environment’ in s 32A(1) of the Act so as to exclude live fauna. The word ‘environment’ was not defined in the Act at the time of the Full Court decision. Nor was there anything in the Act to suggest that it should be construed as having other than its ordinary meaning. The Act has since been amended and now defines ‘environment’ to include ‘land, air, water and fauna and flora and their habitats above and below the surface of the earth’. Counsel for the respondents sought to attach some significance to this amendment, submitting that it indicated that the legislature took the word to have the meaning given to it in the majority judgment of the Full Court. Given that the amendment defines ‘environment’ to include land, air and water and that, if it is to have any meaning at all, it must refer to those matters, it is not permissible to speculate that the amendment evidences an earlier legislative intent that ‘environment’ was used to convey, prior to the amendment, something less than is conveyed by its ordinary meaning. Indeed, one might just as well speculate that the amendment indicates a legislative view that an earlier legislative intent had been frustrated by the decision of the majority of the Full Court.

In its ordinary meaning ‘environment’ signifies that which surrounds and has long been understood to include ‘the conditions under which any person or thing lives’: *Oxford English Dictionary*, 2nd ed (1989). The latter usage dates from 1827 when Thomas Carlyle used the word to mean ‘the aggregate of external circumstances, conditions, and things that affect the existence and development of an individual, organism or group.’ See Hendrickson, *The Encyclopedia of Word and Phrase Origins*, (1987).

What constitutes the relevant environment must be ascertained by reference to the person, object or group surrounded or affected. The reference point for the purposes of ss 32A(1) and 33(6A)(e)(v)(B) of the Act is the land which is the subject of an application to which

those provisions apply. In the recent case it is the land which was the subject of the application for rezoning and which was later resumed. That land was and is surrounded by other land, including a narrow strip of land fronting the sea. During their nesting season turtles resort to that coastal strip, and perhaps also, to adjacent coastal dune areas to lay their eggs. When the eggs are hatched, hatchlings, or the survivors of them, journey from the coastal strip to the sea.

Even taking the narrowest possible meaning of the word ‘environment’ and confining it to the immediately adjacent land, the resumed land was and is environed by land which turtles used and continue to use as a rookery. Any use of the resumed land, which directly or indirectly, reduced the number of turtles using the adjoining coastal strip as a rookery or the number of surviving hatchlings would effect an alteration of a feature of that coastal strip and, hence, an alteration of the environment of the resumed land. And, because the presence of turtles during their nesting and hatching seasons might be thought to be a desirable feature of that coastal strip – and the evidence is that a significant number of objectors and the Council considered it so – any reduction in the number of turtles using that land as their rookery or in the number of surviving hatchlings might properly be thought to constitute a deleterious impact on the environment of the resumed land.

Because s 33(6A)(e)(v)(B) of the Act allows a local authority, when considering a rezoning application, to take into account the deleterious impact of a potential subdivision on the environment and because any reduction in the number of turtles using the rookery or in the number of surviving hatchlings might properly be thought to constitute a deleterious impact on the environment of the resumed land, it was open to the Land Appeal Court to consider, when assessing the prospect of rezoning, ‘the possible impact of a subdivision which might follow upon the rezoning upon the turtle population’. The Full Court erred in holding otherwise.

The argument that the Land Appeal Court erred by ‘accepting in the absence of the adoption of the procedures contemplated by s 32A of [the Act] that there would be inevitably have been a refusal of rezoning’ was made by reference to the provisions of s 32A(2),(4) and (5) ... the Land Appeal Court should have taken into account the possibility that a compromised proposal ... might have been approved by the Council.”

And at 500:

“By reference to these suggested conditions the Land Appeal Court expressed the view that ‘the most prudent action would be to limit human habitation on the resumed land to the minimum and that this would best be achieved by retaining the present rural zoning’ and concluded that ‘the probabilities against rezoning approval are of such order that ... the prudent purchaser would not add anything over and above the land’s homesite value in expectation of a more liberal approach to rezoning or subdivision at some future date’. That conclusion finds support in a decision of the Local Government

Court upholding a refusal by the Council to rezone a neighbouring parcel of land, known as the Keys land, which lay further from the beach than the subject land. The decision of the Local Government Court gave great weight to the protection of the turtle rookery.

The Land Appeal Court considered the prospect of a compromise proposal by reference to the evidence before it. It was not required to do more. Accordingly, it did not fall into error of law. ...”

Only a few days before the *Murphy* decision was announced, the *Local Government (Planning and Environment) Act* 1990 had been passed. That Act was assented to on 18 September 1990 but did not come into force until 15 April 1991 (Government Gazette 6 April 1991).

- [87] The title of M J Weir’s paper in the *Environment and Planning Law Journal* in October 1994 (page 409) was “Putting the Environment into the Queensland Local Government (Planning and Environment) Act”; the author’s views at page 410 were somewhat gloomy:

“The court appears to take the view that as the objective relevant to ‘protection of the environment’ is incorporated in an objects clause which emphasises facilitation of ‘orderly development’ that this indicates that environmental considerations are to be considered in the light of the requirements of development with no special significance given to that factor.

...

(d) The 1990 Act does not provide any measure by which it can be ascertained what is ‘deleterious effect on the environment’. To date the court has provided its own measure by implying this provision requires a consideration of whether the proposal ‘deleteriously affects an existing environment to an extent which is unreasonable (judged from the community’s point of view)’. Although this test was propounded in regard to repealed legislation indications are that it is accepted as appropriate for the 1990 Act.”

The last proposition was supported by reference to *Hilcorp Pty Ltd v Logan City Council* [1993] QPLR 199 in which, Weir says:

“Quirk DCJ specifically rejected the argument that the section 1.4 objectives together with section 14A of the *Acts Interpretation Act* meant greater weight should be given to environmental matters.”

See page 409 of the article, where the view was expressed that the new Act represented only “limited change in legislative approach confined substantially to procedural reform. Substantive progress in incorporation of environmental issues in development applications will await further legislative reform and a matching variation in judicial approach from [this] Court.” The Council argues, I think persuasively, that his Honour’s awareness and careful consideration of environmental matters emerges clearly from the reasons, for example at pp 200 and 201, and that attention to them is reflected in the conditions included in the order (p 206). It also points to the thoroughness with which environmental issues were gone into in *Leisuremark (Aust.) Pty Ltd v Noosa Shire Council* [1988] QPLR 137, an appeal that ran nearly as long as this one. As the headnote summarises, it was held that the proposed development would not significantly affect environmental aspects. In the result, other considerations defeated it.

- [88] While there followed new examples of the court declining to give effect to environmental concerns raised by local authorities, *Sabdoen* ceased to be the only example of its kind. See *Pinjarra Hills v Brisbane City Council* [1995] QPELR 334 where neighbourhood amenity issues considered under s 4.4(3)(a)(ii) of the PEA and traffic issues would have sufficed to defeat a rezoning proposal (Future Urban Zone and Rural Residential Zone to Residential “A” and Particular Development Zones), so did environmental impacts requiring consideration under s 4.4.3(f). The issues centred on koalas and aquatic life in Pullen Pullen Creek, particularly the platypus population – for which “the issue of water quality [indeed water quantity also] was seen as crucial” (344). Judge Newton said at 345I:

“... it is clear that the proposal, should it proceed, would significantly destroy the koala habitat east of the power lines and that such destruction would seriously deplete the food source of the koala population and greatly reduce the vegetated linkage used by the population for movement. Acreage development, by comparison, in my view would not remove the koalas’ ability to travel...”

- [89] At 346H it was accepted that steps could be taken to “minimise the problem of attenuation of peak flow in Pullen Pullen Creek. I would not be prepared to dismiss the appeal on this ground.” The reasons later contain the observation that:

“... without a yield analysis being undertaken to assess the impact of the development upon the base flows in the creek the extent of the impact is unknown although it can be measured. In my view such analysis should have been conducted by the developer because of the obvious significance that the development will have upon the platypus population in Pullen Pullen Creek and until such analysis is carried out the extent of the effect that the development will have on the base flow is simply not known. If the potential is increased by the proposed development for the creek to dry up in time of drought then this will obviously impact upon the viability of the platypus population in the creek.”

and proceed to conclusion on “The Environment” issue as to which:

“The Appellants acknowledge that there is obviously an element of risk with any development so far as the environment is concerned. However, the Appellants submit that subject to the imposition of conditions which reflect recommendations for planning measures to protect the habitats, the development proposal achieves adequate protection for the koala and platypus habitats.” (348)

...

“In my view unless and until more precise design detail is provided by the Appellants as to water quality devices proposed for the development this Court would not be justified in allowing the appeal to succeed in respect of water quality issues. I would reject therefore the appeal on this ground.” (350)

- [90] *Keilar Fox & McGhie Pty Ltd v Noosa Shire Council* [1996] QPELR 390 shows the respondent every bit as willing as it had been in 1988 (*Leisuremark*) to defend its judgments about amenity and environmental considerations, this time with the 1988 Strategic Plan applicable: 392 H-I. The developer (whose land was predominantly

in the Open Space PDLU designation, the balance in Rural Settlement) had successfully applied in 1989 for rezoning to Residential Single Unit of land in the Future Urban Zone of “stages 1, 2, 3A and 3B”. Applying in 1994 for rezoning of stages 4 and 5, it was required to provide an environmental impact statement and apparently made a second application in 1995. In the developer’s appeal against refusal Senior Judge Scoien said at 393:

“It would be an unwisely inflexible drafter of a strategic plan who prepared a plan so definitive of permitted and prohibited development. By its very nature a strategic plan must speak in generalities and must therefore admit of particular exceptions. It is the broad intent of the plan which is referred to in the authorities and s.4.4(5A). The broad intent of the Strategic Plan for the Open Space designation is:

‘To provide and maintain a range of open space areas of local to regional scale and to promote, where appropriate, the use of these areas for conservation, education, recreation and tourist purposes.’

The objectives set out in the Strategic Plan can be seen to be supportive of that. Thus understood, I consider that this application, which is to rezone to a zone which permits residential development, is contrary to the Strategic Plan. So the balancing act predicated by s.4.4(5A) must be undertaken.

The importance of giving due weight to the Strategic Plan on a rezoning application, because it indicates (as its name suggests) the forward planning for the area, has often been stated. See for example *Thomas Holdings Pty Ltd v. Council of City of Gold Coast* (1991) Q.P.L.R. 32 at 36 (Row D.C.J.), and *Brownless v. Council of the Shire of Caloundra* (1990) Q.P.L.R. 260 at 261 (Quirk D.C.J.). That has been given statutory effect by s.4.4(5A), *supra*.”

(The appellant would add to that couple of cases *H A Bacharach Pty Ltd v Minister for Housing* (1994) 85 LGERA 134, at 138 (a decision about the *Judicial Review Act* 1991) and *Lewiac Pty Ltd v Gold Coast City Council* [1996] 2 Qd R 266, at 273.) He went on to reject assertions that the earlier re-zonings supported those under his consideration as showing the 1988 Strategic Plan was out of date or as a precedent. Still on the same page, he identified the Future Urban Zoning as “one obvious planning matter which affects the Strategic Plan designation.” He considered the intent of the zone and said at 394:

“Thus, as is often said, the Future Urban Zone provides a bank of land for future residential use. It is a very important factor, and is often held to be decisive. See, for example *Wells v. Brisbane City Council* (1992) Q.P.L.R. 20; *Giuseppe Nominees Pty Ltd v Brisbane City Council* (1992) Q.P.L.R. 13.

It must however be appreciated that the intent for the Future Urban Zone which I have quoted contemplates delaying the urban development “until all services and all urban facilities can be provided”. Those considerations are wide enough to include one of the issues in this appeal, traffic. Insufficient confidence in traffic planning for the development would not qualify as the provision of

all urban facilities. Further despite a Future Urban zoning, nowadays it could hardly be argued that a responsible local authority or court would permit the transition to an urban zone if other matters of genuine public concern (not mentioned in the statement of intent in the planning scheme) stood in the way. Relevant to this appeal that would include environmental matters.”

- [91] Under the heading “Loss of Vegetation” his Honour at 398 cited and quoted from Local Planning Policy No 17 (adopted 11 July 1991), in particular as to its stipulating, relative to a rezoning application, that:

“Council will place significant weight upon environmental issues, particularly where it is determined that impacts arising from the development are likely to –

- (a) Remove habitats of threatened species in particular localities.”

That policy can be found in Exhibit 67 in this appeal. The site is habitat for “threatened species”, in particular the low lying section outside Area A and Area B (see T8-54), which boded to preclude R221-type development on that area by 1997.

- [92] His Honour’s approach, with which I agree, serves to refute the appellant’s sweeping contention (submissions 56-71) that policies should be given no or little weight or are of little account or “flexible” – for it shows that the court before the relevant date would accord weight to relevant policies in determining the fate of development applications. The reasons proceed to the Conclusion in the following way, illustrating the approach which a prudent purchaser would have anticipated in respect of the site immediately before the relevant date (I note also reiterated recognition of zoning as a planning ground having the potential effect of overcoming a PDLU designation in terms less friendly to development):

“I do not consider that the fact that before the developer could legally clear the *Acacia Attenuata* it would have to obtain a permit from a Government Department under the *Nature Conservation Act* removes from the Council or this Court the duty itself to consider the consequences of the possible destruction of a grove of these rare plants. Section 8.2(1) of the *Planning and Environment Act* requires the consideration. The destruction of this small habitat will not mean the end of the species, but it will make that result a little more likely. When there are so few areas in which it is known to grow even the loss of one is serious and causes me concern.

Given the rarity of the plant I cannot conclude that the Council was wrong in relying on its presence in stage 5 as a relevant factor leading to the refusal of the application.

There was some suggestion of the presence on site of another rare plant, *Eucalyptus Conglomerata*, which is listed as an endangered plant. I am satisfied that it has not at any relevant time been on either stage 4 or 5.

I do however, consider that in one more respect environmental questions militate against this rezoning and subsequent development. The site forms part of the 'Doonan Link'. This is a name derived as a result of a shire-wide vegetation survey carried out by the Council in 1955. A report defining important nature conservation areas and the linkages between them was prepared. The relevant part of that can be found as figure 2 to exhibit 16, the report of Mrs Anderson. It identifies an important conservation core, the Eumundi State Forest, to the west of the site and the Lake Weyba Conservation park to the east. The Doonan Link is a strip of virtually continuous vegetation connecting the two and it includes the site. While the banks of Eenie Creek and the unnamed tributary constitute probably the most important part of the Link, the fringes of those banks and the heath land are of considerable importance too. In reaching that conclusion I rely particularly on the evidence of Mrs Anderson and Dr Harrold. Indeed I did not understand Mr Carter, the environmentalist called by the developer, to deny the proposition.

The park which is proposed by the developer would contain the streams, banks and fringes. However on the evidence which I accept development of a large residential area in stage 5 would put pressure on the fauna and flora within the park. That flora contains two rare plants *Alyxia ilicifolia ssp manifolia* and *Symplocos harroldii*. Furthermore, the large area of heath land in stage 5 has environmental value in its own right as well as forming part of the Doonan Link.

All of that is relevant for the consideration of the Council and of this Court because of s.8.2(1) of the *Planning and Environment Act*. The Council considered that these inconsistencies with the environmental welfare of the Shire was a reason for the refusal of the application and so do I.

It is no part of the duties of the Council or this Court to delineate the uses to which the site may be put which would be consistent with proper environmental concerns. Each application is considered on its own merits.

Conclusion

Two planning grounds argue in favour of the rezoning. They are the fact of the current Future Urban Zoning and the need (in the town planning sense) for residential lots of the type proposed.

The question of flooding and water quality can be said to be neutral in that I find nothing in them which argues against the rezoning. However I do find that the issues of traffic (particularly) and vegetation loss argue very strongly against the rezoning, so strongly as to justify the Council's refusal of the application, a decision which I consider was correct.

It seems to me, however that these features would not properly prevent the rezoning for the proposed subdivision of stage 4. To that extent only the appeal is allowed. So far as stage 5 is concerned, the appeal is dismissed.”

[93] The appellant’s submissions acknowledge that:

“223. The recognition and deference given to environmental issues by local authorities and the Court has evolved over time. What was environmentally acceptable at the relevant date compared to now is no doubt different. The ‘balance’ may have shifted towards environmental protection over the last two decades as more coastal land was developed but there was (and remains) a constant requirement still to balance the need to accommodate a growing population with the need for environmental protection.”

[94] It offers *Transtate Developments Pty Ltd v Brisbane City Council* [1994] QPLR 258 as “a contemporary example of how the Court dealt with these issues”, citing page 262 in particular. Any implication that the balance had not shifted prior to the relevant date must be rejected. There was also reference to a number of decisions of Judge Quirk around the same time: *Sabdoen Pty Ltd v Redland Shire Council* [1989] QPLR 149 at 153G¹⁶, *R E Marriott v Maroochy Shire Council* [1984] QPLR 178 at 179K-180D (an objector appeal), *Liongrain Pty Ltd v Council of the Shire of Albert* [1995] QPLR 353 at 355I-356B (a conditions appeal) as well as *Hilcorp v the Council of the City of Logan* [1993] QPLR 199 at 201-203. His Honour considered it inappropriate for a local government to use provisions in state laws requiring consideration of environmental effects to preclude development on private land in order to avoid the obligation to compensate that could flow from resumption or recognition of “protection-worthiness” in formal planning instruments. These decisions of Judge Quirk also included one which might be regarded as coming too late, *Allied Estates Pty Ltd v Noosa Shire Council* [2000] QPELR 97 at 105E-I. There environmental considerations precluded the proposed development in the result – and not “under any compulsion arising from s 4.4(5A) of the [PEA]” (p109). The application was lodged with Council in December 1996, i.e. under the 1988 Strategic Plan. His Honour said:

“The major issues in the appeal were:

1. Whether the proposal would present:
 - A. an unnecessarily adverse intrusion upon the area’s environmental values particularly
 - (i) the water quality of Lake Doonella and the Noosa River catchment
 - (ii) the area’s existing flora and fauna
 - B. an unwarranted visual intrusion
2. Whether the proposal conflicted with formally expressed planning strategies that intended to:
 - A. ensure that the matters referred to in 1. are avoided
 - B. achieve appropriate and orderly development in the area
3. Whether the proposal would be likely to give rise to unacceptable difficulties in respect of traffic

¹⁶ In *Sabdoen* one of the two developer appeals against refusal was rejected on environmental grounds.

4. Whether there was a sufficiently demonstrated need for the proposal.

Strategic planning provisions were of considerable importance to the issues so raised. This importance is underlined by s.4.4(5A) of the *Local Government (Planning and Environment) Act* which provides that an application of this kind must be refused if it conflicts with any relevant Strategic Plan and there are insufficient planning grounds to justify approving the application despite the conflict.

At the time when the application was lodged a Strategic Plan gazetted in 1988 was in place but an extensive review of it had been undertaken. A revised Strategic Plan (in draft form) was publicly exhibited in December 1996. The new Strategic Plan was gazetted on 15 September 1997. The effect of s.3.4(1) of the *Local Government (Planning and Environment) Act* is that an application must be decided in accordance with the planning scheme in force at the time the application was lodged but such weight as it is considered appropriate is to be given to any new Town Planning Scheme.

It has never been the Council's position that no part of the subject land was suitable for development as a residential estate. In the 1988 Strategic Plan the subject plan was given two designations. While the greater part of it was designated Urban, two separate parts of the site were designated 'Public and Private Open Space'. A strip of width in the order of 200m (on the scale of the plan) follows the shore of the lake. The designated area extends back a little way along Cranks Creek and another lower lying area to the east. There is a smaller separate discrete area near the Beckmans Road frontage. While it was understood that the delineation of these designations was not intended to have been given on any exact or cadastral basis, in evidence estimates were made regarding the areal distribution of the two designations and it was suggested that some nineteen hectares (or approximately 26 percent) of the site had been designated as Open Space.

Without going into a detailed examination of relevant objectives and implementation provisions of the 1988 Strategic Plan, it can be safely said that the relevant Open Space designation was intended to further the objectives of ensuring that urban expansion does not result in undue environmental impact and that the Noosa River and lake system are preserved as a natural resource within the Shire. Such strategies were further developed in the 1997 Strategic Plan. The result was the production of a plan on a more cadastral base although with the delineation between the designations remained indicative rather than exact. What was clear was that the Open Space area (now designated 'Open Space – Conservation and Waterway Protection') has been increased substantially. The width of the area separating the Urban (now 'Detached Housing') designation from the lake was widened by about fifty metres and it now extended along both sides of the land and internally along a natural watercourse.

Estimates were made that the Open Space designation has been enlarged to about thirty-six hectares (50 percent of the total area)."

- [95] As I read the reasons, the outcome would have been the same had the 1997 Strategic Plan never been adopted. The headnote (reflecting the reasons at page 107) notes that the preservation of visual amenity was afforded the highest level of protection in the Strategic Plan. The reasons at 105 state:

"The subject land is plainly in that category [i.e. privately owned and environmentally sensitive] and in respect of it each of the Strategic Plans has recognised that there must be a balance between the proprietor's interest in developing the site and those of the community in providing appropriate environmental protection. This is seen in the designation of part of the site for urban use and part to be retained as Open Space. The merits of the decision made might be debatable and this is illustrated by the differences in the views of the experts who gave evidence. What cannot be said however is that the balance that has been struck by the planning authority demonstrably lacks foundation.

The strategic planning decision taken in 1988 and reaffirmed (and reinforced) in 1997 to identify a considerable part of this land as not intended for urban development was plainly seen as a major obstacle to the proposal. The area close to the lake shore is particularly important in that context...."

I am making observations about this "out of time" decision, which would not have been available for consideration in 1997, given the applicant's reliance on it (para 224 (d)).

- [96] No submissions or comment came from the appellant regarding *Keilar, Fox & McGhie*, the case in the court preceding and most contemporaneous with the relevant date, which I consider a hypothetical prudent purchaser properly advised would have seen as being the most reliable indication of the approach that the court would have taken to environmental matters under the regime of the 1988 Strategic Plan. Mr Buckley's hint in paragraphs 14 to 16 of his court report, Exhibit 37 that he or others had established a good record of vanquishing the Council in the court should not have too much reliance placed on it; he certainly did not prevail in *Allied Estates*, or *Lowe Pty Ltd v Council of the Shire of Noosa* [1999] QPELR 250 which the appellant included in its bundle of cases as a judicial comment about the supposed greater detail in the 1997 Strategic Plan; he may have been alluding to his experience before the relevant date. He disavowed any suggestion that he would "keep score" - "I am here to assist the court": T24-26, 27; the Council claimed nine goals.
- [97] Returning to the factors the appellant offers as relevant to the court in reviewing any Council refusal of a development application, and in respect of its case generally, one notes the failure to acknowledge the importance of zoning, which has been the same for both the before case and the after case, except so far as "planning scheme", of which it forms part, is referred to. PDLUs and strategic plans command much greater attention – for example in paragraphs 16(g)(iv) and 107. This overlooks the importance of the zoning, which there seems to be a specific attempt to downplay.

The submissions correctly (para 106) identify the difference in development potential between the strategic plans as the crux of this appeal, but they must not be considered in a vacuum. In what follows, obeisance is paid to zonings by acknowledging that PDLUs do not have equivalent “force” (citing *Beck v Atherton Shire Council* [1991] QPLR 56, 59). *Leda Holdings Pty Ltd v Caboolture Shire Council* [2006] QCA 271 at [24] is cited for rejecting the suggestion that there is principle established in this court that a zoning “prevails” over a strategic plan or DCP. The Court of Appeal there refused leave to appeal where one of the errors in law attributed to this court at first instance was alleged application of such a principle based on the judge’s quotation from *Cornerstone Properties Ltd v Caloundra City Council* [2004] QPELR 54 at [35]:

“It is also well established that when there is a conflict between the zoning of a site and the planning objectives and designation in a forward planning document (such as a strategic plan or DCP) it is the zone that ought to prevail as it is the zone (in transitional planning schemes) which determines development rights.”

It is not necessary to embrace the challenged “principle”; his Honour’s reasons went on:

“In *Stubberfield v Redland Shire Council* [1993] QPELR 214 at 216, Quirk DCJ observed,

‘It would appear fairly fundamental that the lands zoning in the Town Planning Scheme as Residential A was a matter of considerable weight and more than capable of amounting to a planning ground sufficient to justify approving the application despite its apparent conflict with the Development Control Plan. Any such conflict would be overshadowed by an evident conflict between the lands zoning which is depicted in the plan in a very precise fashion and the content of a Development Control Plan which is not, and not intended to be as cadastrally accurate.’”

The Court of Appeal accepted that Mr Gore QC had established there is no such “principle established” in this court and was satisfied that the primary Judge had not decided on the basis that zoning prevailed over the strategic plan. The importance of zoning was accepted by the Court of Appeal, for example at [33] in endorsing:

“... the common sense proposition stated by Quirk DCJ in *Stubberfield v Redland Shire Council & Anor* [1993] QPLR 214, where His Honour wrote:

‘It would appear fairly fundamental that the land’s zoning....was a matter of considerable weight and more than capable of amounting to a planning ground sufficient to justify approving the application despite its apparent conflict with the Development Control Plan.’

The site zoning has to be regarded...”

R221 and the Council's attitude to it

[98] The appellant's "before" case was originally in terms of the 1988 approval referred to in paragraph [6] above, understandably enough, given the Council's declaration of its compliance with the 1988 strategic plan. Much was made of the notion that councils "act by resolution", as had happened in 1988 in that regard on at least two occasions. I reject any notion that such a resolution affects rights in the way that a town planning permit or development approval does; a differently constituted (or differently advised) council may take a different view. Even disregarding the changes that were notoriously occurring at all levels of government and in public opinion according much greater weight, in some cases determinative weight, to environmental and like considerations in the assessment of development proposals, the appellant is not entitled in this appeal to rely on the 1988 "approval", which never went anywhere as things turned out, in the sense that the Governor in Council was apparently never seriously asked to approve the rezoning. Statements by Council, even in a serious context in Exhibits 8 and 9 of satisfaction that the proposal was in accordance with the 1988 strategic plan and the like create no estoppel, nor in any way bind the Council, which is free in this appeal to contend that whatever may have been done in this regard, or said, was wrong. This Council's freedom was recognised in *Abacus Funds Management v Sunshine Coast Regional Council* [2012] QPEC 46; [2012] QPELR 669 at [20], citing *Seymour CBD Pty Ltd v Noosa Shire Council* [2002] QCA 446 at [10] and [19]-[22].

[99] Exhibit 8 (7 March 1988) notified a decision six days earlier to approve rezoning, which required further approval from "George Street", if State authorities, culminating in the Governor in Council, may be so described. It stated:

“(D) Council adopt the following reasons in support of its application to the Minister:-

- (1) The proposal accords with the objectives of Council's Strategic Plan;
- (2) The intensity of development proposed is suitable to the subject site;
- (3) The proposal will not create significant impacts upon the amenity of residential uses in the area;
- (4) Additional traffic loads may be adequately catered for by road upgradings in the area;
- (5) Points raised in objection to the proposal may be adequately controlled by conditions.”

The reference was necessarily to the 1988 Strategic Plan, gazetted only the month before. The letter advised that the application would not be forwarded to the Minister until, inter alia, provisional approval for the proposed canal had been obtained from the Department of Harbours and Marine.

- [100] The 1988 approval envisaged development of the whole of the land. The Council approved rezoning of Lot 2 on RP166371 (which covered a larger area than the site, given that the Macquarie Lodge Site at the northern end of Banksia Avenue had not yet been sub-divided off) by rezoning of the whole site to the Special Facilities (Settlers Cove Resort and Development as shown in plan 59490) zone. That plan (Exhibit 134 page 130, as well as in other places) shows in the southern part of what is now known as “Area B” (the southern dune area) a commercial precinct, the northern part being precinct 6 – Fairway Villas Precinct (390-430 units). On the northern high dune area was precinct 4(a) Bay View Terraces Precinct (150-190 units) in the eastern part on an area having a longer frontage to Banksia Avenue than Macquarie Lodge presently enjoys. Adjacent to it precinct 2(a) Hotel Precinct (600 suites) accounts for the bulk of the northern dune area (Area A in subsequent parlance) except, it seems, for precinct 7 River View Apartments Precinct (75-115 units) occupying the western part.
- [101] Further west, on low lying land, was the U-shaped precinct 5 Wharf Townhouses Precinct (210-250 units) cradling in its hollow a canal cut from Noosa Inlet at its western extremity in a south easterly orientation for about half the depth of the site. With the exception of buffer zones 4(b) and 2(b), together extending along the eastern half of the Noosa Inlet frontage, and 3(b), along the Weyba Creek frontage, the balance of the site was precinct 3(a) Golf Course Precinct which might include certain shops including a workshop, indoor entertainment (including squash and a bar), a catering shop and a music bowl. The buffer zones, the two sections of which do not meet, were 25 metres wide and provided at the insistence of State authorities adjacent to a designated fish habitat reserve. The only other signs of environmental or like concerns being harboured were landscaping (with a nod to retaining existing vegetation where possible – condition 19, page 185) and retention of mangroves, mangroves were not meant to be removed without the approval of the Department of Primary Industries (183) which appears to have been the inspiration for such “environmental” conditions as there are requiring storm water drainage during or after construction not be permitted to enter the fish habitat reserve with a buffer surround directly, “all storm water drainage... to be directed to a single outlet being a canal” (ibid). One particular concern was filling and excavation: “10.3 No runoff of contaminated waters resulting from filling or excavation works is permitted to enter directly to the Noosa River or Weyba Creek.” (181) There was serious concern about flooding which appeared to emanate from George Street, in particular from the Department of Local Government and the Harbours & Marine Department which enjoyed and wished to exercise control over the canal (see page 107 of Exhibit 134); the inadequacy of information regarding flooding was a persisting theme. On 26 May 1988, the appellant instigated appeal 97 of 1988 in the Local Government Court against a large number of the Council’s development conditions (page 270).
- [102] The Town Planning and Engineering Report of February 1988 is instructive in the extent to which it accepts the notion of development, almost to the exclusion of other concerns:
- “8.0 CONSIDERATION OF OVERALL DEVELOPMENT CONCEPT

The site features Urban Area, Public and Private and Open Space Area and Tourist Facility Growth Area designations upon the draft Strategic Plan, Fig. 8.1. Councillors will recall that the applicant objected to the draft Strategic Plan in regard to these designations, although the objections were not upheld. It is noted that the applicant's consultants indicate that the proposal accords with the requirements of the draft Strategic Plan.

The designations upon the plan have come about through the level of constraint applicable to the site, in particular:

- (a) sand dune problem area;
- (b) steep slopes;
- (c) flood prone nature;
- (d) mangrove areas; and
- (e) sensitive frontage to Weyba Creek and Noosa River.

A further constraint comprises peat deposits through the site.

The above aspects have been addressed in the applicant's submissions and the development proposal in broad terms is sensitive to the issues involved. Much of the area included within the Public and Private Open Space Area designations upon the draft Strategic Plan Maps, will be utilised for some form of open space function and the dominant land use within those areas will be open space. The proposal clearly serves tourist functions and it is considered that the objectives of the various draft Strategic Plan designations will be met.

Whilst it is clear from the engineering consideration that there are significant aspects which must be examined in more detail relating to flooding and the canal, it is clear that the general concept of development of the nature proposed is satisfactory over most of the site. As may be discerned from the comments of the Department of Local Government, there are reservations, at this stage, in regard to development works occurring within the flood prone area. Figure 8.2 defines the approximate location of the Non-Urban zone, superimposed over the indicative building form plan. It can be seen that the majority of unit/hotel development is proposed to occur outside the existing Non-Urban Zone. Accordingly, it is considered that the general concept is satisfactory, however methods of dealing with the 'Non-Urban Zone' area must be considered.

The Department of Local Government indicate that without a proper study of flooding within the estuary, it may only support rezoning of part of the site. The Department have indicated that this would enable appropriate floodplain management, whilst optimizing and maximising development over not just one site but all sites. Clearly, development is not precluded on the site at this point, and development may be possible in the future. By the same token, it is necessary to ensure that future residents both on the subject site and external to the site, are adequately protected from flood impacts."

- [103] This assessment is presumably the basis for views that the Council adopted in respect of the 1988 strategic plan (153). The concerns were dealt with in a rather perfunctory way, without pause, notwithstanding that the “Geotechnical... Report does not analyse stability of the existing sand slopes nor the stability of roadways cut into the sides of existing sand dunes”(141 – Section 810 is at page 153). What seems from modern perspectives a “devil may care” approach is exemplified by the following “Geotechnical requirements”:

“6. Peat Removal

A major portion of the lower area including the canal area contains peat. Generally speaking the area prior to excavation works will require draining to a settling pond by a system of herringbone drains. The peat will then be excavated, stockpiled and dried for removal or reuse. No actual quantities have been calculated but it is understood that the majority of the peat can be re-used on the gold course.

7. Vegetation Removal

The developer proposes to reprofile the area in the northern eastern corner of the site. It will therefore be necessary to remove all vegetation from this area relatively early in the staging. As this area is in close proximity to the Sand Dune Problem Area, close attention to the effects of machinery and the removal of vegetation will be required. The means of construction will also be required to be assessed. Similarly, removal of vegetation is also of concern in other areas of slopes 20 degrees to 25 degrees.”

- [104] The absence of any suggestion that the site might have environmental values is remarkable. Cameron McNamara’s lengthy report in support of the application for rezoning contained in a letter of 2 October 1987, after stating in relation to the (then) draft strategic plan that:

“2.10... The dominant land use category is proposed for the site are Urban and Public and Private Open Space the latter designation not intended to stop development of the site perhaps to ensure that any development takes into account environmental, flooding and aesthetic considerations. The extensive investigations undertaken in relation to the planning of the development will ensure that the stated criteria are met.”

and includes material from other consultants including Section 6 Tidal Wetlands: “Of particular interest to this report is an assessment of the effects of this development proposal upon existing Tidal Wetlands along Weyba Creek as these are within a Fisheries Habitat Reserve. The proposed development concept will thus be required to retain intact the tidal shoreline along Weyba Creek and commenced development set back a sufficient distance to retain integrity of this wetland zone, as well as retain the aesthetics of the lower estuary.” The terrain and vegetation types encountered on the site are covered, Figure 6.2, noting the “(regrowth) tall semi closed scrubland” in areas A and B and dominating the site, otherwise “freshwater sedgeland” with a small patch of paper bark swamp forest

abutting the north of it. The only concern was to protect the fish habitat (following discussion with the DPI) and adjoining salt marsh which was to “remain undisturbed and the outer mangrove fringe remain uninfluenced by development.” It was thought that the seepage of fresh water due to a lower groundwater table created by the tidal basin due to the seepage of freshwater might lead to “potential eastward expansion of the salt march couch zone”, apparently seen as a good thing. No value was ascribed to the freshwater wetlands. Another consultant, dealing with the golf course at paragraph 7.3.5 advised – surprisingly in light of the excitement about peat shortly to arise:

“Some type of sub-surface drainage system may also be used to drain water from the peat deposits to the canal.”

- [105] Not even the process of calling for objections to the rezoning application elicited much about the environment. Section 5 of the Town Planning and Engineering Report of February 1988 (134) acknowledges two letters of objection containing three signatures, the main points being that 18 trees along Weyba Creek should be preserved in the interests of stability of the bank (the Cameron McNamara Report described erosion as a problem) and as a roosting area for cormorants. The reporting officer thought that concern could be dealt with by conditions and will be covered by the 25 metre buffer strips. Otherwise the objections apparently related to the proposed tavern, asserting a lack of need, traffic issues and threat to the amenity of Banksia Avenue, “a quiet residential street”; the Report’s author considered that resort traffic was more likely to have a significant impact on amenity of Banksia Avenue (and dismissed the objector’s concern as “the objector’s residence is some 300 metres from the proposed tavern”).

- [106] The Council determined to defend appeal 97 of 1988 and negotiations occurred. Exhibit 9, the Council’s letter of 16 November 1988 is in fact an offer to agree to an order of the court by consent in particular terms (item (1)(C) reproduces exactly the “reasons” quoted above from Exhibit 8). No such order was ever made. The appellant filed notice of withdrawal of the appeal dated 22 November 1989 (Exhibit 134, Page 400_8), its lawyers having withdrawn the rezoning application by letter of 3 October 1989 (page 400_7). The acting director of Local Government Department on 22 February 1990 wrote to the Council advising that “His Excellency the Governor in Council today rejected” the application made by the Council for amendment of the town planning scheme by rezoning of the site. The Council had got its solicitor to redraft the proposed consent order “substantially” to a form sent to the appellant’s solicitors on 21 April 1989. Although nothing came of this document, one may detect in it a developing concern for environmental issues. A new provision is:

“9.2.3 Filling and excavation works are to provide for adequate Open Space corridors for the movement of wildlife between areas required to be maintained in their natural state, both on the subject site and in other areas adjacent to the subject site, in accordance with condition 17.5 below. Prior to the commencement of filling works, a plan is to be submitted to and approved by the Shire Planner, indicating the proposed Open Space corridors. Such areas are to be adequately delineated on site by means of the application of a ribbon.”

I have been unable to find any clause 17.5.

- [107] In my opinion, only an irrational purchaser would have taken any heart from the Council's statements and actions in respect of R221 in 1988, by September 1997, which is not to say that such a potential purchaser might not contemplate reminding the Council of what it had said and done nine years before: to that extent there might have been some value in R221; the potential purchaser would not pay for it. That the role of environmental considerations had changed enormously in the meantime cannot be gainsaid. To the extent that R221 stands for the appellant's before case, evidence as to the feasibility of getting it constructed was presented, whose effect was qualified by the Council's opposing experts by pointing out the shortage of reliable information about ground conditions to support reliable costings and the like. That "before" case is rejected, lacking as it does any endorsement by the appellant's architect Mr McKerrell, planner Mr Buckley and valuer Mr Brett, who offered no basis on which the court, if it had been of a different view, could assess compensation for loss of development potential outside Area A and Area B.

The Noosa Sanctuary Approval

- [108] More pertinent from the potential purchaser's point of view, given its relative recency, is the Council's approach in respect of a proposed development next door at Noosa Sanctuary, which shares some common features with proposals that had been or would be likely to be made for the site. The court's order of 19 June 1997 in appeal 425 of 1995, made with the Council's consent, contains the relevant approval. The appeal was against conditions incorporated by the Council in its approval of an application for Town Planning Consent for a multiple dwelling (216 units) and ancillary facilities (resort administration, shop, restaurant and recreational facilities). Other things being equal, it would not be unusual to expect to get approvals equivalent to one granted next door. The developer was allowed 12 units each in eight blocks, 24 each in six further blocks, with a two storey limit, which did not apply to a central facilities building of 2,800m². Development was allowed to extend to the RL level of 1.9 metres. Filling was committed in the development area, indeed required to provide platforms at 2.5 metres for buildings. The environmental values of the Noosa Sanctuary land were at least equal to those of the appellant's site (indeed together they constitute a single wetland), although the site is more than three times as extensive. The striking feature principally relied on by the appellant is the allowing of developments over about of the Noosa Sanctuary Wetland area. Mr McKerrell did not propose development as far west as in Noosa Sanctuary. The developer there was certainly not allowed everything it asked for. Notes on the plan forming part of Exhibit 10 indicate that the proposed GFA was 25,000m², as against "allowable GFA estimate from original approval 33,000m²"; the proposed density was 518.4 (216 X 2.4) against and allowable density of 702.52 – residential low density for the 5.846 hectares that had been rezoned Special Facilities (resort accommodation and ancillary facilities) in 1986.
- [109] Matters which would have given a purchaser of the appellant's site pause before placing reliance on this approval include the following:
- The land had been rezoned. There was debate over the implications of Mr Weyhardt's letter seeking advice for the Council from a consultant about the environmental impact study as to whether it bespeaks an attitude that the Council was committed by the rezoning to approve development consistent with the name of the new zone, which the letter conveys in my opinion, or whether the true

tenor of it is that, all arrangements with the developer having come to and end by effluxion of time, the Council had a free hand to assess any development proposal closely, a notion which the letter also conveys. I think that the letter conveys both notions and, more importantly, that both notions were correct. I think there was (and had to be) acceptance that some proposal had to be approved. Section 65 of the 1990 planning scheme effectively requires as much. The Council's assessment process forced significant scaling back.

- If something along the lines of what was approved had not been, the Noosa Sanctuary land, of which very little is above 5 metres AHD (taken as the benchmark for the appellant's site by reference to (non-river) flooding) or even 2.5 metres AHD, that land would have been effectively sterilised from the point of view of any development at all. Such a notion has appealed to me, but I acknowledge that there is no particular support for it in any document in evidence or expert opinion. Nevertheless, I am inclined to think that some such idea played a part, if only as a concomitant of the consideration dealt with in the preceeding "dot point".
- It is clear that the Council's reasoning set out in the town planning department's report of 17 February 1995 prepared for the Council's ordinary meeting of 2 March 1995 at paragraph 5.2 (Exhibit 150, page 709) adopted a glowing assessment of economic benefits expected to be generated by the proposal by quoting, from the environmental impact statement, perhaps a curious source:

"The development of the Noosa Sanctuary Resort would generate significant economic benefits for the Sunshine Coast and State economies. Initial gross impact will be investment of \$22.5 million and employment of 80 people during construction. Flow-on effects during construction will total \$21.6 million and create 582 person years of employment. Gross annual impact of resort operations will be an addition of \$10 million in State Gross Product and 296 job opportunities, while net impact will be \$2.8 million and 84 additional job opportunities. It is possible that through developing a unique product and innovative marketing, Noosa Sanctuary could attract visitors that would not normally stay in the Noosa region. If so, economic benefits may be considerably greater than those estimated above.

The source of the ecologist's numbers was the economic impacts report of KPMG Peat Marwick of 10 August 1993:

"6.0 Conclusion

The development and operation of the Noosa Sanctuary Resort will generate significant economic benefits for the Sunshine Coast and State economies. The major impacts are summarised below.

- Construction – Gross Impact

The initial impact of the construction of the Resort will generate an investment of \$22.5 million (1993 dollars) into Sunshine Coast economy and directly

employ an average of 80 persons throughout the construction period.

The flow-on effects of the construction phase on the economy are estimated to be \$21.6 million to State Gross Product and the creation of 582 person years of employment, both directly and indirectly, during construction phase.

- Resort Operations – Gross Impact

The operation of the Resort will generate significant additional revenue, at the Resort directly and at other businesses in Noosa Heads. The gross annual impact of the Resort's operations is estimated to be \$10 million to the State Gross Product per annum and 296 additional job opportunities per annum.

- Resort Operations – Net Impact

The principal net additional benefit to the Sunshine Coast economy of the Resort's operation is estimated to be the accommodation of approximately 10,000 visitors who previously would not have been able to stay in Noosa Heads during the peak tourist season due to the lack of available accommodation. These visitors are estimated to generate an additional \$2.8 million in State Gross Product and 84 additional job opportunities per annum.

- Resort Operations – Greater Potential Impact

Through the development of a unique product and innovative marketing strategy, the Resort may be able to attract a new segment of the visitor market that currently does not visit Noosa Heads. If this situation occurs, the net impact of the Resort's operations could be significantly higher than estimated in this report."

It seems to me that the appellant's site is not being presented in this appeal as one for a visitor-focused development in the context of assertions as to its highest and best use in the "before" case. I think that this deprives it of a "selling point" that appears to have influenced the Council at Noosa Sanctuary – while recognising that the Council devoted considerable energy to reducing the amount of physical development, and in turn of visitor accommodation there. The consensus of opinion is that the Noosa Sanctuary approval was surprising, a good number thinking it was a mistake, even at its time. In those circumstances a certain amount of attention has been devoted to seeking explanations for the "surprising" decision.

- There is no justification for following one problematic planning decision with another which would be in similar case. There would be no obligation on the assessment manager (Council or court) to regard Noosa Sanctuary as a precedent.
- For whatever reason, from well before the relevant date, environmental considerations were pushed more strongly by both the Council and the State, through various entities) in respect of the appellant's site than in respect of

Noosa Sanctuary. In the latter, the Council seems to have applied in vain for support from George Street for the raising of environmental concerns – no so for the appellant’s site following the lodging of development application R527, which attracted objections from the public in unprecedented numbers.

- The extent of public opposition to development on the site flushed out by R527 must be accounted enormous; the objections were in thousands, while for Noosa Sanctuary they were barely in tens.

Height Limits at Noosa Sanctuary

- [110] The Council has always insisted on strict height limits in Noosa Sanctuary as documents in exhibit 150 demonstrate. The rezoning deed of 21 August 1986 (replete with references to its purpose of tourist resort development on the site – for example in Recitals (b) and (c) and clause 1) had the developer covenanting not to erect or apply for any building in excess of two storeys in clause 3(5) and to extract a similar covenant from any subsequent owner; site coverage in Area A was limited to 35%, maximum residential density to 160 persons per hectare. The idea that “all buildings shall be restricted in height to not more than two storeys or two storeys over a fully or partly underground car park which would comply with Council’s policies” was proposed by the developer’s then representative as early as 19 May 1983 “following discussions with Council staff” (page 810, page 841, a letter setting out conditions embraced by the Council on 1 August 1983, page 807). But the Council indicated requirements that all land below the 1.9 metre contour line be zoned Open Space, but retained in private ownership apart from three areas to be transferred free of cost to Council or the Crown as environmental parks. Special conditions proposed included 1(f) that “the development shall be completed within a period of five (5) years from the date of gazettal of... rezoning.” That date proved to be 23 October 1986.
- [111] Inaction on the developer’s part lead to the Council terminating the rezoning deed, although the rezoning to Special Facilities (resort accommodation and ancillary facilities) and special facilities (tourist facilities) remained following approval of the changes to the planning scheme by the Governor in Council (exhibit 150 page 150, exhibit 40, exhibit 40A). The Council’s view, which it seems was accepted, was that any tourist development at Noosa Sanctuary required a further planning application. When such an application was made in 1992, notwithstanding that the planner engaged contended that State authorities required no Environmental Impact Statement (page 105), which the Council disputed (107), such a statement was prepared in 1993 (page 151, also exhibit 84).
- [112] When approval was finally recommended by Council officers, whose earlier requirements included reducing the number of multiple dwelling units from 276 notional two bedroom units to 216¹⁷ (747) pertinent conditions found their way into the letter of 29 September 1995 advising Council’s resolution to approve (development rights to arise only on issue of a Town Planning Consent Permit) (pages 872-73). Conditions were to be imposed whereby:

¹⁷ Council officers had wanted 204 (739) and the population density reduced to about 88 persons per hectare (747), down from 113 persons per hectare – equivalent to 662 persons (745).

- “2. The plans submitted for Building Approval are to comply with the following requirements:-
 - 2.1 The residential buildings are not to exceed 2 storeys and 8.0m in height from the existing natural ground surface level in accordance with Planning Scheme requirements.
 - 2.2 The central facilities building is not to exceed 3 storeys and 10 metres in height.”

The “number of attached units in a plane” issue was dealt with in this report (15 September 1995) as it had been in the predecessor of 19 February 1995.

- [113] A notice of appeal was lodged against the conditions of the Council’s approval, in which one reads:

- “7. In particular, but without limitation, the conditions are challenged on the following bases:
 - 7.1 Condition 2.1 and 2.2 – The restriction on height is arbitrary. It has no foundation in the Respondent’s planning documents and is not relevant to the development.”

- [114] Judge Quirk’s order of 19 June 1997 made by consent of the Council and the developer at Noosa Sanctuary resolved the height issues in stipulating:

- “2. The plans submitted for Building Approval are to comply with the following requirements:-
 - 2.1 The residential buildings are not to exceed 2 storeys and 8 metres in height from the existing natural ground surface level in accordance with the Planning Scheme requirements, except where the applicant is required by Condition 13 to fill the pads for residential buildings to RL 2.5 metres AHD. Where filling is required in accordance with this condition a maximum of 30% of the roof may exceed the required height limit, but no greater than 8 metres in height from RL 2.5 metres AHD. The roof shape and forms are to be to the reasonable satisfaction of the Shire Planner.
 - 2.2 The central facilities building is not to exceed 3 storeys and 10 metres in height above existing natural ground surface level except with the approval of the Shire Planner to achieve a central focus for the development. ...
 - 2.4 Maximum number of units permitted is 216 two bedroom units.”

- [115] Environmental concerns being of importance is illustrated by the events leading to reduction of unit numbers. At its meeting of 2 March 1995, the Council had resolved to:

“Advise the applicant that whilst the uses proposed are considered acceptable, amended plans are required to be submitted addressing the following:

- a) A substantial reduction in the number of units to provide for the retention of part of the existing open eucalypt forest on site, the creation of wildlife corridors and creation of Open Space and landscaping between the blocks of units to the western boundary;*

... ”

[116] I agree with Mr Venn that respecting the height limits on Noosa Sanctuary would have limited any development on the southern part of Area B in Settlers Cove to two storeys. It is of interest that his openness to three storeys away from Banksia Avenue behind the shield of structures of two storeys along it was not reflected in Noosa Sanctuary by higher buildings being allowed back from Noosa Drive.

[117] I think that Council’s expressed justification for reducing the scale of development at Noosa Sanctuary indicates the line that would have been taken in respect of the appellant’s site before the relevant date.

R527

[118] Running more or less in tandem with the Noosa Sanctuary matter was the appellant’s new development proposal, “R527” lodged just before Christmas 1994, following its consultants two years earlier making to the Council a request for environmental impact statement terms of reference for lots 1 & 2 RP801918. There are some interesting points coming out of the planning department’s report of 9 October 1998 for the Council’s ordinary meeting on 22 October 1998. The report was in the context of the Council seeking to compromise the present appellant’s appeal against a “deemed refusal” of R527, number 5340 of 1997. This was relied on as providing support for a proposition that the Council in 1997 was prepared to accept buildings of three storeys. See page 19 (Exhibit 135 page 1082); however, one can see at page 30 (1093) the officers’ unhappiness and ambivalence in this regard and acknowledgement that “three storeys at 12 metres may give some potential for concern by existing property owners on the eastern side of Banksia Avenue”. It may be noted that a resort hotel was a compulsory part of development (in precinct 6), a part that, if successful, would expand tourism in Noosa, and warrant support: *ibid.* The Council decided to allow the rezoning proposal to proceed at the meeting. The “resort” was to go in a Special Residential Density zone within the Detached Housing PDLU designation. The record of the decision (Exhibit 135, 1175, at 1179) records that:

“The degree of conflict between Council’s decision on Precincts 5 and 6 and the 1997 Strategic Plan is not considered to be detrimental to the intent of the Strategic Plan and it is considered there are planning arguments to favour Council’s decision based on the following: -

- The recognition of the need to offer sites for resort developments in the Noosa Heads area.

- The proposal will have no significantly adverse environmental outcomes, compared to the use of the site for dwelling house purposes.
- The use of this land for resort purposes, will not detrimentally impact on the amenity of any nearby residential uses.
- The proposed resort development will not create any traffic hazards and nor will it encourage the passage of resort traffic through existing residential areas, as may be the case if it is alternatively developed in the Residential High Density Zoned land.

8. CONCLUSION

In summary, the decision of Council is generally very much in accordance with the Planning Scheme. In many instances, the development outcomes will be advantageous to the community and compare favourably with the Scheme. The aspect of a resort development in the southern part of the site, is the only instance of a conflict in respect of the 1997 Strategic Plan. There are however, reasons to accept that development form in that part of the site.”

The point of this document was to demonstrate that planning grounds existed sufficient to overcome the conflict with the 1997 Strategic Plan in respect of area B; even though it was the 1988 Strategic Plan that applied (and was considered as well, in the context of concern that development in Precincts 5 and 6 might be too intensive or intrusive and of inappropriate height) it seems clear that the exercise of assessment against the 1997 Strategic Plan was gone through. The outcome rather suggests that if a like development had been applied for on or after the relevant date it would have been approved.

- [119] In this appeal, from the outset, the appellant’s position has been that by the time of the assessment of R527, “towards the relevant date... environmental issues loomed large”, but that the assessment was “against the impending 1997 Strategic Plan” (T1-43) so that while there might emerge “some idea of the issues which were to face an applicant in 1997”, there is “no real guidance as to a true assessment or the... development potential of the land under the 1988 Strategic Plan regime” (T1-43). As the Council noted by reference to the appellant’s amended points of claim, which so alleged in paragraph 24(a), R527 in its final form represented one manner in which the land could have been developed for a tourist resort... consistently with the 1988 Strategic Plan (T1-64). The Council argued that the prospect of approval was not adversely affected by the adoption of the 1997 Strategic Plan, but the comparison with R221 was “a measure of heightened environmental awareness and scrutiny that occurred... throughout the 1990s” (T1-79). The Council admitted paragraph 24(a) and alleged that R527 represented the highest and best use of the land as at 4 September 1997, further that it represented the highest and best use “on the basis of the planning scheme then in force”, as demonstrated by its support for approval in consent orders of the court of 22 November 2000 in appeal 5340 of

1997 when the planning scheme including the 1997 Strategic Plan had been in force for more than three years: amended points of defence, Exhibit 39, para 24.

- [120] R527 was a development application made in 1994 with similarities to R221. Issues raised by the Council and State authorities led to changes being made which, as it happened, Mr Buckley notified to the Council by way of an “application to modify” and explained in a letter of 24 July 1996:

“In summary, the elements of the modification may be described as follows:

- removal of the golf course component of the application;
- removal of the lake component of the application;
- amendment of the accommodation unit component of the application (generally abutting Banksia Avenue) to remove that component relating to a proposed ‘Residential High Density’ zone. This is proposed to be converted to ‘Residential Medium Density’ such that only medium density development is proposed in this locality;
- removal from the application of the Residential High Density zoned land to the north of the site.

The modified application in its physical form, seeks to encourage accommodation units opposite existing residential zoned land along Banksia Avenue; and, seeks to put in place a zoning which will encourage the development of tourist facilities at the southern end of the site in a location well removed from the existing residential areas.

The northern Residential High Density zoned land, previously described, will be developed separately in accordance with its current use entitlements.

I would confirm advices previously given by Mr Tate that it is not proposed to dedicate any public open space at this stage. It is the applicant’s view that such dedication is more properly a matter resolved at possible future subdivision stages.”

- [121] The Council accepted, notwithstanding objections on behalf of the Queensland Conservation Council and the DPI,¹⁸ that no new rezoning application need be

¹⁸

The DPI’s letter of 21 November 1996 indicates continuing opposition to the proposal:

“The major modifications which have been documented in this submission, give some consideration to the environmental and fisheries values of the site. However, further scope exists in scaling down the development area to more closely align the development objectives with appropriate standards of environmental management and mitigation (previous advice of 6 March 1995 refers). One critical feature is the large extent of freshwater wetlands contained within the modified boundary area marked for development.

Previous advice of this Department indicate that the development constraints refer to the requirement of a functional buffer around marine *and* freshwater wetland systems, and a water quality monitoring and reporting program. These protection measures should have particular regard to the fisheries habitat values of natural wetlands, including the Weyba Fish Habitat Area (015-019A).”

lodged and that there need be no readvertising – but that the “well in excess of 2000 objections from the community” received by 13 March 1995 “would stand against the amended proposal as well” (Exhibit 134, Pages 874-5). The Council considered itself unable to complete assessment as the promised plan of development for the amended proposal was not forthcoming by the time of the appellant’s institution of appeal 5340 of 1997 against a deemed refusal. A Council Town Planning Department Report of January 1998 stated (ibid 877):

“The appeal was filed in the Planning & Environment Court on 16/12/97. Notification to the objectors of the appeal was undertaken on 23/12/97, resulting in many distraught residents contacting Councillors and staff.

The circumstances in which the appeal has been filed are unfortunate. Since formal amendment of the application in July, 1996 there has been a need for an amending Plan of Development from the applicant to ensure consistency between the written proposal and that shown on the plans. Note that a Plan of Development is integral to the Special Facilities Zone. Since July, 1996 the need for this plan was impressed upon the applicant’s representatives on many occasions, including during the month on which the appeal was filed, when staff were again advised that it would be submitted.

The simple fact is that the application is incomplete without the plan and Council was not in a position to determine the application without it.

The land the subject of the application is zoned and committed for some level of development under both the 1988 and 1997 Strategic Plans. The application does not comply with the zoning structure over the land nor does it comply with the 1988 or 1997 Strategic Plans. Council and its staff have shown good faith in negotiating with the applicant’s representatives with a view to achieving a modified approval consistent with the Planning Scheme. Whilst such negotiations have been lengthy, there was ample evidence that the applicant was prepared to modify the proposal and in fact had modified the application. Little good faith has been shown on the part of the applicant in filing the appeal.

The grounds of the appeal are largely limited to the application not being decided within the extended timeframe. Under the circumstances, the appeal should be defended. The appeal is based on a deemed refusal and as a consequence, it is necessary to prepare grounds on which the appeal is to be defended. A further report will be brought before Council on this aspect. In addition, it is not clear from the appeal and the application, whether the appellant is of the view that the appeal relates to the original application or that amended in July, 1996 which remains without a Plan of Development. Clarification of these aspects will be necessary before determining the grounds on which the appeal will be defended.”

- [122] I make it clear that if there were any “rights and wrongs” issues arising from the parties’ conduct over the years in this or other aspects, judgments about them would have no bearing whatsoever on resolution of the issues of highest and best use of the land. The point, however, is that coming into force of the 1997 Strategic Plan appears not to have had the overnight effect of restricting development possibilities. The Report records (and Mr Buckley’s letter tends to corroborate) that discussions with the applicant about amending the proposal began around May in 1995 after the initial assessment by staff, consultants and Government departments.
- [123] The Council’s amenability to development in accordance with the consent order would seem to me to be a more accurate indicator of how things stood between the relevant date and the date of the order as regards enforcement of the 1997 Strategic Plan than the assessment two years later of a different application in Exhibit 178, by which the appellant sets great store. What was approved in relation to R527 is sufficiently indicated by the tables of development parameters incorporated in the court’s order:

“

(Combined Precincts 1 and 2 and Precinct 3)

Parameter	Required Standard
Population Density	1204 p
Building Height (storeys)	4
Building Height (metres from ground level)	15 metres
Maximum Site Cover Per Precinct	40%
Gross Floor Area	61,240m ²
Plot Ratio Per Allotment	1
Building Setbacks	In accordance with the Setback Plan and with the performance standards stated in this part.
Minimum Landscape Open Space (Square metres)	Proposed population in persons multiplied by 18.

The calculations for maximum site cover and plot ratio and minimum landscaped open space shall be based on Part C and D of combined Precincts 1 and 2 and Part A of Precinct 3 and shall not include Parts A or B of combined Precincts 1 and 2 or Part B of Precinct 3.

(Combined Precincts 5 and 6)

Parameter	Required Standard
Population Density	763 p
Building Height (storeys)	3
Building Height (metres from ground level)	12 metres

Maximum Site Cover Per Precinct	40%
Gross Floor Area	38,760m ²
Plot Ratio Per Allotment	1.1
Building Setbacks	In accordance with the Setback Plan and with the performance standards stated in this part.
Minimum Landscape Open Space (Square metres)	Proposed population in persons multiplied by 18.

The minimum site cover, plot ratio and minimum landscaped open space shall be based on the area of Part B of precinct 6 and not included Part A.

For the **Conservation Land** no parameters are specified.”

Precinct 3 is the remaining part of Lot 2 south of Serenity Close, combined precincts 1 and 2 are essentially Area A (or the balance of the RHD zoned land); precincts 5 and 6 are the southern part of Area B.

[124] The court has been deluged with material in this proceeding including in relation to the Noosa Sanctuary approval 899 pages in Exhibit 150 alone, and in Exhibits 134 and 135 alone more than 1,500 pages in relation to R221 and R527, which one or both of the parties presumably expected would be read. The preliminary town planning assessment of R527 (carried out by Lee Consulting Services Pty Ltd) (p 843) is of 5 June 1995. It identifies conflict with the 1988 Strategic Plan and with the schedule to the planning scheme and opined (see p 861) it was “clear that the development proposal will have significant detrimental environmental impacts, particularly on the environmental values of the freshwater wetlands portion of the site adjacent to Weyba Creek.”

[125] The report of 9 October 1989 is important because in my reading it assesses the amended development application separately under both old and new strategic plans and concludes, as do I in this appeal, that there was little practical difference at the end of the day between the assessments. This can be demonstrated by considering the following extracts:

At p 5 (1067) after recording the site’s locality and zoning:

“2.3 1988 Strategic Plan

Figure 4 illustrates the designations that apply to the locality under the 1988 Strategic Plan. The site was included in Urban Area and Public & Private Open Space preferred dominant land use designations. A tourist facility growth area symbol was also overlaying the site. Generally these designations acknowledged that the site would in part be used for residential purposes and for associated tourist accommodation and ancillary facilities. The site would be expected to be the subject of detailed investigations to

determine appropriate locations and forms of land use. The 1988 Strategic Plan contains objectives that strongly promoted the protection of environmentally sensitive lands.

2.4 1997 Strategic Plan

The current Strategic Plan has a much more refined approach for determination of the preferred future land uses. Much more research was undertaken to support the final designations that apply to land. **Figure 5** illustrates the preferred dominant land uses designations in the locality. The site has three designations of Attached and Semi Detached Housing, Detached Housing and Open Space – Conservation & Waterway Protection.

The preferred Open Space area has been more closely refined but particularly reflects vegetation types and the findings of the flood study. The Detached Housing area indicates a preference for a low density over that part of the site. The Semi Detached and Attached Residential designation reflects the previous commitments to this site under the Residential High Density Zone and the developments that have commenced on the site.”

At p 16 (1078) noting changes to the proposal:

“... Overall, the proposal is for a reduced scale of development, than that originally applied for. Comparisons between the advertised and current proposals also need to be undertaken in the context of amendments to the Schedule to the Planning Scheme gazetted in December 1997. The effect of those changes was to reduce the scale of development that could be achieved under the Residential Medium Density and Residential High Density Zones. This means that although the reductions of the current proposal, when measured against the advertised application are significant, that significance is decreased proportional to the reduction in development now allowable under those two zones.

7.2 Supporting Studies

The appellant has commissioned additional studies to examine fauna, flora, water quality, contour survey information and traffic. These studies have been carried out by well qualified consultants and the extent and detail of the work undertaken has been adequate for planning for the site. The EIS that accompanied the application was not sufficiently comprehensive to enable detailed assessment of the site to be undertaken. ...

...

7.3 Proposed Zones

This proposal now intends the site to be included in a Special Residential Zone and an Open Space Zone. ...”

At p 19 (1082) apropos the problem precinct:

“7.5.4 Precinct 7

As outlined previously, this precinct is in the lower part of the site, over peat constrained lands. Between 80 to 100 units may be anticipated in this area. Although development may be undertaken in a manner that does not create acid sulphate conditions, nevertheless there would need to be very contrived arrangements with most of the development and access situated on piles. Some form of decked access with water and sewerage reticulation being attached to that access is a likely prospect. This is certainly not a preferred area for development and staff are reluctant to recommend its inclusion in any zoning arrangements. However, the appellant has persisted with the area being nominated for development. Reference has also been made to development approved over adjoining land to the south, which is under similar conditions. The land is not subject to flooding and is a minimum of 80 metres to Weyba Creek.”

At p 29 (1092) the Strategic Plans are separately considered as the basis for:

“The original application lodged by the appellant, would not have been supported by staff. Concerns were held in respect of the golf course and lake construction and compliances with the 1988 Strategic Plan. In addition, the application proposed a 5 storey hotel building, which was contrary to Council’s Schedule requirements for the height of buildings. However, the modified proposal deletes those primary aspects of concern. It also proposes a substantial reduction in popularity density and gross floor area, when measured against the original Scheme. ...

Staff have ongoing concerns with development proposed in Precinct 7, being the lower peat affected part of the site. Although the likelihood of acid sulphate generation seems to be remote, the developer must undertake quite contrived arrangements to ensure that the land is not substantially excavated. This is not a preferred arrangement, but two factors are supportive of the appellants position. First, Council has approved development in a similar location over land to the south in a decision under two years ago. Secondly, the appellant is prepared to submit to a requirement for the Department of Environment & Heritage and Council to approve of an EMP as a necessary prerequisite to develop proceeding. With these provisions, staff are not opposing development in Precinct 7.

With the exception of Precinct 7, staff conclude that the remainder of the proposal conforms with the 1988 Strategic Plan. ...

The 1997 Strategic Plan proposed different outcomes for the site. The Residential High Density Zone is acknowledged as being an area for multiple residential development. However, Precincts 4, 5 and 6 are indicated as Detached Housing. Precinct 7 and the balance of the site are indicated as open space. The Detached Housing designation envisages a lesser scale of development for that land than under the

current proposal. The Strategic Plan though would acknowledge approximately 70 houses being erected and these may also have a substantial floor area. In total, the current proposal is not dissimilar from the outcomes envisaged for the site by the 1997 Strategic Plan with two distinctions. Firstly, Precinct 7 is not envisaged for development. Secondly, the shift in development yield from the northern part to the southern part changes the nominated outcome, but not necessarily to the detriment of the local community.

Building heights in Precinct 4, which may rise to 3 storeys at 12 metres, may give some potential for concern by existing property owners on the eastern side of Banksia Avenue. In this respect the amended proposal is no different to what was advertised, which proposed the area to be a Residential Medium Density Zone. Sections have been provided by the appellant, which suggest there should not be an unreasonable intrusion or overshadowing of properties to the east. ...

...

The requirement for a resort hotel development to be undertaken in Precinct 6 as a compulsory part of the project is viewed as a preferred development result to detached housing. The provision of additional tourist accommodation and the economic benefits that flow from such a development are supported.

The proposed dedication of more than 40% of the site for open space purposes, including part of the lower land, is supported. The development of a public jetty, also lends support to the current proposal.

Finally, staff conclude that the amended proposal is capable of support, ...”

[126] To the extent that internal Council planning reports carry weight in an appeal such as this, this Council assessment of R527 shows, among other things, that:

- the proposal conflicted with the 1988 strategic plan; and
- despite the detached housing PDLU designation under the 1997 strategic plan, multiple residential development that would incorporate a resort hotel was acceptable in Area B.

Council's assessment of development applications for site made after relevant date

R22423: Exhibit 178

- [127] The appellant relies on Exhibit 178, the Council's 111 page Environment & Planning Portfolio Report of 26 June 2002 regarding Development Application 22423 lodged in respect of the site on 24 September 2001 as confirming what it says was the dramatic limiting effect on development potential of the 1997 strategic plan coming into effect. It says the assessment is what a prudent purchaser would have anticipated come the relevant date, rather than the assessments in the following year and afterwards of development applications by the appellant or associates in Exhibits 221, 222 and 223 relied on by the Council as allegedly showing the 1997 Strategic Plan had limited or benign effects which the purchaser would reasonably have anticipated at the relevant date. The recommendation of refusal was based significantly (but not solely) on that strategic plan. The focus was on section 13 Strategic Plan which covers nine pages of the Report. Of the other standards against which assessment occurred, section 14 Schedule to the Planning Scheme covers four pages (dealing with existing zonings); the "Court Order" (being the consent order made in 5340 of 1997 by Skoien S DCJ on 22 November 2000 finally disposing of R527 by approving a modified application for rezoning) crops up dozens of times from page 38 to the end of the report.
- [128] The Court Order may be found in Exhibit 134 at pages 1411 and following. It approved rezoning of Lot 2 on RP801918 from the existing zonings (future urban, non-urban, open space and residential high density) to the Special Facilities (Health and Resort Hotel Complex, incorporating Community, Entertainment and Sport and Recreation Facilities; Residential High Density and Open Space in accordance with the Setters Cove plan of development) zone. The whole was premised on a Land Conservation Agreement that was signed by the Council and the developer on 21 November 2000; the bulk of the site (23.508 hectares) designated conservation land was to go to the Open Space Zone if matters proceeded. The Plan of Development required to inform a Special Facilities Zoning it was said (at page 33 (1446)) "does not contain a plan depicting precisely the proposed development but rather contains particular uses which may be carried out and relevant development parameters." Combined precincts 1, 2 and 3 roughly correspond with Area A and precincts 5 and 6 together with Area B. Except for the conservation land in respect of which development might follow a code assessment process, all development was to follow an impact assessment process, many types of development being listed including accommodation buildings, group housing and multiple dwellings. Only precinct 6 envisaged "hotel and resort facilities, accommodation, function rooms, convention centre and reception areas"; the development parameters included limits on development through minimum square metres of landscaped open space (proposed population in persons multiplied by 18) and maximum site cover (40%) and other limits: in combined precincts 1 and 2 and precinct 3 population density was limited to 1204 persons along with a four storey (15 metres from ground level) height restriction and gross floor area limit of 62, 240m². In combined precincts 5 and 6 those numbers were 763 persons, three storeys, 12 metres and 38,760m².

Other parameters became familiar during the appeal, such as the “length of wall” and “number of units in a plane”. It is unsurprising that so much of the Report assesses DA22423 against the “CO”.

- [129] At first blush, the focus on the new strategic plan in this Report seems unusually intensive. The discussion begins by noting that the proposed development extends some 2.432 hectares beyond the SD & AR designation which it is said “generally conforms with the contours of the site that would allow for development” into the OSC&WP designation. Within the SD & AR designation, development was proposed on both flat land (calling up s 19.2.1.4) and on sloping land, with retaining walls up to six metres in height (calling up s 19.2.1.3). There are two pages of columns in which the left hand column sets out one of the “dot points” from the collections of them in the sections identified, a couple of which are common. Only one is overlooked (the fourth in 19.2.1.3). The middle column contains lengthy, typically unsupportive assessments of compliance and the right hand column a blunt “not complying” at all nine opportunities. The comments go beyond the strategic plan, for example in noting in the first that “a majority of the buildings on the site will be five storeys and not four storeys as required by the CO”; in a number the CO is not named but is apparently referred to at the source of “development parameters” (units in its single plane, etc). I see no particular significance in the material just discussed which simply amplifies the exercise of determining to what extent the key objective of the designation, namely to “provide urban semi-detached and attached residential areas with high levels of amenity consistent with the maintenance of the character of the Noosa Heads/Noosaville locality and the particular part of the locality in which the area is situated” (see 19.1.2). 19.2.1.1 and 19.2.1.2 identify the two broad categories of land dealt with in 19.2.1.3 and 19.2.1.4, which are said to indicate “initially, key features which will assist in maintaining the character of the locality”. As to building height, Exhibit 233 is an extract from a September 2001 town planning assessment report of Mr McKerrell’s firm arguing that the exceedence is essentially technical, based on the extent to which basement car parks extend above ground level and driveway arrangements.¹⁹ But this feature affects all but a couple of the 15 apartment buildings illustrated in Area A, essentially, occurring at the external perimeter, so would thus visibly influence “bulk”. There is much to be said for Mr Gibson’s observation that this development application has an appearance of being “designed to fail”.

- [130] The discussion goes on to acknowledge key objective 19.2.4 “protect [reproduced as ‘provide’] sites for [...] resort developments which focus on the Shire’s natural low key outdoor appeal and cultural values.” The listing of the site as a resort development site to be protected is acknowledged and its capacity to “sustain a significant development”. The complications the report alludes to are that environmental values should not be compromised, which it suggests happens almost by definition to the extent that the development intrudes into the OSC&WP designation. In the end, it does not seem to me that this section goes beyond consideration of the 19.2.1 objective, which I think is no more restrictive than the

¹⁹

The number of driveways consideration may have become irrelevant only because of a change in December 1997 (ie after the relevant date) to the planning scheme definition of “Building height in storeys”; the proposed amendment as advertised in late August 1997 may be found in exhibits 24 at page 151; the 1990 version is in exhibit 11: Queensland Government Gazette 111 (15 December 1990) page 1729.

1988 strategic plan provisions; in addition to that, of course, reliance is placed on the expansion in 1997 of what became OSC&WP at the expense of “Urban Area”.

- [131] In 13.3 the report deals with the OSC&WP designation. Unsurprisingly, the report interprets the strategic plan as calling for maintenance of environmental values of the land to the exclusion of development (whether there are environmental values being the issue). Guarded satisfaction with the Settlers Cove Land Conservation Agreement is indicated and the suggestion made that conditions be imposed on development as necessary to protect environmental values. The opportunity is taken to compose another table with “not complying” dominating the right hand column by a reference to the strategic principles underlying the shire strategic vision, in particular the first two dot points in 25.1.1.3 about integration of the built environment with the natural landform and landscape and low scale density and intensity of development, which fill out the “vision” provision in 24.3 for “built environments which fit into and do not dominate the natural environment” (not mentioned in the Report). It is recorded that there is noncompliance with 25.2.3 the “environment principle” of preserving vegetation or habitat in a natural state with a view to preventing undesirable impacts such as loss of flora, or water quality deterioration and soil erosion. For good measure, in this table, on the basis of information provided with the application being inadequately presented, the “precautionary approach” is adopted.
- [132] Five more instances of noncompliance with development principles are set out (26.1, 26.2, 26.3, 26.5 and 26.6), the pollution prevention principle in 26.4 being omitted, likewise the cultural heritage, community services & infrastructure and transport ones. Those invoked are landform integration, landscape integration, flora & fauna protection, physical constraint and built form & development form. Another half dozen areas of noncompliance are identified by reference to the Strategic Aims under the heading of Environmental Management. I will set out the last table of noncompliance with the 1997 strategic plan as a way of giving the flavour of the document:

“

Development Principle	Comment	Compliance
27.4.3.1 – Protect fauna, flora and habitat and ensure that development does not jeopardise the long-term diversity of species and habitats. Separate development from the land or waterways having significant environmental values by land buffers of prescribed standards. Use best form management practices to achieve long-term viability.	Development will result in the short to medium loss of koala and black cockatoo habitat. Development is buffered from waterways in part however conflicts with the natural drainage channel and low lying areas of the site, which may jeopardise the Wallum Froglet. Refer to sections 19 & 20.	Not Complying
27.4.3.3 Ensure that development does not diminish the quality of water in ground water systems, waterways or along the coast.	The maintenance of water quality for ground water and the Noosa River cannot be assured.	Not Complying
27.4.3.11 Recognise the vulnerability and visual amenity attributes of habitat on steep lands and ensure the maintenance of	The impact on visual amenity will be compromised from Weyba Road and the Noosa Sound in particular if all vegetation is lost to development. Further the	Not Complying

habitat in such locations, particularly in areas which are visible from the major roads.	development on the edge of the escarpment will invoke construction that cannot ensure retention of the integrity of the natural land slope on that escarpment.	
27.4.3.15 Ensure that the key landform and landscape characteristics of each locality are maintained and that those characteristics are not dominated by development.	It is acknowledged that the Conservation Land will largely remain intact however there is some doubt about the fringe areas of the escarpment given the extent of cut and filling proposed. The land on the Retained Site will be substantially altered with significant vegetation lost.	Not Complying
27.4.3.16 Protect views and vistas which characterise particular localities in the Shire, irrespective of the scale or extent of influence of such views and vistas.	The removal of all significant vegetation, buildings will be clearly seen from Noosa Sound and in particular Munna Pt Bridge. Further, removal all of the vegetation will be clearly seen from Weyba Road at least until the significant landscaping proposed is established. Refer to section 18.3.	Not Complying
27.4.3.20 Ensure that vistas from the road are not dominated by the development.	The removal of all vegetation from hotel site, is likely result in adverse affects (sic) on the visual amenity from Noosa Drive. It is acknowledged that the applicant will attempt to provide suitable screening however the existing vista cannot be assured.	Not Complying

”

It will be obvious that there is a lot of doubling up given that the strategic plan deals with particular notions in multiple places.

[133] The report had earlier dealt with the part of the site given a detached housing designation. The proposal (see 5.1 and 5.2) was for a hotel comprising 214 accommodation units and 122 dwelling units being dual key comprising one dwelling unit and one accommodation unit in the detached housing designation. The report in 13.2 does no more than note inconsistency between the proposal and the PDLU designation, presumably acknowledging the CO's envisaging a hotel there.

[134] Assuming that Exhibit 178 does indicate the way in which the assessment manager would treat a development application made after the relevant date, I do not think there is anything like a “paradigm shift” associated with the 1997 planning scheme coming in. The executive summary in the Report accurately represents the thrust of it in indicating multiple bases for the unfavourable recommendation:

“The assessment of the application against the Court Order found that the development proposal does not comply with a number of conditions of approval particularly those protecting the environmental values of the site including habitat for koala, glossy black cockatoo and the Wallum Froglet, water quality, vegetation protection, the number of car parks required, the structures allowed in the Conservation Land and in particular the protected areas of the site.

The assessment also identified that the development conflicts with the Semi-detached and Attached Residential, Detached Housing and the Open Space Conservation and Waterway Protection designations. Further the development conflicts with a number of strategic principles, development principles and key strategic aims.

The assessment also identified that the proposal conflicts with a number of provisions of the Residential High Density and the intent of the Future Urban, Open Space and Non-Urban zones.

...

The development proposal attracted a number of submissions in objection to it, which raise valid planning grounds which are supported.

In summary the proposal represents over development of the site under the Strategic Plan, Schedule to the Planning Scheme and the Court Order. This report details that substantial development can occur at both locations on site however the scale of development must be respect the site constraints.”

- [135] Filling out the above, the report deals with the zoning arrangements, which of course, for all presently relevant purposes, depend on the current zoning. It was acknowledged that some weight needed to be given to the rezoning approval in Senior Judge Skoien’s order. However, given that the rezoning approval, in a way reminiscent of that in R221, which never went anywhere, was in limbo, because the rezoning had not yet occurred, assessment of the application still needed to include assessment against current land zonings. For the residential high density zone, the Report took the view that the only developable land, for practical reasons, was that within the SD & AR designation, which was used for purposes of applying the population density cap of 250 persons per hectare, leading to preparation of the following table and pertinent following comments:

Parameter	Planning Scheme	Proposal	Compliance
Population Density (persons)	1020	1208	Not Complying
Gross Floor Area (m ²)	40,800	59,351	Not Complying
Minimum Landscaped Open Space (m ²)	14,280	32,000	Complying

It is noted under the planning scheme the parameters considered above related to residential uses, such as Multiple Dwellings. Under Table 5.3 of the planning scheme the maximum GFA allowed in the Residential High Density zone is 13,600m². Further the parameters of GFA, population density and GFA are not able to be relaxed under section 5.4.2 of the planning scheme. This means that the development cannot be approved with this amount of GFA. This

point has been recently been decided by the Court in Seymour CBD Pty Ltd versus Noosa Shire Council.

Given the above it is evident that the site is an overdevelopment under the current zoning, having an excess population density and gross floor area. It is noted that the maximum parameters apply to residential uses only. With regard to the other non-residential uses proposed on site the GFA will further increase by 6.621m².

Reference is made however to the approach adopted under section 4 – Special Requirements for Land included within the Residential High Density Zone with Frontage to Hastings Street where the maximum GFA includes residential and other uses. Given the nature of the development proposed it might be appropriate to adopt a similar approach for the Resort site, thereby allowing at total GFA of 40,800m² for all uses on the site.”

- [136] Table 5.3.is the one which has wreaked havoc with the architects’ work. What GFA could be achieved by reconfiguration into smaller lots to take advantage of the 13,600m² possibility as many times as possible remains totally mysterious. In my opinion, the Table 5.3. boded to defeat the development application on its own. As to the future urban zoned land, the report noted that uses applied for that were not consistent with the intent of the zone included accommodation buildings, multiple dwellings, childcare centre, hotel, indoor entertainment, restaurants and shops. It was acknowledged that the Court Order (which under normal circumstances would have formed part of the planning scheme) provided support for those uses or some of them which the 1997 strategic plan did not. It was noted that no development was proposed in the non urban zone, but concern was expressed that certain apartment buildings proposed within the resort were proposed in close proximity (“extremely close to the edge of the escarpment”) and could not be supported. There was no support for the inclusion in the development site of approximately 1.77 hectares included in the open space zone. The report says in 14.4 that “the area of the site having this zoning is designated OSC&WP and therefore is to be protected from development.”²⁰

- [137] In following sections of the report, population density for the resort and for the hotel were found to comply with the POD (Plan of Development in the CO). Site cover of the hotel component was assessed as exceeding the 40% site cover allowed by the POD by 4%, rendering refusal of that part of the application mandatory “given that under the CO no dispensation can be given”. GFA²¹ was determined to exceed non-relaxable maxima in the CO. Comments followed on the architectural design of proposed buildings, some favourable, some unfavourable. Heights of many buildings were determined to be excessive against CO standards in number of storeys (having regard to the assessment of “basement” car parks) and heights in

²⁰ One of the apparent anomalies in the 1997 mapping is the inclusion in SD & AR of an area zoned open space. It would not be correct to say that all open space zoned land became OSC & WP. I have been unable - to work out what area the Report refers to. The appellant’s case I understand to be that the zoning prevails – to preclude development.

²¹ It should be noted that the Council’s and the developer’s estimates of GFA rarely coincide; in some cases the Council’s were higher, in others the developer’s.

metres. The report essentially did not favour developer requests for dispensations. Setbacks of “buildings” failed to comply with the CO – on the resort site only for tennis courts and the beach volley ball court. Some dispensations were recommended.

- [138] I do not propose to go through any of the following assessment exercises against the CO, generally to do with environmental matters. The inadequacy of information about the environment is noted in various places, such as 19.1 and 19.2.2 – to the extent that Mr Gibson is probably correct that refusal could have been justified on the basis of this alone it is entirely unsurprising that some reliance is placed on the precautionary principle. The report in s 38 and 39 lamented that the CO did not require energy efficient design/renewable energy or “smart housing”. It urged the developer to consider such aspects.

- [139] The final recommendation was as follows:

“44. RECOMMENDATION

With regard to application 22423 DA (Settlers Cove Development) for a Material Change of Use and Preliminary Approval for Building and Operational Works for a resort complex comprising 360 multiple dwellings with additional uses including central facilities, sport and recreation facilities, day spa and hydro spa and ancillary uses and a resort hotel comprising 214 hotel accommodation units and 120 multiple dwelling units with additional uses including sports and fitness centre, central facilities, wedding chapel, day spa and hydro spa and ancillary uses, Council refuse the application for the following reasons:-

1. The application proposes a resort development of five (5) storeys in the Residential High Density zone which is in conflict with the intent of that zone.
2. The application proposes a hotel development in the Future Urban zone, which is in conflict with the intent of that zone.
3. The application proposes uses in the Residential High Density zone, which are not permissible in that zone under the table of zones.
4. The application proposes uses in the Residential High Density zone, which are not permissible in that zone under the table of zones.
5. The application offends mandatory requirements of the Residential High Density zone which the Council does not have power to relax.
6. The proposal is in conflict with the Strategic Plan. In particular the development proposed:-
 - (i) is in conflict with Clauses 19.2.1.3 & 19.2.1.4 of the Semi Detached and Attached Residential preferred dominant land use designation, because:
 - i. it is not low rise and does not respect the scale of vegetation and the scale of other development in the locality;

- ii. it does not integrate with the landform or landscape;
 - iii. it has harsh skylines;
 - iv. it does not respect the public spaces about the site;
 - v. it does not promote the concept of small separate buildings.
- (ii) will compromise the environmental values of the site and is in conflict with Key Objective 19.2.4;
- (iii) in respect of the hotel component is not consistent with the Attached Housing PDLU designation;
- (iv) is in conflict with Clause 19.7.5.3 of the Strategic Plan as it will compromise the environmental values of that part of the site contained in the Open Space Conservation and Waterway Protection PDLU designation;
- (v) is in conflict with Strategic Principle 25.1.1.3 and Development Principals (sic) 26.1 and 26.2 as it does not integrate the built environment with the natural landform and landscape;
- (vi) is in conflict with Strategic Principal 25.2.3 and Development Principal 26.3 as it will result in the destruction of flora and fauna habitats and the deterioration of water quality;
- (vii) is in conflict with Strategic Principal 25.2.3 and Development Principal 26.3 as it will result in the destruction of flora and fauna habitats and the deterioration of water quality;
- (viii) will result in the removal of all vegetation from the retained site and offends the precautionary approach to land change as required by Strategic Principal 25.2.7;
- (ix) is in conflict with Strategic Aim 27.4.3.11 in that:-
 - i. Visual amenity will be compromised from important vantage points such as Weyba Road and Noosa Sound because of the destruction of vegetation and;
 - ii. The development proposed on the edge of the escarpment will endanger the retention of the natural land slope.
- 7. Building height in storeys and metres is excessive and will cause the development to be visually obtrusive with unacceptable impacts upon the amenity of the area.
- 8. The proposal represents an overdevelopment of the site and will result in dominance of the built form.
- 9. The character of the proposed buildings comprising the development is inconsistent with the locality and inappropriate.
- 10. In terms of the design of buildings proposed, length of wall, lack of separation of buildings and number of residential

units in one plane will provide a visually insensitive outcome.

11. In many respects the proposal is inconsistent and in conflict with the Court ordered rezoning approval and plan of development. In particular, both resort and hotel components exceed mandatory development parameters imposed under the Court Order.
12. The proposed development substantially exceeds the level of development proposed by the Court Order and the approved plan of development.
13. The provision for carparking is insufficient which will have an adverse impact on the amenity of local residential areas.
14. The scale of the proposal is excessive which will result in adverse traffic impacts.
15. Inadequate provision has been made for service vehicle standing areas and manoeuvring areas and the underground vehicle circulation system would result in unacceptable driver behaviour resulting in a diminishment of amenity for residents of the site.
16. The removal of all vegetation from the site will result in a loss of habitat of the koala and the glossy black cockatoo.
17. The proposal will adversely affect ground water and the water quality of Noosa Inlet, which may result in the local extinction of the Wallum Froglet.
18. The proposal will result in significant filling of a natural drainage swale that will adversely affect the hydrological regime of the adjoining wetlands.
19. The proposal requires excessive earthworks, which will result in significant alteration to the existing land form and loss of vegetation.
20. The proposal will adversely impact upon the amenity of residents in Drive Noosa and Banksia Avenue due to the loss of all vegetation on the developable part of the site and the loss of significant vegetation in the road reserve.
21. A substantial number of individuals lodged submissions citing valid grounds of objection to the proposal.”

[140] In my opinion, it is not possible to argue that the 1997 strategic plan, had it stood alone, necessitated the recommendation; the outcome would have been identical disregarding paragraph 6 entirely and if no reference had been made to the strategic plan at all. Further, the 1988 strategic plan contains ample chapter and verse to support the substance of the reasons given for refusal in any event. had it been applicable.

Successful development applications for the site from December 2002

[141] The real effect of the new strategic plan, which the Council says is what would have been anticipated at its inception by a properly advised potential purchaser who read

it carefully, was tested in the next development application, 23131 DA submitted by Ryter Planning in December 2002. It was followed by others presented and assessed in similar vein. The substantial difference is that development proposed in what came to be called the “shrinkage area”, being that part of the RHD zoned land now designated OS-C&WP was approved. The Ryter Planning report relative to lot 3 SP1004641 (Elandra, which has been constructed) describes the particular proposal’s relationship with the contemporaneous one for reconfiguration of the much larger lot 4 area zoned RHD into eight additional allotments for future apartment buildings and a large park: para 1.9. Apropos the 1997 strategic plan, the Ryter Planning report (part of Exhibit 221) states:

“3.2 The subject land is situated partly within the Semi-Detached and Attached Residential preferred dominant land use designation ‘S-D and AR PDLU’), and partly within the Open Space-Conservation and Waterways Protection (‘OS-C & WP PDLU’).

3.3 The delineation between these PDLU designations appears to coincide with the extent of the Residential High Density and Non-Urban zonings over the land.

3.4 Objective 19.2.1 relevant to the S-D & AR PDLU is as follows:

‘19.2.1 Objective: Provide urban semi-detached and attached residential areas with high levels of amenity consistent with the maintenance of the character of the Noosa Heads/Noosaville locality and the particular part of the locality in which the area is situated.’

3.5 The proposal is entirely consistent with the development reasonably expected in the Residential High Density zone, and that which has occurred, and is proposed in the immediate locality. It follows that the proposal is consistent with the relevant Strategic Plan objective.

3.6 Given that no development is proposed within the Non-Urban zoned part of the subject, which coincides with the OS-C & WP PDLU designation, the proposal is consistent with the relevant objectives and implementation criteria relevant to that PDLU.

3.7 I note ... Council’s refusal of my client’s most recent resort application over Lot 4 ...

...

3.9 The subject land, and the balance of Lot 4 on SP 100064 have been the subject of extensive environmental investigations. The design of the buildings, the extensive

vegetation to be retained, and the landscaping proposed by Anembo Consultants, together with the implementation of the recommendations of all of the supporting environmental and engineering reports, will ensure that the development respects the environmental and visual attributes of the site.”

- [142] Paragraph 3.3 seems palpably wrong on the face of the mapping. While on the evidence it is absolutely impossible to locate the delineation referred to cadastrally, there is no gainsaying that there is a substantial “shrinkage area” having boundaries that cannot be determined. That sundry persons, including Council officers, have over the years felt comfortable about estimating the approximate areas within PDLU designations does not assist in identifying the location of the boundaries. The “error”, if it truly be one, repeated in other Ryter Planning reports, including that for lot 4, was replicated in Council assessment reports and apparently more egregiously, to proclaim “no works proposed in the area designated [OS-C&WP]”. Mr Ryter had made that assertion in respect of such terrain that shared RHD zoning, more accurately was not zoned Non-urban; he is really saying, accurately, that the zoning supports the application, and in terms that there is no inconsistency with the implementation criteria. On the other hand, his statement is capable of meaning that OS-C&WP designation coincides with the Non-urban zoning, which was not the case at all. A reader who was not careful and astute may have fallen into the trap of responding, as the Council officers repeatedly did – or may have done (we simply do not know). Their assessment under the 1997 strategic plan, taking that for Lot 4 as typical, commenced:

“2 ASSESSMENT

2.1 STRATEGIC PLAN

The site is included in the Noosa Heads/Noosaville Locality and is designated Semi-Detached and Attached Residential and Open Space Conservation & Waterway Protection under the Strategic Plan. These designations generally correspond with the site’s zoning with no works proposed in the area designated Open Space Conservation & Waterway Protection. The Semi-Detached and Attached designation seeks to “*provide urban semi-detached and attached residential areas with high levels of amenity consistent with the maintenance of the character of the Noosa Heads/Noosaville locality and the particular part of the locality in which the area is situated*”.

In this regard the proposal meets the key building features of the area as detailed below:

Are low rise and which respect the scale of other development in the particular part of the locality.

The proposed development does not exceed the maximum building height permitted in the Residential High Density zone and is consistent with multiple dwellings in the street.”

- [143] The last observation describes a clear point of distinction from R22423; there were others, such as GFA coinciding with or being conditioned to coincide with planning scheme caps (population densities fell far short, in light of the election to construct fewer, and larger units than might have been anticipated (and characterised Mr McKerrell designs). Further, environmental assessments were favourable, e.g. from the same report:

“The proposal is consistent with the Strategic Plan objectives for the Open Space – Conservation & Waterway Protection designation and will protect the environmental values of the land adjacent the Noosa inlet, which has been addressed in the development approval conditions for the lot reconfiguration.”

The predecessor report regarding Lot 3 had proposed:

“To ensure that the environmental values of the site, the surrounding land and Noosa Inlet are not compromised, it is suggested that a number of conditions be imposed to ensure that vegetation on the escarpment is ecologically restored and maintained by way of an environmental covenant. The recommended conditions are consistent with those required with the recent lot reconfiguration approval including management plans to address ecological restoration, fire management and stormwater.”

The Council did not assert any coincidence of boundaries, merely a general correspondence.

- [144] The appellant’s submission regarding the approvals from 2003 and following (which one might have thought predictable throughout 1997), at least in so far as continuation of the building line along the Noosa Inlet established by Macquarie Lodge and Petrie Mansions is concerned, began:

3. The More Recent Approvals

346. The Council tendered documents relating to the development approvals granted in Serenity Close which are set out in Exhibits 220-223. Those approvals demonstrate that some 6 years after the relevant date, Council did approve a significant amount of development which we now know is outside of the Residential High Density zone within the Open Space – Conservation and Water PDLU. There appear to be two reasons as to why this was able to occur:

- (a) firstly, the Council appeared wrongly to accept – without question – that the PDLU and zoning boundaries matched; and
- (b) secondly, at the initial reconfiguration stage the same consultant engaged by the Council in the R22423 application inexplicably chose to “*redefine*” or “*refine*” the Strategic Plan boundary informally, but which the Council chose to accept.

347. These matters would clearly not have been within the contemplation of the prudent purchaser when trying to determine the price to pay for the subject site in the “*after*” case.
348. The prospect of the Council erring with respect to the respective extent of its zones and PDLUs or agreeing to somehow, in a defacto way, was so extremely low that no prudent purchaser would factor them in when determining the price to pay “*after*” the commencement of the 97 SP.
349. That is not to say that a prudent purchaser would not seek to lodge development applications over these areas, but they would not pay for the subject site, on a cash unconditional basis by giving value to those areas as developable tracts of land.
350. The fact of Council’s consultant “*redrawing*” the 97 SP PDLU boundary and the Council in effect acquiescing, is truly remarkable.”

The foregoing cannot be accepted. The consultant did not proceed “*inexplicably*” at all, as will appear. The notion of boundaries “*redefined*” no doubt comes from the Council’s report of November 2003 dealing with the reconfiguration (or subdivision) of the site which underlay subsequent development. It is exhibit 223 and states in paragraph 9.1:

“The proposed RHDD development includes larger allotments in this area of the site, which extend to the edge of the natural watercourse at the toe of the escarpment boundary. While the proposed allotments extend over the steeper parts of the site, the development proposal is constrained by the OSC&WP designation on that part of the land having environmental value.

It is acknowledged in the Strategic Plan that the boundaries of the designations may be further redefined following more detailed analysis of the constraints of a site. In this instance, Council’s environmental consultant has undertaken an in-depth study of the site and provided her views with respect to the extent of development that may be acceptable with regard to satisfying the requirements of the Strategic Plan.

This consultant has provided a plan (refer **Attachment 11**), which shows a redefined boundary of the SD&AR designation. This map shows approximately a 40 m buffer from the edge of Noosa Inlet towards the south of the site and a 25 m buffer provided to the toe of the escarpment around the perimeter of the proposed RHDD. These buffer areas primarily provide for the retention of significant vegetation on the escarpment, which is adequate to ensure water quality is maintained and for a fauna corridor primarily for use by koala.

The area on the southern side of the SD&AR designation is completely included within the OSC&WP designation, this being the area that is low lying and forms a natural watercourse that flows to Noosa Inlet.

The more detailed site analysis has resulted in a larger area of this part of the site that could have the SD&AR designation. Any development however should generally not be allowed to extend beyond this redefined SD&AR boundary unless suitable ecological restoration works could be undertaken to ensure the environmental values of the site are not compromised. The relationship of the proposed RHDD, the extent of development and the redefined Strategic Plan boundaries are shown on **Attachment 12.**”

(It is convenient to note here a passage from paragraph 10.2 Residential High Density Zone which identifies a limitation that would always have qualified the development potential within the zone:

“A portion of some of the land that is included within the RHD zone has significant constraints and environmental value and therefore is not suitable for the development of buildings. These areas, which form a fauna corridor around the perimeter of the development beside Noosa Inlet and the escarpment edge, are to be protected by way of an environmental covenant.”)

I believe that any reference to “redefining” boundaries was unjustified, and erroneous. The consultant Mrs Anderson did not purport to “redefine” boundaries, but to “refine” them, as represented in Figure 5 in her report of October 2003, which forms part of Exhibit 223, at a page numbered 8567. It is entitled “refined” PDLU Boundaries, as is another version (at page 8714) featuring contours that may be the rationale or part of the rationale for the refinement. This is the officers’ “Attachment 11”. Attachment 12 is Mrs Anderson’s report in respect of the reconfiguration application 23118A (page 8531). It is necessary to reproduce only two “Introductions” at the beginning:

“1.0 INTRODUCTION

The Strategic Plan for Noosa Shire foreshadows that the subject land will be used for:

- Open Space-Conservation and Waterways Protection,
- Semi-detached and Attached Residential, and
- Detached Housing.

The boundaries of these preferred dominant land uses are shown on Figure 1.

By their very nature, the boundaries shown on the Strategic Plan map between the three Preferred Dominant Land Uses are of a generalized nature and therefore open to interpretation at a local scale. The Strategic Plan is, however, quite explicit in what it is trying to achieve and in providing advice on how the specific boundary should be determined.

The Strategic Plan states:

‘Further assessment of a site’s suitability for development envisaged by the Preferred Dominant Land Use designation will be necessary as part of any planning application.’ (page 10)

The process has not been undertaken by the Applicant.

However, it is necessary to undertake (sic) this process before the Development Application can be properly assessed.”

“2.1 INTRODUCTION

In order to properly assess the environmental aspects of this application, I have undertaken the required site-specific analysis to refine the Preferred Dominant Land Use Boundaries.

I have applied the rationale of the Strategic Plan to the particular circumstances of the locality taking into account:

1. the values of the subject land for conservation and waterways protection and the ecological processes that maintain these values;
2. the need to protect the koala corridor (and habitat) between Noosa National Park and the vegetation stands around Lake Weyba;
3. the need to protect Noosa River (which includes Noosa Sound), Weyba Creek and associated riparian (wetland) communities;
4. the need to protect the vegetated hills and dune systems which frame Noosa Inlet;
5. the need to protect other key environmental values, e.g. Glossy Black Cockatoo and Wallum Froglets. These two species are listed as Vulnerable in the *Nature Conservation (Wildlife) Regulation 1994*;
6. the need to buffer areas of high environmental value from the impacts of such development; and
7. the nature and extent of proposed Residential High Density development and Residential Single Dwelling development.

My assessment is based on environmental and other information provided by the Applicant and my own knowledge about the environmental values of the site and the ecological processes maintaining those values.”

The quotation from the strategic plan is from section 1.3 which offers five “dot points” to describe the contents of “a table for each designation”, the relevant one, qualified by the quotation, reading, in the earlier part:

“A brief outline of the strategic mapping process used to develop the Preferred Dominant Land Use or Other Designation, based on information including, but not limited to the references contained in the Planning Study, refer to Section 28. ...”

This is not the only express indication in the strategic plan that the PDLUs, in their boundaries, were intended to be flexible. 25.2.6 sets out one of the Environmental Principles included in the Strategic Principles in section 25:

“25.2.6 Information about land and resources is not static and increases over time. The information supporting the Strategic Plan is detailed, though by nature, the mapping products are broad. Development commitments under the Strategic Plan are made on the basis of this broad level of information. Significant new at improved information may result in the need to review development commitments made in this plan.”

“Development commitments” is not defined. I would expect the flexibility identified to extend to what might be seen as “commitments” against development as well as to commitments to allow it. The recognition that development applications could be made over OS-C&WP-designated land in 19.7.5.4 is noted elsewhere.

- [145] Both parties chose to venture into much later events to advance their views as to what the putative vendor and purchaser properly advised would have anticipated was acceptable development on the site come the relevant date. For the reasons indicated above, R22423 was not a fair test of the new strategic plan’s impact: it sought to exceed too many planning scheme caps, I would say provocatively. The later development applications did not. The approvals are some confirmation of what would have been expected of the planning scheme including the new strategic plan at the relevant date.

- [146] All-encompassing and comprehensive in its restrictiveness as the OS-C&WP designation was, seizing on unwanted impacts, however modest and however slow to eventuate, according to its very terms, the focus was on “environmental values” – not defined. Unless environmental values were there to protect, the PDLU restrictions had no relevance. In R22423, as one might expect in the absence of appropriate environmental information, the PDLU mapping effectively was relied on as “evidence of environmental value”; thus it was assumed there should be no building intruding into OS-C&WP, alternatively beyond SD&AR. The designations of the whole site (effectively) as warranting protection for environmental values in reports underlying the 1997 strategic plan is associated with mapping at an extraordinarily broad scale. Within months of exhibit 178 being produced, the appropriate investigations had been done to establish that there were in Area A no relevant environmental values, so that the approvals sought should be issued, with appropriate conditions. Essentially so much of Mr McKerrell’s before case as can be made good is also the after case.

[147] There is evidence that within the Council there was thinking along those lines when the 1997 strategic plan was being developed. Much attention was paid to exhibit 190, which shows the Council's response to the appellant's submissions seeking change, made through Mr Buckley, by Exhibit 188, his letter of 14 February 1997, against the background of R527 being currently before the Council, page 2 of which is:

“The objections would be overcome if:

1. The configuration of the ‘semi-detached and attached residential’ designation followed precisely the boundaries of the Residential High Density zoned land.
2. That the part of Lot 2 on RP801918 proposed for development for medium density development as per the rezoning application be shown as ‘semi-detached and attached residential’.
3. That the part of Lot 2 on RP801918 proposed for development for tourist accommodation be specifically referred to in the provisions of 18.2.4 (Draft Strategic Plan) which refers to resort developments in this part of the hire.

In addition to these outcomes, a fourth general outcome would overcome the objection if:

4. The Strategic Plan made provision for the recognition of large sites such as the combined area of both lots, would be best developed in an integrated manner, and accordingly a single designation, promoting site development flexibility would be a desirable outcome.

Basis for submission

Boundary Configuration

This is considered to be a relatively minor matter. As the Strategic Plan has a very definitive cadastral base and seeks to precisely establish boundaries for development, it would be consistent with those principles that the boundaries shown on the Strategic Plan map reflect the current zoning commitment on Lot 2 on RP889602. It is requested that the boundaries be modified to reflect the gazetted zoning and its relationship to the existing waterway to the sound and west of that zoned area.

Detached Housing Designation

The Council's intent expressed in the Strategic Plan acknowledging the likely change in focus for residential areas in this part of Noosa Heads, does not in itself suggest that it is inappropriate to identify

land for “semi-detached and attached housing” residential development.

Sound town planning principles would support the view that land strategically located to community services, such as those provided at Noosa Junction should be developed in a manner which maximises accessibility to those services for the greatest number of people.”

There are issues about changing a planning scheme to assist (or obstruct) a development application still under determination. Mr Buckley appears to have made his point three, assuming that the final 19.2.4 corresponds with the draft provisions he referred to; indeed, he did better, given that in my opinion the whole of the site is accorded recognition for potential tourist development. Exhibit 190, which it was common ground would have been information available to the vendor and potential purchaser is as follows:

“18.7.4 MATTERS RAISED IN THE SUBMISSION:

187.4.1 The Semi-Detached & Attached Residential designation that applies to the existing Residential High Density Zoned land, does not accurately reflect the zoning.

187.4.2 A Detached Housing designation has been applied to areas likely to be developed pursuant to a rezoning application in the Banksia Avenue frontage of the site. The site is strategically located in proximity to community services, such as those provided at Noosa Junction and should be developed in a manner which maximises accessibility to those services for the greatest number of people. The plan acknowledges conversation and waterway protection intents for the landscape of Weyba Creek and this provides an ideal opportunity for attached residential development to be conducted in densities which respect these qualities, but which respond to the strategic position of the site. This submission envisages the part of the resolution of the rezoning application would be the boundaries of the residential medium density area and conditions could be imposed which minimise the site disturbance and protect the residential amenity of areas nearby.

This submission also notes the Semi-Detached & Attached Residential designation for land to the north-east and south of the subject site.

187.4.3 The Strategic Plan does not recognise the potential of the site for tourist development which is the subject of the current rezoning application. The submission seeks the Strategic Plan to acknowledge this site as a resort development site under Section 18.2.4. The intent of the development, density and form of buildings are yet to be finally resolved as part of the rezoning process, but it would

be entirely consistent with planning principles to acknowledge the potential for the site for tourist purposes. Key tourist sites with key recreation values can be developed in accordance with the relevant tourism aims of the document and will assist the Shire's economy and provide employment for local residents.

- 187.4.4 The submission also seeks a single designation over the site that provides for an integrated tourist development. That designation could be supported by written provisions which acknowledge that such land is to be developed over time and will be subject to changing economic and community circumstances. This would also assist with flexibility in the development approaches and would be a desirable outcome.

187.5 TOWN PLANNING DEPARTMENT COMMENTS (SP):

- 187.5.1 The variation between the Strategic Plan designation for semi-detached and attached residential purposes, compared to the Residential High Density Zone, is very close. The differences relate to the western extremity of the zone, which in part intrudes into land adjacent to the Noosa Inlet, which should not be considered for high density development purposes. Apart from that section, the differences are relatively minor. It is therefore unlikely that the use rights associated with the Residential High Density Zone would be significantly disadvantaged by the designation.

- 187.5.2 The argument for further Semi-Detached & Attached Residential land be designated on this site, is based upon the land having proximity to a commercial centre at Noosa Junction and also an open space setting relative to Weyba Creek. An examination of the designations around the Noosa Junction centre show that there is a substantial Semi-Detached & Attached Residential area to the north of the centre, but there are also substantial areas to the east, west and south that have been indicated as Detached Housing. There is also considerable yield still available in the Semi-Detached & Attached Residential designated area.

The application submitted to Council for rezoning of this land to intensive residential purposes has not yet been finalised.

In the circumstances, the designation in the Strategic Plan is capable of ongoing support on the basis that a more intensive designation would either be premature in terms of need in the area and also in terms of assessment of the current application.

Although the application has been with Council for a very lengthy period, the applicant has made amendments to it and has foreshadowed further amendments which are yet to be submitted and which are causing delays in assessment of the application.

- 187.5.3 The submission contains an incorrect real property description and this may account for the submission seeking recognition of this land as a potential site for future resort developments as referred to under objective 2.2.4 of the relevant locality plan provisions (Section 18.2.4 of the compiled plan). This section already references the Settlers Cove site described as Lot 2 RP 899602.
- 187.5.4 The Strategic Plan is at a fairly detailed level and much comment has been made in the submissions about this fact. There is also the benefit of quite clear designations regarding the future nature and scale of developments in broadly designated areas. The subject land is a substantial site having various topographical features, including extensive waterway frontage. At more than 30 hectares, it is not accepted that a single preferred dominant land use designation could be satisfactorily applied and with Council's detailed intentions for the land being set out in the written section of the Strategic Plan. Obviously this would give broad flexibility as requested by the owner of the site, but for an area as diverse and extensive as the subject land, it is important that a level of detail be provided. Even the current Strategic Plan provides 3 designations recognising the open space function of the low lying lands nearest to the waterway and also the steep bank overlooking Noosa Sound, urban development of the elevated lands and the potential for tourist associated development.

**187.6 TOWN PLANNING DEPARTMENT
RECOMMENDATION:**

- 187.6.1 No amendments be made to the Strategic Plan designations over 1RP801918 and 2RP889602, noting that one of the requests within the submission has already been incorporated in the Strategic Plan provisions. “

[148] The significant paragraph is 187.5.1. Minds will differ about the description of the variation (presumably connoting correspondence) in zone and PDLU boundaries as “very close”; its adoption may be attributable to Mr Buckley's calling this issue “a relatively minor matter”. He was not asserting that boundaries were close. I think that the Council's belief and intention are encapsulated in the last sentence of 187.5.1, and that there is correspondence with the effect of the 1997 strategic plan as finally gazetted.

- [149] Mr Hughes reasonably relies on 187.5.1 to establish that the Council knew and intended that the SD & AR PDLU designation shrank the RHD zone. The author(s) may not have appreciated that the shrinkage area was substantial. The Council's valuer, Mr Slater boldly opined that the PLDU boundary (for which no convincing rationale has been suggested) was a mistake. Even if it had been, it could not be disregarded, being gazetted and forming part of the Strategic Plan: PEA section 2.4. But it is not the be-all and end-all. The words and criteria must be considered too. Mr Gibson criticised the appellant's case for focusing on that wording, undoubtedly there, which can be construed as less friendly to development than were the development-friendly words in the 1988 strategic plan; his accusation (which I think justified) was that all of the words should be taken into account. In respect of the 1997 strategic plan, that refers in particular to the introduction of flexibility noted in connection with (and inviting) Mrs Anderson's "refining" exercises. In similar vein, he urges that the cautionary aspects of the 1988 strategic plan relevant to the before case not be overlooked. Again, I think he is right. One further document should be noted in this connection, which features in Mr Hughes' submission. Although he was, I thought, somewhat coy in this regard, I think he was inviting the court to construe the new strategic plan, and, indeed, discern its genesis and intention, in a letter of the State Department of Environment, whose letter of 15 November 1996 in connection with assessment of R527 (exhibit 134, page 879) commences:

"Conservation Values of the Site

As previously advised the site contains high conservation values as it represents one of the few undeveloped wetland-open forest riverine communities on the southern banks of the Noosa River. Any development on the site will impact on these values. For this reason, it would be preferable that the whole site be designated *Conservation Area* or *Private or Public Open Space*. This would also ensure the protection of significant vegetation communities which have been identified as regional open space linkages and koala corridors. The designations of part of the site as *Tourist Facility Growth Area* and *Urban Area* are inconsistent with these conservation values. The current review of the strategic plan for Noosa Shire may provide an opportunity for these designations to be amended."

Interesting as it may be that communication, I do not consider that it is effective or available to assist the court in the construction of the 1997 strategic plan.

The geotechnical experts

- [150] Mr Amaral and Dr Shaw were the first expert witnesses called, and led the way in identifying issues upon which they gave their own opinions and as to which other experts made contributions as well. Their joint expert report, Exhibit 12, is dated 24 July 2010. It expressed general agreement with what had been set out by way of geotechnical constraints affecting the site revealed in reports of competent consultants engaged between 1979 (when the appellant acquired the site) and 1997. While geotechnical constraints were identified, the witnesses agreed that information available up to 1997 was insufficient for purposes of final design and that further geotechnical investigations were still required to enable the geotechnical feasibility of developing the site to be assessed adequately. It was

agreed that geotechnical constraints upon development of the appellant's site included:

- Areas of steep slopes including some within the Sand Dune Problem Area designated by the Council, development being precluded in the "SDPA" and not proposed there.
- Areas of or underlain by peat.
- Potential soft compressible soils that might underlie peat.
- Areas of shallow groundwater table. The existence of other constraints beyond their expertise, such as potential acid sulphate soils, to be addressed by other experts, was noted.

[151] The joint report contains a helpful explanation of the issues. It provided in figure 2.2(b) an overlay of areas of constraint over a precinct plan for the Settler's Cove Resort Development proposed and substantially accepted by the Council in its 1988 rezoning approval. The report reads:

"Areas of Steep Slopes (sand dunes): Generally it is accepted that major slope instability on sand dune slopes does not become an issue until slope angles exceed about 27°. Typically the upper 1.5m to 2.0m of the sand dune profile is loose becoming medium dense with depth. There were two approaches to the geotechnical assessment of the global stability of dune slopes that were in common use prior to 1997.

- The first approach defined a "stable" slope as that represented by a plane rising at 27° from the toe of the steep dune face.
- The second approach involved drawing a tangent to the existing face of the slope and allowing for two successive translational slides of the upper 2m of the profile below the tangent. The plane defined by this geometric construction was regarded as "stable".

If there was potential for the toe of the slope to be undercut by erosion, the location of the plane could be modified to take into consideration potential future relocation of the toe of the slope.

In the context of the sand dunes, a "stable" slope is defined as a slope which has a sufficiently high factor of safety against large scale movement of soil.

Development of the steep slopes on this site would require all structures to be founded below the plane identified by the geometric constructions described above. For very high and steeply sloping dunes, the setback required from the crest of the slope for this to be achieved may be significant. To reduce the setback distance, structures could be supported on piled footings taken below the plane with the piles designed to accommodate the lateral loads exerted by a landslip of the sand above the

“stable” plane. An alternative approach would be to excavate a significant volume of the upper sand dune and to construct a walk-out basement, parking garage or other similar space within the excavated area. In effect this would generally take the founding level to below the “stable” plane. If necessary the use of piles could also be adopted to support all or part of the structure.

The experts agree that a combination of these approaches would be expected to be adopted to identify the area of steep dunes slopes that are suitable for development.

Areas Underlain by Peat: The various reports identify the peat as very soft and highly organic. The available information indicates that the total thickness of peat is up to 4.8m. Potential settlement of the peat under load is not quantified except for one report where it is speculated that settlement of the peat could be up to half the layer thickness or more.

The experts are agreed that areas underlain by peat are not suitable for roads, structures or general filling where the long term elevation of the final fill surface needs to be maintained at a fixed level. The nature of the materials is such that they are not considered suitable for treatment by preloading and it is considered that for any proposed developments to be supported on ground in areas underlain by peat, the peat would need to be excavated and replaced with suitable engineered fill.

The peat is not considered suitable for use as engineered fill but, depending on the acid sulphate potential and feasibility of treatment, could be considered for use in landscaping.

Alternatively, structures in areas underlain by peat could be supported on piled footings taken through the peat and into underlying competent soils. To avoid large differential settlements it would be necessary to suspend all in-ground services to and from the buildings.

Shallow Groundwater Table: The low lying portions of the site are underlain by shallow ground water. This needs to be taken into consideration in the planning and execution of construction on the site. For example, traffickability for construction equipment would require the placement of bridging layers with specific areas set aside as designated haul roads. Subsurface investigations would require dewatering. Bulk excavations such as may be required for excavation and replacement of peat would likely require the construction of a water-tight coffer dam around the excavation area.”

[152] Deleting comments regarding a proposed “dead end” or cul-de-sac canal, the idea of which has been abandoned, the conclusions were:

“Areas of Steep Slopes (sand dunes): For slopes steeper than 27°, development to be set-back from the crest of the steep slopes and/or supported on piled footings as assessed by the methods discussed above, possibly in combination with excavation (unloading) of the upper area of the slopes.

Areas Underlain By Peat: For roads, structures or areas of general filling where the long term elevation of the final fill surface needs to be maintained at a fixed level, the peat would need to be excavated and replaced with suitable engineered fill.

The proposed canal is located in an area where the peat thickness is typically in the range of 1m to 2m. For stability, the peat would need to be removed from the sides of the canal and an excavation and replacement zone constructed around the perimeter of the canal. The dimensions of the excavation and replacement zone would depend on the proposed locations of buildings around the canal and the extent of site filling proposed.

Peat layers extend under the toes of sand dunes and it would be important that these areas be adequately investigated prior to development.

Other Constraints: It is possible that the alluvial, sequence beneath the peat contains soft compressible clays. Further deep investigations would be required to ensure that this is not the case. If deep compressible clays are encountered it would be necessary, in addition to removing the peat, to surcharge the areas for an extended period to remove the potential for large in-service differential settlements due to consolidation of the soft clays. Other techniques such as the construction of stone columns to reduce settlement or the installation of vertical drains to accelerate drainage could be considered.

- The experts are agreed that technical solutions are available to overcome the constraints described above and, from a geotechnical perspective, development of the site within the guidelines described is considered to be technically feasible. Some of the required solutions are expensive and not easy to implement and this would need to be taken into consideration when assessing the feasibility of development.”

Those conclusions were confirmed in respect of a revised version of the “before” case set out in Plan sk5c-1 on 28 April 2011 in a supplementary joint report. Speaking broadly, construction proposed came to be limited to areas free of the constraints dealt with. Most dramatically, the canal and some half dozen very large buildings along it were abandoned.

[153] Mr Amaral’s individual report (Exhibit 27) perhaps takes a more confident view than the author had hitherto indicated in the joint report. Dr Shaw’s court report, Exhibit 45 is more pessimistic. He now says the problem areas can be avoided, but that if development was to take place within areas of geotechnical constraint,

economic implications would need to be considered in assessing the feasibility of development postulated. He says that for an economically marginal development, unforeseen geotechnical conditions might have a significant impact on viability. He instanced Noosa Sanctuary, next door to the site, where he said that it turned out that 75 per cent more peat required removal than had been anticipated, that the cost of the exercise increased ten-fold. The insufficiency of geotechnical information for design purposes was reiterated, likewise the need for detailed geotechnical site investigation to assess actual geotechnical site conditions. He was challenged for postulating the presence of soft clay at depth as a geotechnical unknown. This is not entirely speculative, as soft clay has been noted in earlier investigations: see for example Exhibit 56, pages 8 and 11, reproducing test bore reports 1 and 4 (29 September and 1 October 1987).

[154] In his report, Dr Shaw says, and I think it has to be accepted that:
 “Geotechnical unknowns which have the potential to significantly affect the feasibility of development of the site include:

- The variation in thickness of peat in specific areas. Since the peat is unsuitable to support roads, in-ground services, structures or general filling where the final construction is settlement sensitive, this has implications with respect to volumes of excavation and replacement that may be required and the feasibility of carrying out such construction.
- The presence of soft clay at depth within the alluvial soil profile. This has implications with respect to the need for additional foundation treatment to remove the potential settlement and address potential stability issues for excavations and embankments.
- The depth to a suitable founding layer for piled footings. Foundation conditions are generally unknown.
- The composition of the sand dunes including the density profile on the steeper slopes. This has implications with respect to set-back distances from the crest of steep slopes, the depth of piling and excavation that may be required to enable construction to be founded on “stable” ground.
- The general subsurface profile beneath the elevated areas of the site. This has implications for deep excavations, basement construction, temporary and permanent retaining structures and footing design.
- The general subsurface profile beneath the lower slopes adjacent to the flood plain. The potential presence of peat beneath the toe of sand dunes, shallow groundwater conditions and inter-layered loose sand, peat and possibly soft clay will have an impact on construction techniques and founding levels.

- 7.5 The architectural experts have prepared a number of concept plans for development of the site. These are discussed in detail in the report but in general:
- No additional concept plans were prepared for the flood plain area other than shown on Plan 1001 SK 5C-1, described as “Schedule A”. This plan proposed a golf course and associated services, shops and facilities on the floodplain along with a canal with an entrance off Noosa Inlet with units and associated marina infrastructure around the perimeter of the canal. There are significant conflicts between this type of development and the geotechnical constraints on the flood plain.
 - It appears from concepts proposed by the architects that development of the northern elevated area of the site can be effectively carried out without any conflict with the geotechnical constraints.
 - Concepts proposed for development of the elevated eastern and southern elevated areas and on the adjacent flood plain in the south west corner are partly in conflict with the geotechnical constraints including steep slopes, peat, shallow groundwater conditions and potentially soft clay (not investigated).”

[155] More significant, he has expanded the area of constraints, expressing the view now that the extent of peat of a troublesome depth (that is greater than half a metre) is greater in the southwest corner of the area of the property, where potential development is now postulated, so that, being opposed generally to construction on peat, he would oppose the construction of 48 townhouses proposed in the new Plan in that location; in addition, in Area B, the southern elevated part of the site, he says that, following further consideration of material available, the area of steep slopes (greater than 27 degrees) is greater than earlier thought and would compromise a couple of two dozen or so large hypothetical buildings postulated for Area B. A further three of those buildings, he says, may be partly or close to wholly constructed above peat.

[156] While accepting that all constraints acknowledged can be overcome, the cost is unknown and may be considerable. I accept Dr Shaw’s views. Accepting Mr Amaral’s confidence that engineering solutions could be devised to cater to any desired outcome, I would expect that the advice given to a hypothetical potential purchaser in 1997 would be as proposed by Dr Shaw. For relevant purposes, it has always been known that serious geotechnical issues were presented by the site. Exhibit 54 is a collection of reports beginning with Golder Associates’ of 30 March 1979 regarding the “proposed 367 hectare Noosa Holiday Community development”; further investigatory work needed to be done regarding concerns for both “highland development” and “lowland developments”. The Council’s concerns are underlain by the opinion in Dr Shaw’s reports, particularly that of 17 May 1995, at p 106, and that of 14 July 1995 at p 111.

Flooding

[157] The site's western frontage is to Weyba Creek; its northern frontage is to Noosa Inlet. Low lying adjacent sections have been recognised as subject to flooding along both frontages. Indeed, the 1985 planning scheme maps show a coincidence of the flood-prone areas mapped with the Non-Urban Zone. The appellant's flooding expert was Dr Connor, the Council's Mr Collins. Mr Hughes QC, for the appellant elicited from Mr Collins that he was a "go to" person experienced in advising developers, in relation to developments on flood plains in particular, whereas Dr Connor's experience had been in advising Councils, and therefore one of taking a relatively conservative approach. The idea seemed to be that Dr Connor's vouching for the feasibility of the development proposal offered by the appellant as the "before" case came with the cachet of being presumptively conservative. Mr Collins was not invited to say that his misgivings about the "before" case derived additional weight for emanating from one of his particular experience in the past.

[158] In their joint report (exhibit 14) the experts found a good deal of common ground:
"Flooding – Agreed by both parties

A review of all the information suggests that a proposal prior to the September 1997 Strategic Plan would have required an 'independent flood study' of the impacts of that proposal.

The flooding issue therefore seems to depend on whether the independent flood study would have imposed a development constraint on the land that would have restricted the development aims of the landowner prior to the September 1997 Strategic Plan; and if there were likely to be restrictions, to what extent?

The question being asked therefore is: 'Prior to September 5 1997, what advice would flooding/hydraulic experts have given in this regard?'

Both experts agree that more detailed modelling would have been required and could have been done by consulting firms at the time.

If approached by either the landowner or the Council, credible hydraulic consultants at the time would have stated that a suitable 2D model could be implemented to provide a credible flood study and the outcomes.

Further, advice at that time from those credible hydraulic consultants would likely have been that:

Noosa River and Weyba Creek flooding would probably not have been significantly different from the proposition proposed by the developer's consultant because the peak flood levels were based on backwater flooding from the assumed storm surge level, with this level dominating peak flood levels across the site.

For detail flooding and stormwater across the site for a stormwater management plan, local creek flooding would need to be examined.

Given the relatively small discharge in those local streams, and the large area of land in which to manage that flow, advice from a credible consultant would likely have been that it could be managed adequately with constructed stream channels that would not restrict the development proposed to a smaller size than proposed. Siting of particular development parcels in the overall area may move somewhat due to stream siting but the overall development outcome would be similar. This assumes that an engineered floodway created for local creek runoff containment is allowable from other disciplines, such as ecology and general environmental constraints.

It is further agreed that:

Because of flooding constraints, development of the western floodplain area (that is the area inundated by ARI 100 year event) would have required engineered filling for developed land and compensatory excavation for balancing conveyance. It was also subject to buffer constraints within 25m of the fish habitat reserve.

In relation to the 1988 Rezoning Application R.221 as shown in the Cameron McNamara Precinct Plan Drawing No. 59411 (Figure 2.2(a)), solely from a flooding viewpoint, the proposed excavated canal may have been technically possible, subject to providing additional overland flow capacity parallel to the river and into the canal. However, it is acknowledged by both experts that there are other constraints to the creation of this canal. Neil Collins points to the joint experts report on water quality issues, for example, where Tony Weber for R.F Thompson and Neil Collins agreed that the canal and associated adjacent urban development would be unlikely to be feasible or gain approval under the 1988 Strategic Plan or under the 1997 Strategic Plan.

In relation to the combined effect of filling in the floodplain and other works on the site, there would be a need for compensatory excavation and shaping of the land to achieve no worsening of flooding. The Cameron McNamara report estimated overall compensatory flows for the development and an independent review for the Council by Cardno & Davies accepted the approach as reasonable and relevant for the site.

A qualified hydraulic consultant at the time, in undertaking an independent flood study, would have been able to design such a development platform. Based on our experience, it is likely that refinement of the development proposal would occur through the flood modelling process. The extent and impact of such refinement is discussed under the 'Disagreement' section.

The 1994 (R527) Rezoning Application for a Major Resort and Residential Development differed from the previous 1988 application in that the proposed canal was removed but the application would still have been subject to the same requirements of

a detailed flood study to satisfy flooding concerns. Filling for development would have required compensatory excavation for floodplain and local flows.

Both experts agree that the proposal would have required a detailed model to check floodplain and local flooding; a qualified hydraulic consultant would have been able to develop such a model. Based on our experience, it is likely that refinement of the development proposal would occur through the flood modelling process. The extent and impact of such refinement is discussed under the 'Disagreement' section.

Local Flooding

In the case of both applications R221 and R527, both experts agree that local flooding would have been required to properly site the development assets and assure Council and other parties that flooding risk was being managed.

Neil Collins has undertaken work recently to quantify the local flooding situation. In relation to local waterway flooding, solely from a flooding viewpoint, and some excavated channelization could be employed to reduce the waterway inundation extent to of the order of 30 or 40 metres in some form of channelized system. Detailed flood modelling would be required to confirm the actual dimensions but regardless the site area available suggests that there was adequate space available for this purpose, subject to other discipline constraints. Tom Connor has not closely reviewed this modelling at this time but does not disagree with the general outcome discussed in this paragraph. He agrees that channelization would be employed to reduce the waterway extent and an acceptable flooding outcome could be achieved.

Both experts agree that one would expect a qualified hydraulic consultant to be able to design a local waterway system which could handle the flows and not have substantial flooding impact on the development pattern as proposed. ...

Points of Disagreement

The extent and impacts of refinement of development proposals during the modelling process, in order to achieve an acceptable result, is not able to be accurately assessed unless the work is actually undertaken. The following comments refer to both applications R221 and R527.

In this case, Neil Collins is of the opinion that come cut-backs of development extent are likely since development of the western floodplain would have been difficult. A large number of iterations of the flood model would have been required, as was the case with Nifsan's Emerald Lakes Development, which was being prepared

around the 1995 to 1997 period. For both R221 and R527 proposals, no significant filling for the golf course has been assumed. If this is not the case, then the developments may not have been acceptable. Addition flood modelling would have been required to assess this.

In this case, Tom Connor is of the opinion that the circumstance of a high level of backwater influence in the river flooding situation will mean that the impact of iterations will be relatively easy to address with topographic adjustments and, given the large development area, there is ample opportunity to keep the development intent in terms of developable land. The R221 proposal would be more complex than the R527 proposal because the latter has less change to topography and does not involve a canal. Local flooding will require the iterations described in the 'Agreements' section but Tom Connor is of the opinion that any changes to the extent of the development proposed would be small given the ample land area available and opportunity to adjust development platforms to achieve a satisfactory flooding outcome.

Points of Uncertainty:

Tom Connor suggests that approvals for the development immediately south of the site at Noosa Sanctuary are an indication of the approvals that would be likely to be obtained by a prospective developer of Sanctuary Cove prior to September 1997.

Neil Collins says that whilst extensive floodplain filling was approved on the adjoining property to the south, his understanding was that the approval for this filling pre-dates the 1985 Planning Scheme and would not have been allowable due to flooding impacts under the standards in force just prior to the adoption of the 1997 Strategic Plan. Neil Collins also says that in 1996 and 1997 prior to the introduction of the 1997 Strategic Plan, there was a definite change in Council's approach to canal and floodplain development, with a number of development proposals being rejected.

Both experts have tried to clarify the exact dates of approvals for this adjacent site but at the time of writing no exact clarification has been provided to these experts."

- [159] A supplementary report of 15 April 2011 confirmed that the views expressed applied to Precinct Plan 1001SK5c-1, which had been made available to the authors in the interim, just as much as to the Precinct Plan Drawing originally considered (Drawing 59411).
- [160] Each man faced suggestions of departing from earlier agreement in later individual reports. I think there has been no more than increased emphasis on particular aspects, which might happen to favour one side or the other, and amplification of aspects not considered in any detail. Mr Collins drew particular criticism for a "flood constraint map" which conflated the consequences of the 100 year river flood event and the 100 year local flooding event which is fed essentially by flows onto the site from terrain east of Banksia Avenue, most of which gets concentrated

at a point just south of the end of Grant Street; the flow path lies between the northern high dune area of the site and the eastern high dune area, the significant local flooding impact being along its western edge. Those locations would not be affected by river flooding. Inundation would be fairly shallow, but, unless managed, potentially affect basement levels of a few of the apartments buildings postulated in the “before” case. There is a vast flood plain on site where “local” flood waters can spread out. Objections were raised to Dr Connor’s proposal to avoid issues from local flooding by a channel skirting the relevant dune area, but it seems clear that, from perspectives other than potential ecological ones, which have not emerged, a solution could be found.

- [161] On 8 November 1995 the Council endorsed a planning scheme review focusing on the Noosa River Catchment Management Strategy, the executive summary of which contains the following:

“Downstream of Tewantin, peak flood levels are governed by storm surge flooding...

... Flooding behaviour along the Noosa River, especially its lower reaches, is characterised by:

- Considerable areas of the Noosa River floodplain being flooded to relatively low depths by generally slow moving floodwaters...
- Relatively high flood levels persist for extended periods which increase inconvenience and nuisance.
- A relatively long ‘warning time’ is available....

The February 1992 flood event inundated some 540 lots, 156 of them above floor level, and caused some \$1.3 million damage. The average damage bill for urban communities along the Noosa River system is \$250,000 per annum.

The report recommends:-

- A design flood event with a normal severity of 100 years ARI (Average Recurrence Interval) be adopted for planning and development purposes. This design flood event is based on:-
 - The 100 year ARI storm surge and the 20 year ARI rainfall flood for the lower reaches of the system; and
 - The 20 year ARI storm surge and the 100 year ARI rainfall flood for the upper reaches of the system.
- A freeboard of 0.8m above the design flood event be adopted as the minimum floor level for residential dwellings...
- Subject to environmental and aesthetic implications, the filling of those parts of the flood plain designated as *Urban Area* on the 1988-95 Strategic Plan is appropriate for both new development and redevelopment. This will have no significant adverse effect on river flood heights or storm surge flood heights, though a slightly more extensive non-urban area will be inundated. The impact

of filling on local flood levels needs to be investigated on a case-by-case basis.

- Prevention of filling in flood plain areas apart from those described above....”

[162] Thus, flooding issues hardly loom large, but like some others point out problems a developer of the site concerned to achieve maximum development might face, the engineering and financial implications of which were unknown.

Flora and fauna constraints: Dr Olsen and the ecologists

[163] It was common ground that the site was unchanged before and after the relevant date and that the constraints on development were unchanged. The evidence of experts in ecological/environmental fields was essentially directed to the appellant’s “before” case so far as it reflected the approval in R221. The Council asserted that no-one would seriously have contemplated anything like a repeat of that approval by 1997. The appellant’s fallback position, speaking broadly, acknowledged the constraints being alleged in Mr McKerrell’s “before” design, which avoided development behind various constraint lines, although generally extending all the way up to them.

[164] Dr Olsen’s evidence was significant. He was called by the appellant as a flora expert with a view to presenting evidence as to what someone in his field would have provided by way of advice to an intending purchaser in 1997. Essentially, his advice was that his services were unnecessary given that ecological considerations within his field would not stand in the way of approval of development as proposed in the revised “before” case, indeed even of much more extensive development. He would have recommended that advice be taken from experts in other fields such as geotechnics, engineering and planning. It was not a case of his considering that the site lacked ecological values that might stand in the way of approval of development, but of his regretfully concluding that he could confidently predict for purposes of advising a “Hypothetical Prudent Purchaser” that the ecological values he found in the site (see the joint report Exhibit 17 paragraph 3.1.1) would not stand in the way of approval. His basis for that approach lay in the approval granted to the development at Noosa Sanctuary, immediately to the south of the site. That approval took its final form in a consent order resolving the developer’s conditions appeal to this court in June 1997: Exhibit 10. Dr Olsen said in the flora joint report of May 2010, Exhibit 17:

““3.1.1 If flora constraints were the only issue relevant to the appeal, my advice at the relevant time would have been that development beyond the toe of the dune would have been constrained by the presence of wetland vegetation, except the eutrophied wetland vegetation in the northeast and elsewhere dominated by *Typha* spp. *Urochloa mutica* and other taxa reflective of the high nutrient environment resulting from urban runoff displacing the native wetland vegetation in these areas. Given the various plans and maps available to me at the present time, I conclude that a line east of the northernmost projection of the corner of the developed property to the south could have been developed as other matters appear to have overridden environmental concerns in this area at the relevant time...

... The land immediately to the south of the subject land had analogous flora assets and values. Indeed, the flora assets and values of the land immediately to the south of the subject land could be argued as having higher natural values due to lower levels of disturbance and the former presence of the nationally endangered Swamp Orchid (*Phaius australis*). No material is available to assess the level of knowledge or assessment of the flora values of this site at the relevant date.”

[165] Dr Olsen’s view was repeated in his court report of August 2013:

“13. Thus, I would have advised a prudent purchaser at the relevant date that there were no Ecological (Flora and Vegetation) JER constraints east of the line depicted in Figure 2 of the Ecology (Flora and Vegetation) JER. This line (see Frontispiece) was determined by me on the following bases:

- (a) The north-eastern freshwater wetland area is utterly dominated by weed (non-native) vegetation as a consequence of urban runoff;
- (b) Freshwater sedgeland was developed to this point on contiguous land to the south;
- (c) Only a single rare (now near threatened) sedge (*Schoenus scabripes*) has been recorded from the native species dominated freshwater sedgeland area and this occurs predominantly to the west of that line; and,
- (d) In the 1988 Strategic Plan the site was identified for development and the line depicted on the Frontispiece represented an appropriate compromise between development of the land and retention of native vegetation.

14. With respect to (d) above, it is part of the job of an ecologist to make assessments with respect to appropriate development footprints when there is tension between the promotion of land for urban development and conservation of flora and vegetation. I would have advised a prospective purchaser or vendor accordingly.

CONCLUSION

15. I would have advised the prudent purchaser or vendor at this time:

- (a) That, in my opinion, the flora constraint line I prepared was a reasonable demarcation, in flora

terms, between areas relatively unconstrained (sic)²² and areas available for urban development;

- (b) That Council's support for R221 historically was relevant with respect to (a) above; and
- (c) That there were certainly no ecological reasons to inhibit development on the footprint prepared by McKerrell Architects known as Appendix 1.6.5(ix) including the area known as the 'Boardwalk Villas'."

[166] In the end it seems to me that Dr Olsen in so advising was presuming to give planning advice, consigning to irrelevancy the floristic concerns he was by definition being asked to advise upon – in effect taking his bat home and abandoning the game. The appellant bears the onus in this appeal. It does not persuade me that the Hypothetical Prudent Ecologist (HPE) called on to advise in September 1997 would adopt the “don’t worry” approach of Dr Olsen. He is right that not all of the environmental threats to development relied on by his colleagues had yet materialised (the *Vegetation Management Act 1999*, which Dr Thorogood relied on, in particular). But enough had already eventuated by September 1997 to set alarm bells loudly ringing. I am not persuaded that the HPE would have advised that the authorities lacked the will to enforce the legislation that had been enacted. Enough had emerged in relation to the appellant’s site in particular to send a clear warning that serious environmental concerns were held regarding development proposed on it. Inconsistency with the attitude taken to development to the immediate south does not matter. It would have been extraordinarily rash in my view to count on what happened there as in any way indicating what might happen in relation to the site.

[167] Dr Olsen’s view was that approval ought not to have been granted from the point of view of his area of expertise, citing in particular the floristic ground of his discovery on the Noosa Sanctuary land of a rare, endangered swamp orchid *Phaius australis* which he said he discovered on a tree at a higher level than his own, which was chest deep in water. There is now a two storey building in that very location, part of the Noosa Sanctuary (RACV) resort. The extensive built form of the resort, whose frontage is to Noosa Road from where it extends to Weyba Creek, now stretches from the road westwards about half way along the boundary with the site.²³ Dr Olsen says that the terrain on the site below the dune areas is floristically indistinguishable from its southern neighbour’s, although he has looked in vain there for the rare orchid. In the circumstances (which clearly were galling to him as an ecologist) he limited floristic constraints relevant to the appellant’s site to the area west of a line bearing a little west of north from the north western extremity of the Noosa Sanctuary built form running towards the foot of the northern high dunes formation, but as one approaches it, then arcing further to the west so as to admit to the developable area a swathe of sedgeland which he thought no longer represented

²² “Constrained” was probably intended.

²³ Built form at the eastern end occupies a triangular area which by the Exhibit 10 approval - and the EIS referred to and that is incorporated therein - was required to be kept free of development because it could be required by State authorities for “four-laning” of Noosa Road. It was only years later that control of Noosa Road passed to the Council which was not interested in widening it – no doubt an important consideration leading to approval of what has since been constructed.

native vegetation because of the invasion of Typha and a non-native species, paragrass. With the qualification in respect of that arc-defined area and the adjoining strip accommodating the drainage channel from Banksia Avenue, he conceded that, within the site, there was absolutely no difference between the western terrain and the eastern terrain floristically.

- [168] Dr Olsen in written reports also claims some support for his approach in the location of the ellipse marked by a broken orange line which in the 1998 Strategic Plan indicated potential for tourist development. It is arguable that there may be some rough correspondence between the western part of the ellipse and Dr Olsen's "flora constraint line". He did not pursue this aspect in oral evidence, I think wisely so, given that the ellipse must surely be taken only as a general indication that a significant tourist development might occur spanning both the appellant's site and its southern neighbour. It might be noted that in 1986 the Governor-in-Council approved the re-zoning of the area where Noosa Sanctuary resort now stands to Special Facilities for tourist accommodation and that a re-zoning application with similar intent in respect of the appellant's land was before the Council around that time (and, of course, to be approved by the Council in March 1988, six months before the coming into effect of the 1988 Strategic Plan).

Legislative changes before the relevant date

- [169] The Council mounted a strong case that the 1996 Noosa Sanctuary approval (supplanted by the Court's order of 19 June 1997, Exhibit 10) and the March 1988 Settler's Cove approval (for the site) provided no guidance as to the way in which a development application in respect of the appellant's site would be approached. Mr Gibson QC, for the Council, took advantage of his cross-examination of Dr Olsen, given the witness' interest (indeed substantial involvement) in the relevant events, to place on record what were represented as momentous changes in approaches to environmental matters at all levels of government, particularly at State level. Above that, there had begun an era of cooperation between Commonwealth and State governments regarding (inter alia) environmental matters, of which the culmination was the *Environment Protection and Biodiversity Conservation Act 1999*, whose predecessors included the *Endangered Species Protection Act 1992*.
- [170] In Queensland, in 1992 the *Local Government (Planning and Environment) Act 1990* (PEA) was amended to require councils to take environmental matters into account in assessing development proposals. There was also the *Fisheries Act 1994* (replacing the *Fisheries Act 1976*), the *Nature Conservation Act 1992* (repealing the *Fauna Conservation Act 1974*), the *Coastal Protection and Management Act 1995*, and the *Environmental Protection Act 1994*, not to mention supporting regulations. Acknowledging Dr Olsen's gloomy assessment that there was not much difference in practice, because of a lack of political will to enforce the new legislation (as to which I am not convinced that his expertise extends), I am persuaded that the legislative activity described does mark undeniable change in community attitudes and expectations of obvious relevance to the determination of market value of environmentally sensitive land; not many years passed before the new provisions which provided "a standard against which development applications could be assessed" and increasingly "potential impacts upon rare and threatened species of plant and animal life constituted a sound basis for refusing permission for

development”: *Barns v Maroochy Shire Council* [2010] QPELR 419, [84]. Judge Searles was describing a situation reached by 1996.²⁴

New Council policies

[171] At Council level, following the election of a new Council, presided over by an environmentally minded Mayor, Mr Playford, and said to comprise a majority of like-minded councillors, Dr Olsen acknowledged the following:

- Local Planning Policy No. 17 adopted 11 July 1991 – Development Applications Over Land Subject to Threatened Species Listings; (Exhibit 67).
- Local Planning Policy 16 adopted 22 December 1994 (replacing others adopted earlier) – Environmental Impact Statements (this instrument relied on the PEA; pages 8 and 9 list areas in respect of which Council might require an Environmental Impact Statement (EIS) in respect of development proposals which specifically in paragraph 4(a) includes the appellant’s site as among those “where deleterious impacts of an environmental or visual nature may result”: Exhibit 68).
- Local Planning Policy No. 5 adopted 13 March 1995 (replacing earlier policies) – Private Jetties, Wharfs, Pontoons and Boat Ramps which at item 4.0 Prohibition of Structures on Certain Foreshore Areas; the site and its southern neighbour were the “one such area” to that point identified where “Council will not favourably consider applications for foreshore improvement works on the southern bank of the river” (Exhibit 69).
- Local Planning Policy No. 1 adopted 25 May 1995 (replacing one of 7 February 1991) - Landscaping Guidelines (Exhibit 70).

(This policy deals with matters such as koala habitat, “retention of all existing vegetation including understorey plants and surface mulch” in “passive parkland” (4.8.2) and in 4.11 protection of creek lines and water courses as wild life corridors, green belts where natural vegetation in and adjacent to water courses may be preserved as “important to water quality”.)

[172] Dr Olsen was asked to identify documents in other categories such as:

- Excerpts from Catteral & Kingston, Remnant Bushland of Southeast Queensland in the 1990s, which came out in 1993 and maps the site as “remnant bushland”; Dr Olsen said he was pleased to see “remnant vegetation” used in what he said was its proper meaning, referring to land

²⁴ He stated his conclusion regarding environmental issues at [107]: “In my view, the evidence of Mr Agnew and Dr Olsen for the Council, to the extent that it was at odds with Mr Caneris and Dr Carter respectively, would be preferred by the purchaser and considered to be of such an impact as to constitute those environmental issues as a serious risk to the grant of approval for the proposed development.”

not cleared or substantially modified (Exhibit 71).

- Vegetation of Noosa Shire – A Planning Scheme Review Project, September 1995 (Exhibit 72).
- Noosa River System Bed & Bank Habitat – A Planning Scheme Review Project, June 1995 (Exhibit 73).
- A letter to the Council of 23 December 1994 from the appellant’s consultants enclosing the application for re-zoning designated by its file number R527, extracts only being included in the relevant exhibit, Exhibit 74.
- A letter of the Council dated 15 March 1993 to the Director of Local Government which the court heard formed part of considerable correspondence which occurred as a prelude to the last-mentioned rezoning application. This letter (Exhibit 75) is significant in strongly suggesting that the Council was pursuing in a stricter and more comprehensive way what ought to be required under the Terms of Reference (TOR) for the EIS considered necessary in respect of the rezoning proposal in relation to which the letter commenced by stating that “Noosa Council would wish to participate as a referral agency”.

[173] The next document tendered was Exhibit 76, the Department of Environment and Heritage’s comments made in a letter of 24 March 1995 to the Council upon the “environmental impact study” submitted. The covering letter assessed it as “less than satisfactory” in featuring statements in the Executive Summary indicating “that various issues will be addressed later in the report, but this was not the case”. It notes that “this site contains high conservation values as it represents one of the few undeveloped wetland-open forest riverine communities on the southern banks of the Noosa River.” A 13 page attachment alludes to issues regarding the lack of attention to potential impacts of the proposed golf course on the environment in construction or operational phases and similar problems about the lake proposed (along the north western foot of the southern high dune area on the site). Areas of concern not appropriately addressed related to fauna (koalas in particular), peat deposits, potential for acid sulphate soil impacts and water quality (“a monitoring programme for the first three-five years is raised but not mentioned again until cursory comments are presented in the section on environmental management”). The importance of attention to the stormwater system and to “minimise disturbance of acid sulphate producing soils and prevent the likelihood of contaminated water entering Weyba Creek or Noosa Inlet” was mentioned, and uncertainty about whether it was proposed to use natural wetlands on the site to control its drainage, erosion, sediment and nutrient outflow.

[174] The Department’s memorandum, commenting on 4.2.4 of the EIS (Detailed Description of Specific Vegetation Types) notes, presaging the covering letter, that the site represents one of the few undeveloped wetland-open forest riverine communities on the southern banks of the lower Noosa River and disputes certain contentions in the EIS, including as follows:

“VEGETATION TYPE 3

The text gives the impression that the site is weed infested. DEH officers have inspected the site and consider weed infestation to be minimal.

VEGETATION TYPE 4

This vegetation type should be renamed Freshwater Wetland/Heath.”

- [175] In these particular respects, Dr Olsen expressed disagreement, insisting on his classification of sedgeland as opposed to Freshwater Wetland/Heath. Otherwise, he was in agreement with the document, for example as to the single sampling of fauna being “ cursory at best”, the lack of substantiating information for dismissing issues of potential for a decrease in water quality as regards impacts to flora in particular and the inadequacy of the section regarding storm water drainage and erosion, from the point of view of water quality and hydrology and impacts on flora, there being no information presented to suggest that maintaining a low soil nutrient status (a matter of high priority) was achievable. In summary, the EIS was condemned and the necessity for a new one announced. The seriousness of the approach of officialdom in relation to EIS exercises, particularly in respect of the site, could hardly be missed.
- [176] Exhibit 77 is a report of consultants brought in by the Council to review the environmental impact statement. Although marked “Draft”, Exhibit 77 was said to be the final version presented to Council by Environment Science and Services in May 1995. Dr Olsen indicated his agreement with statements in this review that:

“Modern approaches to impact assessment involve a process whereby environmental considerations are fed into the initial stages of project planning through a process which involves:

- the determination of the environmental values of the site and surrounds,
- the preparation of concepts and development plans which as far as possible aim to protect these values,
- the preparation of management strategies (both during and post-construction) which aim to minimise the adverse effects of the proposed development, and
- the documentation of unavoidable impacts.

There is no evidence that such a process has been followed in this case. Given that there has been no systematic attempt to document the environmental values of the site and surrounds, and the only parts of the entire site that will avoid development appear to be a riparian buffer strip and retention of mature banksia and eucalypt trees adjacent to Banksia Avenue, there is a strong case to suggest that the development plans have not given as much recognition to environmental values as one might have expected in circumstances such as this.”

and with the reviewer's view that the EIS "has tended to under-estimate the environmental value of the subject site surrounds". Mr Gibson drew Dr Olsen's attention to the scope of the review, said to include "the significance of the heath and sedgeland which refer to the subject site, together with that of the underlying peat beds", in a challenge to the witness' opinion that the site contains sedgelands, but not heath.

[177] It was hardly a surprise and it may well have been in recognition of "modern approaches to impact assessment" that Mr Buckley's town planning consultancy firm advised the Council by letter of 24 July 1996 (Exhibit 78) that application R527 was sought to be amended by removal of the golf course and lake components of the application and amending the accommodation unit component to remove that component relating to a proposed Residential High Density Zone along Banksia Avenue (roughly, area B), the new proposal being for Residential Medium Density only.

[178] Concerns about the scaled-down proposal continued to be entertained by State authorities. Exhibit 79 is the Department of Primary Industries' letter to the Council of 26 November 1996; further scaling down the development area to more closely align with appropriate standards of environmental management and mitigation set out in earlier correspondence from the DPI was recommended:

"One critical feature is the large extent of freshwater wetlands contained within the modified boundary area marked for development"

Reference followed to the requirement of a "functional buffer around marine and *freshwater wetland systems and a water quality monitoring and reporting program*". These protection measures should have particular regard to the fisheries habitat values of natural wetlands, including the Weyba Fish Habitat Area (015-019A)."

[179] The DPI did "not accept or consider that the impacts of the development even in its modified form are minor in nature". Headings under which concerns were expressed included:

- WETLAND CONSERVATION & WATER QUALITY MAINTENANCE
- ACID SULFATE SOILS
- BUFFER AREAS, as to which "a buffer, 40 metres from the freshwater wetlands, should be adopted for the protection of fisheries resources and to maintain the integrity and present condition of the natural (freshwater and marine) wetlands and associated waterways present within and adjacent to the site".

Such a buffer would intrude well into the dunal areas and preclude development there.

- [180] All of the legislative and other materials referred to above (1999 Acts excepted) would have been available to a potential purchaser at the beginning of September 1997. I am driven to conclude that circumstances pertaining by that time dictated the more cautious advice Dr Hassall and Dr Thorogood proposed that the site presented with serious ecological issues that could limit development, further assessment of the site was needed to identify its values, and other expert advice, in particular planning advice. in nature”.
- [181] Before the relevant date, the Council came into possession of another report dated August 1997, from Peter Parker, Environmental Consultants Pty Ltd of Broken Head, New South Wales, entitled “A Flora and Fauna Survey of Settlers Cove, Noosa Heads” said to have been prepared for a firm of civil and structural engineers in Maroochydore. This is Exhibit 80. It records sightings on or immediately adjacent to the site of three categories of “Vulnerable or Significant Fauna”, namely koala, glossy black cockatoo and wallum froglet. According to the report, systematic flora and fauna surveys were undertaken on the site between 11 – 15 July and 11 – 12 August 1997. Such surveys should give a good idea of the site’s resources immediately before the relevant date. Mr Gibson’s purpose in placing Exhibit 80 before Dr Olsen seemed to include confronting him with another alleged expert categorisation of part of the site as heath, indeed wet heath. Dr Olsen was unmoved, observing, among other things, that Mr Parker’s qualifications were unknown. It is also the case that the “wet heath” proponents revealed through this series of exhibits were not made available for cross-examination. Dr Olsen’s view, which should be accepted, was that the ecological values of wet heath outstripped those of sedgeland. The debate is of only limited importance, given that Dr Olsen did not seek to resile from his view expressed in the joint report that, in either case, “eutrophied” areas arguably accepted, development beyond the toe of the dune would have been constrained by wetland vegetation. I think there is inconsistency in his conveying in his court report (paragraph 15(e)) that there would have been no issue in 1997 about constructing boardwalk villas above the wetland. Apropos “eutrophication”, the experts embraced varying definitions, differing as to what was required to bring land affected by ingress of nutrients within the category and in consequence to render it undeserving of protection for environmental reasons. Much of the experts’ classifications depends on interpretation of aerial photographs selected by particular experts as helpful. They had no opportunity for “ground truthing”. In my opinion, the brownish colouration looked for cannot be discerned as showing anything consistently. The brownish-tinged areas to an extent are ambulatory; they come and go. The problem nutrients essentially come from east of Banksia Avenue, thanks to Council drainage works which collect urban runoff and pipe it in concentrated form under the road near Grant Street to discharge on the site. These arrangements were well established by 1997. Whereas Dr Olsen’s view was that the parts of the site affected were eutrophied (which he considered irreversible), and therefore could be written off, for their own lack of values, even as buffer, I accept Dr Hassall’s evidence to contrary effect – that measures could be employed to eliminate paragrass, in particular.

Wet heath or sedgeland?

- [182] Hours at the appeal hearing were devoted to the “wet heath” versus “sedgeland” issue. References in various publications to one classification or the other were placed before the court and cross-examiners sought to confound witnesses by

references to them. Scorn was heaped on Dr Thorogood for his reliance on Queensland Herbarium mapping based on the floristics of the area before Captain Cook and the Endeavour sailed past in 1770. Dr Olsen was an author of a 1995 study commissioned by the Council which in one map had sedgeland (he says on account of restriction in the number of colours available) and in another map, in which colours seemed clearly distinguishable by reference to the degree of “redness” in the colours as wet heath, rather than sedgeland. This was explained away (and subsequently established to be) the result of an undetected erroneous reproduction of flora mapping for the Queensland Herbarium by Batianoff in the 1980s in which the category was sedgelands. This work is well-regarded and in the end, consensus was reached, Dr Thorogood’s own plant survey indicating sedgeland, rather than wet heath, and Dr Hassall deferring to Dr Olsen’s pre-eminence as a field botanist. I confess to some reluctance to let go of this issue myself, having regard to the time invested in it. Dr Olsen’s own survey of the site garnered results set out in appendix 2 of his report Exhibit 32.

Appendix 2 – Comparative Floristics of “wet heath-dominated plant community” and a “sedgeland plant community” (red – dominant; blue – frequent). Species names in bold face are those observed in the area mapped as “wet heath-dominated plant community” in Figure 1 of the Ecology (Flora and Vegetation) JER.

Dominants of wet heath	Dominants of sedgeland
red (<i>Baeckea frutescens</i>)	<i>Blechnum indicum</i>)red
red (<i>Banksia robur</i>)	<i>Empodisma minus</i>)red
red (<i>Leptospermum liversidgei</i>)	<i>Epacris microphylla</i>)red
red (<i>Sprenaelia sprengelioides</i>)	<i>Gahnia sieberiana</i>)red
red (<i>Xanthorrhoea fulva</i>)	<i>Gleichenia mendellii</i>)red
<i>Acacia hubbardiana</i>	<i>Lepironia articulata</i>)red
<i>Aotus ericoides</i>	<i>Leptospermum liversidgei</i>)red
<i>Baloskion pallens</i>	<i>Leptospermum semibaccatum</i>)red
<i>Baloskion tenuiculme</i>	<i>Melaleuca auinauenervia</i>)red
<i>Baloskion tetraphyllum</i>	<i>Aotus ericoides</i>
<i>Banksia oblongifolia</i>	<i>Aotus laniera</i>
<i>Baumea articulata</i>	<i>Baloskion tetraphyllum</i>
<i>Boronia falcifolia</i>	<i>Comesperma defoliatum</i>
<i>Burchardia umbellata</i>	<i>Cyperus polystachyos</i>
<i>Cassytha filiformis</i>	<i>Drosera binata</i>
<i>Cassytha glabella</i>	<i>Eleocharis sphacelata</i>

<i>Caustis blakei</i>	<i>Hibbertia salicifolia</i>
<i>Caustis recurvata</i>	<i>Hypolepis muelleri</i>
<i>Comesperma defoliatum</i>	<i>Juncus usitatus</i>
<i>Drosera burmannii</i>	<i>Leptospermum semibaccatum</i>
<i>Drosera peltata</i>	<i>Melastoma affine</i>
<i>Durrinatonla paludosa</i>	<i>Schoneus scabripes</i>
<i>Empodisma minus</i>	<i>Sprengelia sprengelioides</i>
<i>Entolasia stricta</i>	<i>Trachystylis stradbrokeensis</i>
<i>Epacris microphylla</i>	
<i>Epacris obtusifolia</i>	
<i>Epacris pulchella</i>	
<i>Eurychorda complanata</i>	
<i>Gahnia sieberiana</i>	
<i>Gonocarpus micranthus</i>	
<i>Hakea actites</i>	
<i>Hibbertia salicifolia</i>	
<i>Lentocarpus tenax</i>	
<i>Leptomeria acida</i>	
<i>Leptospermum polvaalifolium</i>	
<i>Leptospermum semibaccatum</i>	
<i>Leptospermum speciosum</i>	
<i>Leptospermum whitei</i>	
<i>Leucopogon leptospermoides</i>	
<i>Melaleuca nodosa</i>	
<i>Melaleuca pachyphylla</i>	
<i>Melaleuca quinauenergia</i>	
<i>Melaleuca thymifolia</i>	
<i>Monotoca scoparia</i>	
<i>Ochrosperma lineare</i>	
<i>Olax retusa</i>	
<i>Persoonia virgata</i>	

<i>Philotheca queenslandica</i>	
<i>Pimelea linifolia</i>	
<i>Platysace linearifolia</i>	
<i>Pseudanthus orientalis</i>	
<i>Pultenaea paleacea</i>	
<i>Schoneus brevifolius</i>	
<i>Selaaginella uliginosa</i>	
<i>Sporadanthus interruptus</i>	
<i>Stransea linearis</i>	
<i>Trachymene incisa</i>	
<i>Xanthorrhoea johnsonii</i>	

[183] The left hand column of appendix 2 lists species which are characteristic of wet heath, five “dominant” and 53 “frequent”. An indicator of the relative species richness as compared with sedgeland plant communities in the right hand column is that while they feature nine “dominants”, there are but 15 whose occurrence is “frequent”. The lists emanating from Queensland Herbarium and are not without imperfections; thus *Leptospermum semiboccatum* (found on the site by Dr Olsen) features in both categories in the sedgeland list and *Glichenia bicarpa* (which Dr Olsen found in abundance, as had Dr Thorogood) was not listed because the Herbarium list (as dominant) another species apparently limited to coastal islands, *Glichenia mendellii*. The only other sedgeland dominant not found by Dr Olsen was *Epacris microphylla*, which was also listed as frequent in wet heath. Two wet heath dominants were found on the site, being species listed as dominant in one case and frequent in the other for sedgeland. Otherwise, species located by Dr Olsen characteristic of sedgeland but also “frequent” in wet heath numbered eight, a modest representation against a possible 53. A plant survey which Dr Thorogood arranged to have completed (see Exhibit 97) did encounter *Epacris microphylla* (wallum heath), dominant in sedgeland and “frequent” in wet heath, and, perhaps more interestingly, *Persoonia virgata*, “frequent” in a wet heath-dominated plant community, according to the table, but not in the sedgeland list at all – which Dr Olsen did not encounter on the site. Exhibit 97 contains other species which Dr Thorogood contended were wet heath species, although not found in either of the Herbarium’s lists, such as *Eucalyptus robusta* (swamp mahogany) and a couple of species of *Baumea* not in the Herbarium lists, although *Baumea articulata* (as opposed to *sieberiana* and *rubiginosa*) is listed as frequent in wet heath. Exhibit 97 confirms the ubiquity of *Glichenia* species (coral fern).

[184] While the foregoing does perhaps illustrate that the natural world does not neatly bow to categories imposed on it, it vindicates Dr Olsen. It is understandable that Dr Thorogood and Dr Hassall, in the absence of any intimation when the joint expert reports were being prepared that Dr Olsen might propose an alternative characterisation to wet heath (he did indicate where his views rejected proposed

mapping or characterisations otherwise), reacted to what seemed a late change of position by Dr Olsen by regaling the court with chapter and verse tending to support their original one.

[185] Dr Olsen justified his late change of emphasis on the basis of a realisation at a late stage that the wet heath-sedgeland distinction may be significant: at the joint report stage, he had not thought it was, as both categories (from his botanical perspective) should have been protected. Overall, the relevant expert evidence persuades me that by “the relevant date”, assessment of development proposals in environmentally sensitive locations had changed. The gloomy approach of botanists (which Dr Hassall, Dr Thorogood and Dr Olsen all attested to in one form or another) that botanical concerns would never win the day to defeat a planning proposal was not necessarily appropriate as the relevant date loomed. The 1997 strategic plan did not, in my view, bring any decisive change. I reject the view that the Noosa Sanctuary approval has any significant weight, although the Council would no doubt be reminded of it if assessing like development on the site. The considerations were different, in particular given the prior rezoning which took effect soon after the 1985 planning scheme. While cognisant of its entitlement to consider the merits of any application for its consent to any particular proposal (see the 1990 Table of Zones at p 1754 and s 65(2) on p 1768)²⁵, the Council clearly regarded itself as committed to permit some development at Noosa Sanctuary in the locations rezoned Special Facilities (Resort Accommodation and Ancillary Facilities).

[186] At the end of the day, I am satisfied that a competent consultant in the field would have advised a hypothetical prudent purchaser along the lines of Dr Thorogood’s evidence in chief at p 5ff of the transcript for day 10 – I am conscious of the extent of quotation here; but it illustrates the flavour of much of the evidence presented:

“It’s clearly a freshwater wetland. It’s within the Sunshine Coast region. The water has a degree of tannic staining to it. It’s running through a peat-based wetland, likely to be more acidic than neutral. ... This would seem to be prospective habitat for at least two species that are listed under the Nature Conservation Act and, therefore, my advice to you as the prospective purchaser would be cautious that, at this time, let’s say 1996/1997, there is an increasing interest in these species and this form of habitat and I wouldn’t expect an approval process to be a rubber stamp. I wouldn’t expect it to be necessarily smooth. I’d expect there to be some requirements put on you to better understand this site before being given any formal approval.

...

If the prudent purchaser expressed the intent to develop the land at any scale then, ..., I would expect an EIS to be required and a terms of reference, obviously, would need to be developed to support that.

²⁵ 65 .. (2) In determining any application for consent pursuant to Part B hereof, the Council shall have regard to the circumstances and intent of any rezoning application giving rise to the existence of the Special Facilities Zone or the Special Residential Zone.

...

MR GIBSON ...

...

in terms of that depicted on the first page of exhibit 51, what advice would you give in terms of an expectation of a requirement for an EIS to include discussion of species, including these fish?---I – my response would be fairly strong. Looking at this, I would say this is a very substantial development you're proposing. It would appear to completely encompass the freshwater wetlands that you've asked me specifically to comment on. I think the chances of you not having to do an EIS for a development of this nature would be essentially non-existent.

And then, in terms of whether an EIS would be required to address listed species, including listed species of aquatic fauna, what advice would you give a purchaser about that in September '97?---My advice would be to expect that that – to anticipate that expectation of the agencies.

And if the EIS that was done pursuant to such a requirement identified the species on site, from your point of view, the field of your expertise, what advice would you give to the prospective purchaser as to the consequences for the development depicted on exhibit 51?---If an EIS was conducted and determined that those two species of fish that we referred to were present on the site?

Yes?---My advice to the purchaser would be your opportunity to develop that portion of the site has, for all intents for purposes, been extinguished. In my experience – look, at that stage, my consulting experience was probably less than a decade – was less than a decade, but I would say in my experience I've never seen an approval given to develop wetlands that support these two species of listed fish. I wouldn't expect a precedent to be set in this case.

All right. Now, assume for example, this is hypothetical of course, that one or both or one or other of the species was found in a pond or pool or channel at different locations on the wetland part of the site. Would it be possible, in your opinion, and what advice would you give to the developer as to whether the balance of the wetland area could be developed, leaving aside the pond or perhaps a buffer around it in which the fish were located?---The key to my response is the fact that we're discussing a wetland and, therefore by inference or definition, an area that is hydrologically connected. So what takes place in one part of the wetland, it would be very difficult to avoid it having an effect on another part of the wetland. In a sense simplistically, any attempt to mitigate by providing, for example, some form of hypothetical hydrologic barrier which I'm just throwing out there as a hypothetical

- -

...

Yes?--- - - - would also prevent the beneficial functions of that connectivity of waters across the wetland. So I'm not sure how you could possibly isolate a deleterious activity on the wetland from the balance of that wetland effectively.

And it would seem that Dr Richardson's of a similar view having stated in his report, exhibit 33, at paragraph 8, although in the context of the Fish Management Operational Policy, but he said that it applied as a matter of general principle anyway and I quote, "A buffer would likely be required between the proposed development and freshwater and marine wetland areas". Does that accord with your view?---Yes. I believe that opinion is reflecting our consensus that it's the freshwater wetland in its entirety that would be requiring of some form of protection.

...

If the prospective purchaser said the court has approved a development on the Noosa Sanctuary site, shouldn't that give me confidence?"- -I'd give advice in two respects. Firstly, I'd advise the prospective purchaser, my client, that whilst I've been practicing in this discipline and this geographic area for seven or eight years now, and whilst I'm aware of a development proceeding on adjoining land, as an ecologist, firstly, I don't have an intimate understanding of the approvals process behind that development, and secondly, I'm probably not the best person to ask to interpret the steps in that development process, so talk to my counterpart, the planner, about the implications of what you might be seeing there. But secondly, I'd say I haven't surveyed that site, but I have looked at aerial photos now, and I don't see any evidence of actual water bodies on that site, in contrast to the land that you're considering to purchase. And if there's no water bodies, then I wouldn't expect referral agencies or advisory agencies to require a fish survey.

I've traversed both of those channels.

...Was the extent of your surveying of the land sufficiently detailed as to be able to exclude the possibility of other off stream – or pools, I should describe them as, or water bodies?---No. Certainly not of pools.

... I would be surprised if there were other substantial channels.

... But the occasional off stream pool is likely and, indeed, some of the photographs that I provide ...illustrate the cryptic nature of some of the water bodies on site.

...

All right. Now, I should ask you firstly, then, two of the water bodies you've identified are the main channel and the minor channel?---Correct.

And there some pools and ponds and deeper sections throughout the length of each of those channels, I understand, from your discussion in the report?---There are.

In respect of their suitability as habitat for the two species of fish we're discussing, no. The fish would have no sense as to whether they'd been constructed or whether they were natural features.

Yes. So – and I don't want to be too colourful about this, but if you pointed these matters out to the prospective purchaser and he, she or it said, "Well, I won't be lodging a development application for some months after I purchase the land so if those channels were simply artificially constructed, that's simple. I'll fill them in. It won't be a problem", what would your advice be about that?---In a sense, my flippant advice would be don't get caught, that I would not – I could not recommend that as a professional as a course of preparing this site to support a development application.

... We accept the channel has been dug by human hand and, in a sense, that channel flags, at a very superficial examination, that this site is likely to have water bodies that might be of interest.

... Now, can I move to discuss a related issue ... I'm now directing attention to the development depicted on the last page of exhibit 51?

... Now, assuming then that the prospective purchaser said, ... I'm minded to limit the development to those two areas, A and B", what implications, if any, would development at those areas have in respect of conservation of the habitat for the two species fish ... I would say to my client that the modification to the proposed development is certainly heading in the right direction, ... but there are still elements of this proposed development that I consider to be risky in terms of gaining approval.

... In particular, I would advise that approval of what I see described as 48 by two storey boardwalk villas ... all of the 48 by two storey boardwalk villas are still located over what is agreed to be freshwater wetland and invariably my client would say to me but it's only a small area of the wetland and I'd say, well, yes, but, look, I can tell you that the Department will turn around and say it's only a small area of your development and they generally tend to hold the cards. My other concerns for the prospect of approval would be those dwellings or that development that is proposed both in area A and in area B on what amounts to the toe of the dune, so the lower portion of the dune, and I would be saying to my client, look, I appreciate that you've avoided putting these dwellings on top of the wetland and that will be recognised by the agencies, but there is – if you'd

proposed this development, if you'd come to me five years ago, you might have got this through, but over the last five years, I've been in practice. I've seen what's happening. I have a great professional relationship with offices in DPI Fisheries, for example, who have been actively translating their wish lists the way that they want to operate into actual hard policy. Those policies have now been published and promulgated. Here's a copy. Let me talk you through why both DPI Fisheries and the Department of Environment and Heritage, as it was then, are highly likely to require that you set back your development from the freshwater wetlands.

... I would explain to my client that the Department of Environment and Heritage has an absolute interest in freshwater wetland. This is freshwater wetland they will have an interest in conserving.

Without having surveys to see exactly what might be there?---Correct. The confirmation that they would require or indeed that they would have through their own level of investigation and mapping is that it's a freshwater wetland. That in itself is sufficient to trigger their concern and their policy-based need to conserve it. ... you would expect that there'd be a more detailed investigation of that freshwater wetland – sorry, of that portion of the freshwater wetland, and that may reveal that there are additional reasons to particularly conserve that corner.

... Or to provide it a greater level of protection.

...

... Apart from the dune areas on the site, is the balance of the site either a freshwater wetland or marine wetland?---To all intents and purposes, it is.

...

I'd reiterate that the freshwater wetland is a hydrologic single entity and, for that matter, it's connected to the dunes. But what happens at one end of the wetland will have some effect on what happens at the other.

...

What advice would you give to a prospective purchaser who wishes to develop the site, in terms of the development depicted on the last page of exhibit 51, as to likely requirements of the DEH?---I would say that the likely requirements are that you remove the boardwalk villas, that area of the development that encroaches directly on freshwater wetland, and that you recognise there will be an expectation from the department to provide some setback or buffer to the freshwater wetland. And that leaves me to suggest to you that your proposal to construct dwellings towards the toe of both dune A and dune B is overly ambitious, but I'm more than happy to work

with your civil engineers and others who might have some innovative response to that concern.

And insofar as you would describe it as overly ambitious, what requirement or response would you advise the client that you would expect DEH to give to such a proposal?---Well, DEHs position would almost certainly be the requirement for a physical setback of some tens of metres. I know in correspondence from DEH they've commented that a proposed setback of 25 metres was considered to be inadequate. That would accord with my recollection of the mood at the time. And that would translate to the removal of the majority, if not all, of what amounts of that front low or lower row of housing on the toe of the dune in close proximity to the freshwater wetland. That's the sort of response that I had seen them ask for in respect of other development.

...

The joint report, exhibit 18

...

... under the heading preliminary advice to the purchaser, Dr Richardson's advice, ... refers to the fish habitat management operational policy 001, stating that it was first published in 1996. ... it affords protection for plants growing both within the intertidal zone and adjacent to tidal land, and that was a common view as between yourself and Dr Richardson.

... it's presented as individual comments but to all intents and purposes it's a point of agreement.

...

... the fish lives in the water, that's of primary importance. What grows in the tidal waters is of very significant importance, but what grows adjoining to those tidal waters also has a significant influence on the flora of the tidal waters and the quality of the waters that the fish live in. So it was that growing understanding of connectivity that is reflected in this operational policy.

...

... in your individual report, exhibit 42, you refer to, ... the policy ... and ... the recommendation of a buffer width of 100 metres, not stated as a minimum, indeed, given as an example. And you have gone on at figure 3.8.3 at page 28, to depict a buffer around the wetland areas?---

...

... why did you select 50 metres rather than 100 metres, for example?---Because as a consulting ecologist practicing in the 1990s I was seeing that the department's stated position of seeking a buffer of 100 metres was more commonly than not negotiated to something less. On occasion it was negotiated as something more, but more commonly not to something less. So 50 metres, I think, I'm seeking to present what I believe is a reasonable expectation of a negotiated outcome.

And does that represent advice that you'd give to your client, the hopefully prudent purchaser, as at September 1997?---Yes

... The DPI was more articulate in expressing the extent of buffer it required in terms of policy document and the like. The DEH was less prescriptive in terms of what it published but was no less interested, and at times more aggressive in its pursuit of a buffer, and I think, again, as I've mentioned, the correspondence clearly reflects an offered 25 metre buffer wasn't enough.

...

I think it gives an indication of the scale of buffer that they consider necessary to protect the environmental values of wetlands.

...

... if a 40 metre buffer was required, then development of dwellings along that lower row on dune A and on dune B, with the probable exception of those dwellings ... facing south and facing north-west, wouldn't be approved.

...

... reference might be made to Noosa Sanctuary. ... Can you tell us what advice you'd give to the prospective purchaser in light of that?---I've yet to have a client who is a developer who wasn't also something of an optimist, at least at the outset.

...

... I wouldn't be at all surprised if that exact question was put to me. ... there's a cadastral boundary between the two sites, but to all intents and purposes, it's the same parcel of land. It's on the same landform.

... it would be imprudent to consider that they were identical in terms of constraints. ... the Noosa Sanctuary site actually didn't support any obvious forms of standing freshwater. It didn't provide obvious habitat for a couple of conservationally significant fish species, whereas the site you're considering to purchase very obviously does offer that habitat. So, you know, by all means,

pursue that line of investigation with your planner, with your engineers, with other professionals, but I would caution on considering them one and the same property, and I would be – I would be cautious about taking an undue level of comfort from what I see going up there.

...

... if we may hypothesise, assume for the moment that in September 1997, a prospective purchaser of this land did confide in you and say, “Well, Doctor, I’m intending – I’m seriously interested in buying this land and I will do so on a cash contract. That means if I don’t get approvals for the development then I take that risk”. What would you advise. ... Had I been put in that position, my most pressing interest would be to absolutely ensure that the client understood that I was offering him no advice that should encourage him to purchase the site on the basis that he could develop it. You know, being quite candid, I think my initial concern would be that I don’t want this client coming back to me and say but you said I’d probably be able to get this through ... is precisely the sort of issue that would bring, ... insurance up-to-date to top of mind. So I’m making the point that I would be very careful and I would obviously put this in writing that the investigations that I’ve undertaken on your behalf should not be taken as an encouragement or a suggestion that you will gain approvals for this proposed development and then I’d follow through by explaining where my concerns remained that development within the freshwater wetland area was unlikely to be approved and that any development on the dune would be scrutinised in respect of its potential impact on the freshwater wetland and, for that matter, the estuarine wetlands and waterways downstream and that, in my growing experience, there would be a requirement to create a buffer or a setback between development and those natural assets and that the extent of that buffer is likely to be around the 50-odd metre.

...

... Doctor, you talked earlier about advice you would give to the prospective purchaser in the context of issues pertaining to aquatic fauna. We’ve been discussing since then, aspects of the aquatic flora on the site. From what you’ve seen on your inspections and what you’re able then to perhaps infer as was the condition of the site in 1997, can you assist us with the advice that you would have given a prospective purchaser as to the prospects of maintaining – sorry, as to the impacts of the proposed development R221, on aquatic flora on the site firstly?---R221 being the expansive development of a range of facilities across, essentially, the entire site - - -

... therefore across, essentially, the entirety of the freshwater wetland. I’d repeat my advice to the prospective purchaser and that would be that the prospect of gaining approval for this development would be – there would be a very high chance of refusal.

And in terms of the more limited development, ... etcetera, what would your advice be to the prospective purchaser in terms of the potential impacts of that development on aquatic flora on the site and the significance and implications of those impacts? --- My advice to a prospective purchaser would be that, ... that would be favourably viewed, but that a portion of the proposed development still lay directly on top of freshwater wetland and particularly the Department of Environment and Heritage would likely take the view that that was unacceptable. They would likely take the view that from their perspective, there is no reason why this development needs to encroach on freshwater wetlands at all. ... I would then go on and explain that whilst your proposed development on the dunes at area A and also at area B avoids direct impact on the wetlands, it doesn't site itself over the freshwater wetlands, it's in such close proximity to those wetlands that it's unlikely that you will be able to afford those wetlands an effective buffer or setback. And that's something else that the department and the Department of Primary Industries Fisheries are both currently very actively interested in at this point in time

So in terms of the advice that you would give a prospective purchaser in relation to the impact of the development on the freshwater wetlands, I'm gathering that it is in, ... this morning in the context of aquatic fauna?---It's not. And that's because they are inextricably linked."

Terrestrial fauna

- [187] There were two joint vertebrate fauna experts' reports (both in Exhibit 19) prepared by Mr Agnew and Dr Ingram, who reached a large measure of agreement; their interposition while Dr Olsen's oral testimony was incomplete was a rare disruption to the orderly flow of evidence given in blocks according to expertise. According to work of Peter Parker in the months before the "relevant date" the site was home to at least three separate populations of the "threatened Wallum Froglet. These were located in the freshwater wetland. The Glossy Black-Cockatoo was observed at that time feeding in She-Oak (*Allocasuarina littoralis*) both on and very near to the site – another threatened species. Those birds were said to have loyalty to particular trees; signs of feeding remain, but no exercise of identifying particular relevant trees has taken place. Koalas have been observed on the site. In 1997 their conservation status was "culturally significant". It was contemplated, but not confirmed, that other species such as additional "acid frogs" and snails might use the site, such as the Grey-headed Flying Fox (recorded by Parker in 1997) and the Grey Goshawk. Both experts condemned R221 and welcomed the scaled-down proposal shown in the architects' joint report of August 2012 which restricts development in the revised "before" case to the dunal areas and the triangular area adjoining Area B in the south where the 48 boardwalk villas were proposed. Essentially, Mr Agnew would have advised that everything below about the toe of the dunes would be considered "highly constrained", that there should be limited or no development. A replication of the Noosa Sanctuary decision could not be assumed for retention of a corridor for koalas between the National Park and Lake Weyba was regarded as essential; it is provided along the northern-west of the site along the Noosa Inlet and

Weyba Creek, but I took access across the “wetland” area generally to be important. For the Glossy Black-Cockatoo, it would have been important in 1997 to preserve identified food trees or replace them if that was not possible.

- [188] There were differences between the experts regarding fauna constraint mapping at the margins. Mr Agnew pointed out the omission of mangrove areas along the water frontage, but more importantly queried the inclusion of some degraded terrain in the north-eastern part of the wetland (which I took him to accept might still be regarded as sensitive for proximity to superior habitat) and, on the basis of “ground-truthing” undertaken on 4 August 2013, the inclusion of a few prongs of froglet habitat tending to intrude into the dune area. It is no criticism of Mr Agnew to note that the usefulness of ground-truthing 16 years after the “relevant date” is open to question.
- [189] Dr Ingram accepted that it might well be reasonable to forget about the “prongs” and accept a simplified development line on the basis of the wetland being dedicated to the Council (something which the appellant, historically, has been disinclined to contemplate “until sub-division stage”). Dr Ingram’s view was that it was important to ensure that trees useful to koalas were preserved or planted around and through development areas. Reference to the latest plans for the “before” case available for consideration during his evidence suggested that such provision for trees had not (and probably could not) be made. His court report is Exhibit 41. The constraint lines in the before case were considered to have been appropriately placed by the architects. The appellant lauded Mr Ingram’s misgivings about buffers on developable land, and his description of them as “picking the developer’s pockets”. He was one of those who accepted that dedication of ecologically sensitive parts of a site could constitute a “carrot” attractive to a council assessing a development proposal.
- [190] In respect of the boardwalk villas area, Mr Agnew’s view expressed in his court report, Exhibit 34 at 14d, was that in balancing the habitat values present, the nature and extent of the proposed development, and in the context of contemporaneous development decisions made by the Council, in and before 1997, he would have advised the hypothetical prudent purchaser at that time that “development” within those areas may have been acceptable, though such development would necessitate best practice (in design, construction and management) and would need to reflect a high level of sensitivity to habitat values adjacent and to the west ... previously identified as a highly constrained part of the subject land.” That strikes me as notably cautious advice, strongly pointing to a conclusion that little confidence could be placed in the prospects of approval of the boardwalk villas.

Aquatic Fauna

- [191] Dr Thorogood, who worked with Dr Hassall, wore two different experts’ hats, being Dr Olsen’s counterpart in respect of botanical/flora matters, and Dr Richardson’s in respect of aquatic fauna. His court report, Exhibit 42 covered both aspects. Exhibit 18 contains their joint reports of September 2010 and April 2011 and Exhibit 33 is Dr Richardson’s individual court report. The advice he would have given a hypothetical prudent purchaser at the relevant date appears in the first joint report:

“Darren Richardson’s Advice

1. The upstream wetland areas are degraded and unlikely to support high value aquatic fauna habitats.
2. The remaining wetland habitats provide higher aquatic fauna habitat values. The Melaleuca and wet heath areas in particular would provide habitat to a range of fish and invertebrate species during wet periods (i.e. when surface waters are present). A range of aquatic invertebrate species also utilize these habitats during dry conditions, with community structure likely to vary in response to rainfall and drought conditions. To date, patterns in aquatic fauna community structure over time has not been assessed at the site.
3. The water quality conditions and general structural habitat features of the site are similar to conditions in which Oxleyan pygmy perch and honey blue-eye have been recorded elsewhere. However, given ongoing and historical disturbance of the site and upstream catchment and associated pressures and lack of connectivity to known populations nearby, it is considered unlikely that these species occur within the site. Further surveys undertaken over a range of hydrological conditions would be required to confirm this assumption.
4. Based on the requirements of Fish Habitat Management Operational Policy 001 (first published in 1996), a buffer would likely be required between the proposed development and freshwater (and marine) wetland areas.
5. Advice from Queensland Department of Primary Industries (DPI) to Council regarding buffer requirements for the Lot 2 (RP801918) Rezoning Application (21 November 1996) is contemporaneous with the proposal. In their letter to Council (21 November 1996), DPI recommended a buffer distance of 40 m from the freshwater wetlands be adopted for the protection of fisheries resources and to maintain the integrity and present condition of natural wetlands and associated waterways within and adjacent to the site.
6. Given points 4 and 5 above, my advice to a prudent purchaser would be that development in the freshwater wetland areas, particularly those in good condition in the middle and lower reaches of the wetland, would be constrained by DPI's buffer requirements. Some relaxation of wetland buffer requirements may have been allowed, subject to assessment of specific aquatic fauna habitat values of the site, and negotiation with regulatory authorities.
7. There are gaps in the current knowledge base which prevent a detailed consideration of the aquatic fauna habitat values of the site, and therefore the provision of detailed advice to a

Hypothetical Prudent Purchaser. In particular, the following information would need to be considered:

- a. Fish survey data at representative sites under different flow conditions. There was no available fish and aquatic invertebrate survey data for the site in 1997. Some limited survey data have been subsequently been collected by frc environmental, although this is unlikely to be representative of wetland conditions over time.
- b. An assessment of the hydrology of the site, particularly with respect to the provision of permanent waters within the site, which will ultimately determine whether the site could support the two threatened fish species (Oxleyan Pygmy Perch, honey blue-eye).
- c. An assessment of past clearing and disturbance history of the site, as determined through historical aerial photograph interpretation.
- d. Comparisons with applications and/or approvals for analogous sites containing a similar range of habitats as those found at the study site (e.g. The Sanctuary) and that are contemporaneous with the proposal, would provide useful background information. No such information has been considered by the expert's at the time of reporting."

[192] Dr Thorogood's views emerge clearly above. The experts advised it would be helpful to consider jointly hydrology of the site from the point of view of its supporting the threatened fish species, the history of clearing and disturbance of the site and "comparable applications and/or approvals for analogous sites ... that are contemporaneous." Their further work was reflected at the end of the agreed part of their later report in a somewhat gloomy vein under the heading "Contemporaneous Development Applications/Approvals":

"19. In conclusion, it would appear that neither Council, DEH nor proponents specifically considered rare and threatened fish, or freshwater fauna (i.e. fish, macroinvertebrates) generally, as major issues for consideration in the period leading up to the relevant date. This is likely to reflect in part a general lack of understanding/appreciation of the conservation importance of these species in the period prior to the relevant date; and in part the relatively small extent of suitable habitat characterizing these sites (JT notes that in all cases, a significantly lesser extent of suitable habitat than offered by the Settlers' Cove site).

20. In contrast, it is apparent that the EIS/IAS documentation for most of the reviewed development applications for development proposals located adjacent to the Noosa River and/or Fish Habitat Reserves (now referred to as Fish Habitat

Areas) considered the environmental values of estuarine habitats, particularly from the perspective of fish resource values. Most of these development applications (including the Settlers Cove development proposal) included buffer zones and stormwater treatment to mitigate potential development impacts to adjacent estuarine environments, albeit generally not at levels now considered as accepted practice. (JT plans proposed for the Settlers' Cove developments were robustly challenged by state government agencies leading up to the relevant date.)”

- [193] This was followed by Dr Thorogood’s review of documents he contended showed hostility to development over freshwater wetlands on the site from 1994 of the community, local and State authorities, and even the appellant’s own consultants. Dr Richardson in Exhibit 33 considered that “direct loss” of the boardwalk villas area would not been seen as a significant constraint from an aquatic perspective, given attitudes to freshwater wetlands at the time, but acknowledged that it would be necessary generally to demonstrate minimisation of “indirect effects” of stormwater.
- [194] Dr Thorogood’s explains his bases for considering that assessment of a proposal for the latest “before” case would have featured stricter scrutiny and imposition of tighter constraints. In my opinion, he is right. The floristic aspect comes in as important to habitat and, generally, conditions in which relevant aquatic fauna species may thrive. The site was agreed to contain three broad wetland types offering habitat for aquatic fauna and “which may partially constrain the development of the site:
- Mangrove dominated estuarine wetland
 - Palustrine wetland (i.e. freshwater and brackish sedges, *Melaleuca* and heath on sand and peats)
 - Creek (including fresh water drainage channels and associated pools)”
- [195] The first category exists along the site’s water frontages. The second category comprises the flood plain or flat area of the site below the two high dune areas. It is important in its relationship with the first category, in that species frequenting the mangrove area will enter adjoining *Melaleuca*, etc areas (which are potentially a rich source of food) when able to do so. Creek refers to what may well have been a natural creek historically, but is now more of an artificial channel conveying run off from an 80-hectare catchment primarily east of Banksia Avenue around the toe of Area A, being the northern high dunes and also a large U-shaped artificial channel which roughly runs parallel to the high dunes in Area B then tracks to the west parallel to the southern boundary of the site and then north to connect with the “Creek” first mentioned after it has changed to a north-westerly bearing terminating in Noosa Inlet from its original south-westerly bearing. That higher section, with its surrounds, is more degraded.
- [196] The experts identified two “threatened” species which might exist on the site – threatened being a common term according to the experts, used to describe collectively *endangered* and *vulnerable species*, according to the conservation status

assigned under the *Nature Conservation Act 1992* and/or the *Commonwealth Endangered Species Protection Act 1992*; other categories of conservation status are Culturally Significant, Common, Migratory or Least Concern. The two threatened fish species of potential concern are the Oxleyan Pygmy Perch (*Nannoperca oxleyana*) and the Honey Blue-Eye (*Pseudomugil mellis*), both being wallum habitat specialists, which could occur in similar environments to those found on another site. Neither is known to occur there however, it is agreed that no sufficient fish survey of the site and its catchment has occurred that might establish or exclude their presence. As the experts say, there is “a gap in existing knowledge”. The site has no direct linkage with known populations, although in flood conditions fish from a similar habitat across the Noosa River catchment (where they are known) may get to the site. Its actual suitability to provide habitat, while it may be likely, is not positively established. Water quality would be a vital factor.

- [197] A pest fish species, Eastern Gambusia (*Gambusia holbrooki*), also known as “Mosquito Fish” in recognition of another environmental nuisance it was introduced to control, has been found on the site; it is strongly inclined to chase the threatened species away. Dr Thorogood noted that in September 2009 Gambusia were notably absent from the mid-and upstream reaches of the man-made drainage channels running through the site’s palustrine wetlands and its isolated pools. In relation to the two species, both are listed as “vulnerable” under the *Nature Conservation (Wildlife) Regulation 1994*; the Honey Blue-Eye is similarly listed under the *Commonwealth Act*. In the first joint expert report, Dr Richardson’s advice to a hypothetical prudent purchaser based on professional knowledge and judgment at the relevant date (5 September 1997) would have noted that, although it might be unlikely the vulnerable species occurred within the site “further surveys undertaken over a range of hydrological conditions would be required to confirm this assumption.”
- [198] More significant is the advice that in a letter of 21 November 1996 the Queensland Department of Primary Industries had recommended a buffer distance of 40 metres from the freshwater wetlands be adopted for the protection of fisheries resources and to maintain the integrity and present condition of natural wetlands and associated waterways within and adjacent to the site. The relevant legislation is the *Fisheries Act*. The site adjoins the Weyba fish habitat area (declared in 1974), which is now part of the Noosa River fish habitat area. Quite apart from the protection wetlands on the site have under the *Queensland Coastal Protection and Management Act 1995*, any development on the site must confront the “buffer” requirements. Applied literally, the buffer requirements might preclude development of most of the high dune areas on the site, which potentially come within the “buffer” zones protecting the site’s own freshwater wetlands. Exhibit 88 is a copy of Fish Habitat Management Operational Policy FHMOP 001 of the DPI, dated April 1996. In 62 pages it details, by consolidating what had apparently come to be practice, departmental procedures for permit applications, assessment and approvals for marine plants. The document is the basis of the 40 metre buffer recommendation in the DPI’s letter and Dr Thorogood in the first joint report said he would have made specific reference to it as “substantially constrain(ing) the development potential of the site” if consulted by a potential purchaser before (and indeed after) the relevant date.
- [199] It is worth noting from FHMOP 001 a couple of passages:

“1.1 History

The management and protection of mangroves and other marine plants in Queensland has changed over time as community values and pressures on these resources has changed. In the early 1900's the focus of legislation and management was on the protection of the mangrove resource for the primary users (oyster growers) who at this time utilised mangrove timber for the production of oyster furniture. The response to the changing and increasing pressure on Queensland's coastal wetlands, the focus of management and the definition and protection of mangroves and marine plants in fisheries legislation changed. The definition of mangrove was broadened to include all marine plants growing on tidal lands which provided greater protection for fisheries habitat and fisheries resources. This definition was again amended in 1989 to include plants that are growing on adjacent lands and any part (e.g. seed, leaf, timber) of a marine plant whether living or dead, standing or fallen but excluding any plant declared under the Rural Lands Protection Act 1985. Fisheries legislation now protects all marine plants including saltmarsh, mangrove, seagrass and algal communities.”

“5.4 Mitigation measures

Where appropriate and a permit is issued, mitigation measures (to reduce/minimise/and/or prevent adverse impacts on marine plants) are to be undertaken by the proponent.

Mitigation measures may not be appropriate in every case. However Fisheries Division will require such measures to be undertaken by the proponent in most circumstances. Mitigation measures will be considered for every proposal and may include the following:

- (b) inclusion of buffer zones whenever feasible (e.g. 100m buffer zones between site boundary and marine plants or tidal lands);
- (c) use of alternative work methods, facility design, alternative location etc which would reduce the impacts on marine plants and habitats;
- (d) reinstatement of environmental flows (tidal regimes, bank profiles etc.) and rehabilitation of fisheries habitats within the area of disturbance or adjacent area;

- (e) provision of interpretive signs/boardwalks etc. for increased public knowledge and understanding of marine plants and fisheries habitats;
- (f) provision of increased public access and use of marine plants and fisheries habitats (e.g. provision of a boat ramp for recreational fishing and boating);
- (g) management and on-going monitoring of identified acid soils within the permit area; and
- (h) land exchange and funding fisheries research projects can also be considered as possible mitigation options.”

[200] Dr Richardson, responding to a diagrammatic representation of a 50 metre buffer in Exhibit 42 (Figure 3.8.3 at page 28) which conveys the same information offered (without explanation – it is also given in this form in the architect’s joint experts report Exhibit 23, and, significantly, a year earlier in August 2012) told the court in the course of cross-examination that he had done on his computer an exercise of applying a 40 metre buffer as proposed by the Department. We have not the advantage of a hard copy of this exercise, but Dr Richardson’s evidence confirmed that 11 of the 22 large buildings proposed for Area B in the “before” case most recently worked up fell wholly or partly within the buffer, as did 10 out of 19 (or 20, if one treats a large central building as two buildings) in Area A.

[201] Dr Richardson’s expectation, he said, was that the buffer contemplated could be the subject of negotiation, maybe to the point of being dispensed with. No basis was shown for confidence that such a happy result might have been achieved. It is clear, however, that a potential purchaser would have wished to know what the constraints might be.

[202] I was impressed by the written submissions of both parties upon aquatic fauna issues (appellant at paragraphs 231-232, covering four pages and respondent Council at paragraphs 257-277, covering eight pages), which summarise the evidence and argue cases well. At issue is the confidence that one can repose in the appellant’s before case. It rather seems that the freshwater wetlands would have constituted an obstacle indirectly, because of proximity to the tidal wetlands and buffer requirements. The ubiquitous issue of whether community and official attitudes were changing relevantly in the last year or so leading to the relevant date has to be confronted again. Dr Thorogood was taken to task for nominating the DPI Fisheries Department as the (unintending?) champion of the freshwater wetland, then going to water after accepting that it was concerned with “recreational fish and fish people eat” and nominating the Department of Environment and Heritage instead. It was noted that he considered (as did all witnesses) that stated buffer widths would be flexible and play a part in negotiations in which a developer of the site would have the advantage of being to offer dedication as an environmental

“carrot” to induce an approval. At the end of the day, the evidence under discussion adds weight to the conclusion (pointed to by other factors) that by 1997 so much of R221 as lay over or would adversely affect the wetlands would not have been approved.

[203] Dr Thorogood, of course, was not alone in asserting that environmental considerations were receiving much more serious consideration in the years leading up to 1997. An interesting snippet of corroboration referred to by him (which could not be cross-examined upon) is Exhibit 105, a letter of 11 July 1995 from engineering consultants the appellant had engaged to other consultants:

“(ii) Also find enclosed copies of material sent in June to Golder Associates; Eppell Olsen & Associates; and Kamst and Simpson, which sets out various concerns by the State Government Departments regarding their sections of the EIS. In our opinion there is nothing that cannot be readily addressed, although, it would appear that you will need to liaise with John Tucker concerning Acid Sulphate issues and general construction techniques/quantities.

(iii) There is little doubt that the main issues of concern expressed by the Department of Environment and Heritage relate to:

- Water Quality concerns
- concerns regarding various parts of the site’s vegetation
- the presence of Koala movements through the site
- Social/Economic issues.

...

In respect of the comments received from the State Government Departments concerning the EIS, it is not unexpected to have to comment further in respect of such a major EIS on such a significant site.

In essence, it would appear from the contents of the Department of Environment and Heritage’s letter that it may be quite difficult to get development approved over much of the freshwater Wetlands, unless it can be demonstrated that there will not be any unreasonable threat to the water quality of Noosa Inlet, Weyba Creek etc. and/or any unique and valuable riparian vegetation.”

Also part of the exhibit is a later letter addressed to the appellant’s principal Mr Thompson suggesting it may be necessary to amend the proposal then being pursued which opined that:

“We believe that the majority of the comments raised are largely due to:

- (a) the development of a more comprehensive environmental approach by the Department of Environment & Heritage (DEH) culminating in the proclamation of new environmental legislation;

- (b) an expansion in environmental staff numbers within DEH (150 new officers appointed in 1994/95);
- (c) green issues becoming politically important;
- (d) greater community interest in environmental issues and 'green' sites."

Acid Sulphate Soils

- [204] Essentially, on the issue of acid sulfate soils, they are agreed to be present in low lying areas of the site (being areas with surface levels below approximately five metres AHD) and not likely to be found in higher areas. The approach to be taken to managing acid sulfate soils "would have varied for each of the development concepts which have been proposed for the site", the associated level of risks and management costs varying likewise. Mr Shooter, engaged by the appellant, and Mr Sutherland, engaged by the Council, agreed that further analysis and sampling would have to be done, also estimates of costs involved in management. As Mr Shooter put it in his individual report, "it was agreed that the introduction of the 1997 Strategic Plan did not in itself notably affect the awareness of acid sulfate issues for the site, but there was a more formalised inclusion of acid sulfate soil issues in the assessment and approval process which would have improved Council's ability to influence the extent of acid sulfate soil assessment and management, and consider these in its own deliberations". It was agreed that a prudent purchaser prior to the new strategic plan's coming into force would have insisted upon further sampling and testing of acid sulfate soils in areas of proposed disturbance. Mr Shooter thought that the revised plans limiting development to the high dune areas ought not create acid sulfate soil and groundwater issues and that development would be possible in areas of the site shown to have acid sulfate soils present, if assessed and managed properly "and no other higher priority constraints prevailed". He thought that the issues within his expertise "should not represent a prohibitive constraint" in the triangular area where boardwalk villas have now been proposed.
- [205] Mr Sutherland disavowed disagreement with anything that came from Mr Shooter, but regaled the court with horror stories of acid sulfate soils management proving of greater magnitude, vastly more complex and more costly than anticipated, especially in Noosa Sanctuary, after 1997, but also in earlier instances. It was clear that acid sulfate soil issues were seriously entertained as early as 1992 in the Tweed Shire and quickly came to be accepted as requiring careful consideration in relevant professional fields. My own experience in the court began with a relevant application for subdivision on Bribie Island, the subject of a couple of 1997 appeals, in which, in the result, the proposal was rejected without judgment having to be reached regarding the acid sulfate soils issue, as to which a number of experts had given evidence: See *Jural No 11 Pty Ltd v Coolangatta Shire Council* [1999] QPELR 95, at 101J.
- [206] The potential problems which I find would have been alluded to by a competent consultant advising a prudent potential purchaser in 1997 coincide with Mr Sutherland's views; he emphasised that it is not merely a case of the extent of

material requiring removal or neutralisation by application of lime (in quantities required to achieve the requisite balance from whatever starting point might be encountered) – there are risks that cannot be calculated accurately of conditions that might be encountered during treatment processes, such as wet weather leading to complications, delay and cost, bearing in mind the vital importance of ensuring that any discharges from the area under treatment and the “treatment pad” must comply with water quality standards.

[207] Mr Sutherland has done an enormous amount of work, encapsulated in his individual report, Exhibit 47, and other exhibits. He has now done some of the investigation he says would have been recommended by competent advisors in 1997 which, in my view, amply justifies the cautious approach he says a consultant in 1997 would have taken. He says, based on advice from Dr Shaw, that peat may even extend under the toe of the dune area. It is true that the locations of his bore holes establishing the presence of peat on much of the site at varying depths, some even exceeding 3 metres were located 30 or 40 metres away from the dune “toes”, and that, moving towards them, peat thicknesses may have reduced. The point is that one simply does not know, and that would have placed any potential purchaser in a state of huge uncertainty, even in respect of development contemplated on the dune areas.

[208] The impression given by the evidence is that while awareness of the need to control “nutrients” has been on the increase, fears about acid sulphate soils in particular may have abated somewhat since the relevant date, about when they were at their highest. I am content to adopt the appellant’s summary:

“214. In terms of **ASS** [Acid Sulphate Soils] and **groundwater** matters relevant to the highest and best use under the 88 SP:

- (a) there were no areas of disagreement in the JER of the ASS and groundwater experts, Mr Shooter (on behalf of the Appellant) and Mr Sutherland (on behalf of the Council)²⁶ and relevant points of agreement included that:
 - (i) the low lying areas of the site, lower than approximately 5 metres AHD, were likely to have acid sulfate soil present;²⁷ and
 - (ii) it was unlikely that development within the sand dune areas, being those with surface elevations above 5 metres AHD, would encounter ASS;²⁸
- (b) as Mr Sutherland made clear, issues of ASS or peat don't preclude development of land, but they need to be properly addressed and managed;²⁹

²⁶ Ex. 13 p. 5.

²⁷ Ex. 13 p. 3, s. 1.

²⁸ Ex. 13 p. 3, s. 6.

²⁹ T6-17/25.

- (c) Mr Shooter made the following relevant observations about the development depicted in the McKerrell Plans:
 - (i) the development does not require a lot of soil excavation;³⁰
 - (ii) in large part the development is limited to within an area of the site where you wouldn't expect to find ASS;³¹ and
 - (iii) there would be very little removal of the peat required for the development proposal.³²
- (d) Mr Sutherland made the following relevant observations about the development depicted in the McKerrell Plans:
 - (i) as the development depicted was largely out of the flood plain, it was not dealt with in his individual report;³³
 - (ii) the development depicted is conservative in relation to ASS and groundwater issues;³⁴ and
 - (iii) there was simply no evidence before the Court to suggest that there was peat under the dunal areas upon which development was shown in the McKerrell Plans.³⁵

[209] However, in respect of (d)(iii), I became aware very late in the hearing of a document in evidence which convincingly referred to the likelihood or possibility of peat being under the dunes thanks to erosion of the dunes and sand consequently covering peat already there. Golder Associates, consulting geotechnical engineers, have been providing reports about the site since March 1979. It is clear that the dunes have not been stable; accretion by “wind blown deposits” occurs (Exhibit 134 pages 608, 626); “sand slides into the peat zone in the past” were suspected: Ibid 631. Exhibit 58 describes the dunes as advancing, but currently stable: “further advance has been halted by the existing vegetation” (2.0); erosion of the dune slopes was thought highly likely unless clearing and concentrated water discharges were limited (4.0). Even lowering of the dunes had been proposed as desirable to reduce surcharge and enhance slope stability (Exhibit 134 page 84). On the court’s inspection there was unmissable and dramatic evidence of sand in quite large amounts having washed down across a public walking track from private land higher up on the western side of the southern dune. This has been captured on some photographs in exhibit 65. Again, it is a case of paucity of information available in 1997 which would produce considerable uncertainty about what development on the site was feasible, and at what cost.

³⁰ T5-49/30.
³¹ T5-41/40-T4-42/5.
³² T5-49/15.
³³ T6-23/45.
³⁴ T5-77/45-T5-78/5.
³⁵ T6-24/20-30.

Storm Water and Water Quality

[210] The water quality experts were Mr Weber for the appellant and Mr Collins for the Council. The quality of runoff from the site during construction and in the long-term was a concern in 1988 as illustrated by conditions imposed in respect of R221 (see 9.3 and 12.1 in Exhibit 9) for the protection of Noosa River/Weyba Creek and of the Fish Habitat Reserve and its buffer surround. Distinct areas of concern in respect of discharges from the site were acknowledged to be the sand dunes (steep in parts and porous), the heathlands/sedgelands, a local creek waterway corridor and the inter-tidal zone. The appellant summarised the expert evidence in this way in paragraph 216 of the written submissions:

“216. The following **water quality** matters are relevant to the highest and best use under the 88 SP:

- (a) Mr Weber (on behalf of the Appellant) observed that:
 - (i) the Noosa Sanctuary site would have similar water quality constraints to the subject site;³⁶
 - (ii) there was no issues in relation to water quality based upon development of the ‘higher’ parts of the land;³⁷ and
 - (iii) appropriate water quality objectives could have been achieved at the relevant date for the development shown in the McKerrell Plans;³⁸
- (b) Mr Collins (on behalf of the Council) observed that:
 - (i) around the relevant date, any competent engineer would advise that there were no problems with respect to water quality arising from developing the northern dune, provided the appropriate measures as discussed in the JER were implemented;³⁹
 - (ii) hindsight confirms that since 1997 there have been a number of other units built in the northern dune area with similar systems;⁴⁰ and
 - (iii) in relation to development within the dune area near Banksia Avenue, his concern in relation to water quality was whether or not there was room on the western edge for water quality treatment devices.⁴¹
- (c) Mr Collins’ lingering concern (ie the capacity to accommodate water treatment areas) was addressed

³⁶ T4-59/15.

³⁷ T4-62/20.

³⁸ T4-62/30.

³⁹ T5-33/30.

⁴⁰ T5-33/35.

⁴¹ T5-34/25-30.

by the civil engineers (as set out below) who confirm that the water quality treatment devices he was concerned about have never been required for development of the subject site.⁴² Otherwise, water quality treatment (for road runoff – roof water and general runoff, were not of concern – could be accommodated).”

[211] The Council drew attention to aspects of the reports commencing with the agreed “Background”:

“194. When considering the prospect of developing the land in accordance with R221, Mr Collins and Mr Weber, the expert witnesses with respect to water quality, agreed in their Joint Report (**Ex 15 p 2**):

9. The flood inundation constraint from local and river flooding is significant and would have needed to be taken into account as a major constraint in 1997 prior to the adoption of the 1997 Strategic Plan.”

[212] The acceptability of proposals to deal with storm water solely by infiltration into the sand of the dunes (for which purpose Mr Collins suggested that insufficient area of ground had been allowed) was called into question. The Council experts emphasised the necessity of employing multiple methods, some of which might prove expensive, together. Mr Weber and Mr Collins prepared individual reports. The joint report records that:

“Points of Agreement

It is agreed that:

1. In relation to the 1988 Rezoning Application R.221 as shown in the Cameron McNamara Precinct Plan Drawing No. 59411 (Figure 2.2(a)), the areas listed as Precincts 3 (Sport and Recreation including Golf Course etc) and 5 (Multiple Dwellings etc), including the associated canal, were not likely to be feasible or gain approval under the 1988 Strategic Plan or under the 1997 Strategic Plan due to difficulties regarding management of the quality and quantity of upstream overland flow, and the management of construction pollution and general site runoff from disturbance in the peat areas within Precinct 3. Precinct 5 was not likely to be feasible due to the inability to

⁴² See para (iv) (above). [The reference is apparently to 215 (d) (iv),] which has Dr Connor confirming: “the flood constraints shown as Notes 5, 7, 8 in Exhibit 51 on p. 3, could be easily managed and flooding experts would give advice to developers to that effect;” It may have been intended to refer to Mr Gould in paragraph 217 (b)(iv) as observing: “while there are gross pollutant traps for some of the water draining to the subject site, even today there are no water quality improvement devices that relate to chemical compositions within the water;”.

sufficiently protect the water quality of Weyba Creek and the Noosa River as a result of construction of the canal.

2. Development of the Settlers Cove site in accordance with the 1987 Rezoning Application R.221 as shown in the Cameron McNamara Precinct Plan Drawing No. 59441 (Figure 2.2 (a)) was likely to be feasible, with respect to water quality requirements, only along the ridge lines above flood influence as indicated on the above plan as Precincts 1, 2, 4, 6 and 7, recognising the need for waterway retention for the Grant Street catchment to pass through the site, and subject to appropriate subsequent suitable detailed design. It was also likely that the reduced extent of development as described above would gain rezoning approval from Council under the 1988 Strategic Plan (and subsequent amendments up to commencement of the 1997 Strategic Plan) with regards to water quality requirements, again, subject to appropriate subsequent suitable detailed design and the above additional constraints, and subject to appropriate conditions setting out detailed design requirements.
3. The infrastructure as noted in the Jelliffe Environmental Pty Ltd Environmental Management Plan 970308 EMP/00 of September 1997, consisting of a system swales, sump pits and infiltration measures was, subject to suitable subsequent detailed design, likely to be sufficient to treat the developed site runoff from Precincts 1, 2, 4, 6 and 7 to a suitable level in order to meet the water quality requirements of the 1988 Strategic Plan.
4. There are only very limited details of the proposed development in Precincts 1, 2, 4, 6 and 7 in Precinct Plan Drawing No. 59411 as part of the R221 application. More detailed work is required to determine the actual achievable development outcome/yield and plan footprint on a Precinct by Precinct basis in relation to the ridge line precincts described above, and hence further consideration of stormwater management issues may be necessary if this is required in relation to the claim. If a further such refined plan is proposed, it is agreed that a further meeting of experts in relation to stormwater management may be necessary.”

- an indication that multiple techniques may well need to be employed together.

[213] The Council’s submissions went on:

“195. Further, in his individual report, Mr Weber expressed the opinion that (**Ex 30 p 1 para 5**):

... development of the peat land may well have involved significant impacts on costs, yield and return on development and may have been regarded as an area to avoid for a hypothetical developer.⁴³

196. Such concerns would not be put to rest by Mr Weber's oral evidence that (**T4- 52/L30-34**):

... on consideration and going back over the material available in 1988 and seeing the approval, I've come to realise that the water quality constraints over that area were unlikely to be significantly constraining in terms of how that may be developed, depending on matters of commercial feasibility and so on.

197. The court would be disinclined to prefer Mr Weber's evidence as to what a purchaser might have been told and might have done given that although Mr Weber was of the opinion that in 1997 it was unlikely that there would have been any specific requirements for water quality treatment (**T4-61/L1-8**), at that time Mr Weber was employed by Brisbane City Council (**T4-75/L9**). In comparison, around the Relevant Date, Mr Collins was a private consultant (**Ex 46 pp 23-28**) providing advice to developers and prospective purchasers about water quality and flooding (**T5-29/L44 – T5-30/L6**) including with respect to land in Noosa Shire (**T5-10/L37 – T5-11/L7; T5-11/L32-46**), as was Dr Johnson. Both Mr Collins and Dr Johnson gave evidence that while the science was not as sophisticated in 1997, Council was still likely to have imposed a requirement to install measures to remove nutrients, likely either vegetated swales or a constructed wetland (**Johnson T17-10/L26-35; Collins T5-12/L5-13**);

198. In that context it will also be noted that Mr Weber testified that (**T4-67/L6-10**):

By 1997, there were some requirements to not just manage litter and sediment. We were starting to become concerned about nutrients as well, and around about that time, we started seeing the regulatory requirements of the Environmental Protection and Water Policy come into place, which started to say that councils had to do something about water quality.

and said that he would expect Council to have taken '*every opportunity*' it could to impose conditions with respect to water quality controls that involved greater environmental constraints (**Weber T4-78/L33 – T4-79/L15**).⁴⁴

⁴³

Emphasis added.

⁴⁴

Although Mr Weber regarded the 1997 Strategic Plan as presenting a greater opportunity (see for example T4-78/L4-10 and T4-82/L19 – T4-84 /L40, a prudent purchaser would also be cognisant of Mr Collins' advice to the contrary (**T4-86/11-32**).

199. It will also be noted that before the *Environmental Protection (Water) Policy 1997* came into force on 5 June 1997, it underwent extensive consultation, which was completed in 1995, and, as a consequence of that consultation and the strong references in the draft policy to the ANZAC guidelines for nutrient pH controls, it was general industry knowledge nutrient controls were required (**Collins T5-12/L5-13**)."

[214] Mr Weber, reviewing matters more than three years on, has considered the most recent "before" and "after" cases, and opines that the McKerrell Architects Plan No 1.6.5(xi), put forward as a "before" development potential in 1997 could have been achieved with respect to water quality issues. It seemed clear that his view was influenced to a considerable extent by approaches taken in the Brisbane City Council, where he had been working in the 1990s. I do not think it right to generalise on the basis of his experience there, assuming he recalls it correctly, still less to contemplate that a similar "indulgent" approach would have been taken in 1997 by the Noosa Shire Council. I accept Mr Collins' opinion as to the advice that would have been given by him in 1997 regarding:

"6.2 The Alternate Proposal of the Amended Claim

With the exception of the disputed constrained building area in the south-west corner (referred to by Mr McKerrell as the Boardwalk Villas), and the additional units that encroach into the floodplain and peat soil areas as described in 6.1(f)⁴⁵ above, the remainder of the proposed development referred to as unconstrained building area, is above the floodplain. This alternative proposal also retains the existing site creek corridor.

My advice to a prudent purchaser in relation to flooding and water quality would be that:

- a) Site constraints in relation to flooding and water quality are as shown in the attached constraints maps shown in Appendix C, with little or no development possible in the red areas.

⁴⁵ "(f) some of the proposed units in Precinct 4A of Plan 1001 SK 5C-1 are proposed below the flood inundation extent. This is demonstrated by McKerrell Architects drawing Appendix 1.6.5 (xi) which was included in the first joint experts report by the Architects. Further, McKerrell proposed pre-case to incorporate a road below flood level. This is demonstrated through their drawings Appendices 1.6.5 (xiii) and 1.6.5 (xvii). The road and building basement would need to be protected by a flood protection wall and tanking, with pumped drainage, which would add significantly to the cost. Alternatively the proposed units would need to be reduced in size to get them out of the floodplain, or deleted."

What is said about flood inundation and extent is correct on the basis of levels shown in plans before the court.

- b) Ridge line development beyond the floodplain and above the ARI 100 year flood level, as shown as unconstrained building areas on the alternative plan may be achievable subject to the provision of suitable stormwater treatment measures and that these will require 3 to 5% of the land area above the floodplain.
- c) The density of development as shown by Mr McKerrell in his plan 'Appendix 1.6.5 (ix)' is too high to allow appropriate stormwater quality control devices to be provided, particularly on the lower slopes, and that a reduction in building footprint and GFA would be required to accommodate suitable stormwater treatment measures.
- d) Because of the technical difficulties for treating stormwater run-off from an elevated boardwalk area above sensitive heathland, within a floodplain, the Boardwalk Villas proposal is unlikely to gain approval.
- e) Even if the Boardwalk Villas proposal were to be pursued, it would require an expensive pump drainage system to a treatment area within the unconstrained building area, which would lead to the need for a further reduction in building footprint and GFA to accommodate such a treatment area.
- f) Some reduction in development extent between Sections A&B on McKerrell plan 'Appendix 1.6.5(xiii)' on the western side where there is encroachment into the floodplain and over peat soils would be required. The proposed road through the basement below flood level here is also problematic and would require expensive tanked walls and a dewatering pump. (As per 6.1(f) above).

[215] In summary, on all of these hydraulic issues, including water quality ones, I accept the evidence of the Council's experts as to the extent to which caution would have characterised advice given to a potential purchaser. The appellant's difficulty is that, while less emphasis may have been placed on risks in advice given by the experts they have engaged for purposes of the appeal, who, by and large, opined that development in accordance with the most recent "before" case might have been satisfactorily achieved, albeit at unknown cost (only Mr Sutherland embarked on costing exercises, which might be seen as incorporating dire warnings - the fact is that insufficient examination of the site has occurred to permit costs to be estimated), we cannot be blind and deaf to the cautious advice that would have come if the Council's experts had been brought in. In my view, that situation represents a difficulty for the appellant from the point of view of persuading the court that a prudent purchaser apprised of the pitfalls, could somehow have taken

these uncertain costs into account in determining how much to pay. The assumption is that such a purchaser would have been armed with all of the presumed advice, hopeful or pessimistic, that has been described by the parade of expert witnesses in this appeal.

Visual amenity

[216] Mr Chenoweth and Dr Hassall (also an expert for the Council in relation to flora and vegetation – so that he faced two cross-examinations by different counsel) provided a rare instance of experts whose matters of disagreement were “nil” in their joint report of 8 July 2010, Exhibit 20. Although the grounds of appeal and points of claim might not have mentioned visual amenity specifically, they regarded it as a factor the Council would have taken into consideration in assessing any application for development of the site at all relevant times, along with environmental impacts, which they left it for other groupings of experts to advise upon. They sought to eschew presenting opinions regarding planning matters. Visual amenity issues came to be subsumed in the architectural and planning ones.

[217] The 1997 PDLU boundaries were considered to correspond approximately to the natural boundaries and categories of visual amenity mapped by Dr Hassall’s firm, Yurrah, boundaries which it was likely would be sought to be changed by rezoning or material change of use applications. These two experts agreed, with some duplication of paragraph numbering, that:

“2.3 The relevant considerations (with respect to this Joint Report of Visual Amenity Experts) are the landscape and visual amenity values of the subject land as they existed at the relevant date (as far as we can determine), with respect to the provisions of the 1985 Scheme, the 1988 Strategic Plan and the 1997 Strategic Plan, and the advice which we would have given to a hypothetical prudent purchaser regarding development potential.

2.4 ... we have had reference to ...

...

- The 1995 Noosa Networks study (Summers, P (1995) “*Networks based on Landform, Landscape, Aesthetic and Environmental Values in Noosa shire*” A Planning Scheme Review Project, Noosa Shire Council.
- Previous applications for and approvals for development on the subject land

...

2.3 With respect to land zoned Non Urban, we would have advised a hypothetical prudent purchaser that the steep vegetated dune sloping to the Noosa Inlet on the northern boundary of the subject land had (in addition to other constraints) high landscape and scenic values, and should not be considered as developable. Low-lying land in this zone, designated as Area Subject to Flooding, also included waterfront mangroves and other riparian forest and woodland which formed the scenic edge of the Noosa River

and Weyba Creek, and which also represented a significant visual amenity constraint to development. Both these areas are identified as visually sensitive on the attached Yurrah Figures.

- 2.4 With respect to the flat low-lying land zoned Open Space,⁴⁶ our advice would have been that although it may have nature conservation, floodway and buffer values, some development could (if consistent with the relevant planning scheme) take place with little impact on visual amenity, provided buildings and structures were well set back from the waterfront and screened by existing riparian vegetation. However some riparian vegetation was not tall enough to screen buildings, and in those areas some form of recreational open space may be considered, where encouraged by the relevant planning scheme.
- 2.5 With respect to the vegetated dune areas, the extent of future development considered acceptable in terms of visual amenity at the relevant date would have been guided by the designations and provisions of the applicable planning scheme. While it is accepted that the locations and densities of development likely to have been approved by Noosa Council before and after the relevant date may be different (and this is a matter for other experts to interpret and compare the provisions of the two Strategic Plans), some development would have been possible in these areas without significant visual impacts. We would have advised a hypothetical prudent purchaser that appropriate development in these areas would:
- retain a wooded ridgeline, especially in any places where it formed the skyline as viewed from the waterways, public roads or parks, and the houses of Noosa Sound;
 - demonstrate visual integration of buildings with the vegetated slopes in areas visible from external views, by retention of a proportion of trees, restricting building heights to below the prevailing tree height of 15-20 m, by sensitive development which avoided visual scarring of hillsides, and by appropriate controls on design, roof forms, materials and colour.
- 2.6 Within these guidelines, parts of the vegetated dunes could integrate built form up to four storeys with minimal and acceptable visual impacts on critical viewpoints. The visual sensitivity analysis undertaken by Yurrah indicate that, while the subject land has a wide viewshed (based on topographic modelling alone), it also shows that the most sensitive areas had vegetation capable of screening, and that

⁴⁶

Mr Chenoweth says his intention was to refer to PDLU designations rather than zonings.

the main viewpoints were east-facing houses bordering Noosa Sound.

- 2.7 On these dune areas, we would have advised that the location and density of development consistent with the planning scheme, and the extent of visual amenity impacts likely to be considered acceptable to Council, would be guided by the Strategic Plan and the encouragement it afforded residential and tourism-related development on the subject land.
- 2.8 The 88SP designated the dune areas on the subject land (except the steep northern slope above Noosa Inlet) as “Urban Area” (pink) and the low-lying flat areas and waterfront as “Public and Private Open Space” PDLU (green), with an elliptical symbol for “Tourist Facility Growth Area” across parts of both pink and green PDLUs. While there were provisions in the 88SP which indicated that not all such PDLU areas would provide suitable for development, and that Council would take a range of environmental matters into consideration, visual amenity was not identified as a constraint for the subject land, but rather the 88SP specifically identified the site for future tourism development.
- 2.9 Accordingly, we would have advised a hypothetical purchaser that few visual amenity constraints applied to the type of development encouraged by the 88SP, apart from the standards of environmental sensitivity and integration expected in a premier tourist resort area in an attractive natural setting. At the relevant date, we would also have advised that Council would be guided by the 1995 Networks Study, which although at that time not having any statutory force, nevertheless had identified environmental and landscape values for all areas bordering the Noosa River and associated waterways.”

[218] The natural meaning of 2.9 is that the Networks Study, which became Exhibit 107, was a relevant consideration before the relevant date. The Council adopted it in April 1996. It is item 26 in s 28 of the 1997 Strategic Plan, which lists the 34 underlying planning studies. It was thus part and parcel of the investigatory work required for formulation of the new Strategic Plan, its scope being indicated by the full title, “Networks Based on Landform, Landscape, Aesthetic & Environmental Values in Noosa Shire, a Planning Scheme Review Project”. Map 3.1 in appendix C is said to convert a “conceptual model described in Figure 3.2 into mapping outcomes ... using the concepts of frame, core and link elements”. The relevant section of the document is entitled “Landform and Landscape Features and Their Associated Environmental and Aesthetic Values in Noosa Shire”, the exercise being that “an assessment is made of the open space values found within the Shire.”

[219] The key features of Noosa Shire are identified in:

“FIGURE 3.1 KEY FEATURES OF NOOSA SHIRE

Frame elements, comprising the main escarpment and the higher regions of the sub-coastal escarpment, to



Core elements comprising the central forested heartland of the Shire located on the sub-coastal escarpment and the coastal lowlands and dune systems fringing the sub-coastal escarpment, which are



Connected to other core elements dominated by State Forest and the sub-coastal escarpment, all of which are



Connected by a series of link elements based on the ranges or waterways which traverse the Shire.”

The site except for the Banksia Avenue frontage is clearly mapped “core”. The drainage feature surrounding Area A appears to be recognised as a waterway. There was a good deal of cross-examination of Dr Hassall by Mr Job (T13-19 ff) apparently directed to whether the study was linked to the 1988 Strategic Plan or should be regarded as part and parcel of the 1997 one. Dr Hassall (13-20) said he would have advised in relation to the study its providing a better guide to the significant features of the Shire that were mentioned in the Planning Scheme and the 1988 Strategic Plan. He said⁴⁷:

“The most informative parts of it are the maps at the end, that bring people’s attention ... rather than reading ... raw descriptions ... they can relate what’s in the report to particular parts of the Shire, including their own land ... one would have broad indications from the written word that were subsequently expanded on or clarified by the maps in the Networks Study.”

- [220] It is the “environmental”/“conservation”/“buffer” aspects which dictate that “low-lying land must be regarded as without development potential either before or after the relevant date. The authors appear to have made no reference to the 1990 planning scheme, which of course had supplanted the 1985 one and which contained a number of provisions collected in the Council’s written submissions referring to the assertion in points of defence that implications of the high visibility (the basis of concern of those experts) would be of interest in determining market value at paragraphs 279-82 and noted by me at [290] below. I agree that those provisions bring visual amenity aspects into consideration from around 1990. This is of special importance for Area B and the amenity of Banksia Avenue. The advent of the architects’ reports led to a debate about this, Dr Hassall siding with Mr Robinson and his identical “before” and “after” best and highest use scenarios, Mr Chenoweth opining that in the before case three-storey buildings could have been dug into the hill to appear from a vantage point across the road as two storeys only and/or would have been hidden behind a screen of cypress trees established (whether on or off the site, it is not entirely clear) in Banksia Avenue. Dr Hassall thought that a 20 metre setback from Banksia Avenue for tree retention would be

⁴⁷ (in a key part of a longer passage of evidence reproduced later in paragraph [221])

required (Exhibit 44 paragraph 3.9), far in excess of what the architects contemplated.

- [221] Dr Hassall accepted that in the 1988 Strategic Plan contained few visual amenity constraints were expressed, apart from those to do with tourist developments. At 13-23 this appears in the cross-examination:

“Are you saying there was no change brought about the ’97 strategic plan to the recognition or the guidance provided by the ’95 network study? --- I think ... that ... although poorly articulated, there were references to the protection of the Noosa River estuary, and Weyba Creek in the ’88 strategic plan, and I believe also the planning scheme, but they weren’t very well articulated with respect to particular sites. The effect of the network planning study was to provide maps that allowed people to see where those constraints occurred on their sites. I don’t believe those constraints were fully taken into the ’97 strategic plan.

All right. Now, you’ve mentioned a number of times provisions in a general sense of the 1988 strategic plan? --- Yes.

I want you to do this: to assume that we’re comparing just the ’88 strategic plan absent the ’95 planning study

--- in the before scenario, and the ’97 strategic plan, incorporating as it does the planning study in the after scenario? --- Yes.

And you’re – it seems you’re familiar with both strategic plans in terms of what they provide? --- I’m generally familiar with them ---

Generally familiar? --- ---but I don’t provide advice about them.

No. Well, tell me if the questions I’m about to embark upon are at any stage not matters that you wish to comment upon. For the subject, [indistinct] agree that the ’97 strategic plan placed a higher hurdle in front of development proponents in terms of the matters you’ve referred to: visual amenity, complement clarity, appearance of development, tree retention, and sensitive development, than the ’88 strategic plan? --- There are some different emphases I believe, yes.

Different emphases made it – put higher hurdles in front of prospective purchasers, surely? --- I think the hurdles were always there, because they go back to those physical or visual constraints that I was talking about and that Mr Chenoweth and I agreed on.

What --- ? --- The constraints are always there because they go to what’s on the land and what’s around it. Whether the planning scheme was tightened up or more restrictive in the ’97 case of the strategic plan I don’t know, but – and I can’t give evidence on that or advice on that, and I wouldn’t – I’d be recommending a purchaser talk to a town planner.

I understand that, but I want to understand your approach so that his Honour can appreciate ---

--- where you're coming from. I'm going to ask you this: what was -- you said that there was a different emphasis contained in the '97 strategic plan? --- Well different words were used, yes.

What was ... emphasised? --- I think that one of the things was emphasised more probably were the visual values associated with the Noosa River and Weyba Creek estuary. Even though that was mentioned in the '88 strategic plan, it was probably more -- there was more emphasis on it in the '97 scheme, but again that's, you know, at my reading, and I'm certainly not an expert in planning schemes, but I think that, as I said, the network study was the thing that provided the -- it provided those plans that would allow consultants and prospective purchasers to better understand the words.

Just bear with me Mr Hassall. Did you have regard at all to part B of the '88 strategic plan? --- Yes.

Did you compare how F treats the subjects like for example, or the estuary -- what's now called Noosa Sanctuary -- with other tourist facility growth area sites? --- No, no I haven't.

In terms of area A, you were inviting a prospective purchaser, and in the before scenario, you were aware of the zoning of that area? --- Yes.

And you were aware of the strategic plan designation? --- Yes.

You're aware that it has the overlying tourist ... growth area designation on it? --- At part of the site, yes.

Part of the site, and I'm aware that part B of the strategic plan contemplates development of this particular site in this specific light? --- Yes.

And we know that you've agreed with Mr Chenoweth that apart from standards of environmental sensitivity and integration expected for a resort there were few visual amenity constraints applied to the type of development which was encouraged by the '88 strategic plan? --- Well, that's right. There were few, but not none. I suppose I should say the main one being the protection of views from -- water views into vegetated areas, and on that eastern -- northern part of the site.

And in the before you'd advise the prospective purchaser with the mercurial concept it was appropriate from a visual amenity [indistinct]? --- Yes.

Now, in the after, area A we have the '97 strategic plan supported by the '95 study? --- Yes. In the after case we have the '97 strategic plan, yes.

And it is replete, isn't it, with provisions talking about integration with landscape, the whole gamut of issues that you've raised as first principles issues ---? --- Yes."

[222] I am satisfied that from a visual amenity point of view there was no significant change in the planning arrangements on the relevant date. Pursuing Mr Job's hurdling analogy, an adept hurdler/developer in this respect could have confronted higher hurdles, if any there were, and achieved after the relevant date what could have been achieved before; conversely, the Council had under the 1988 Strategic Plan prior to the relevant date weapons available to it to limit the developer to what the 1997 strategic plan might have accepted.

[223] The visual amenity experts appeared to be diverging in reporting to the court separately and in their oral evidence; however, in the end the differences were more apparent than real. Mr Chenoweth's approach remained that:

"All right. In terms of the before case, what do you mean by the reference to the standards of environmental sensitivity and integration expected in a premier tourist resort area in an attractive natural setting?---Well, in that sense Noosa has always been a bit different from the – the sort of place where you would develop multistorey buildings just with views of the ocean, like Mooloolaba or Surfers Paradise. There's always been an expectation shared by the developers and by the – the builders that tourists are attracted to this area because there's – there's an element of – of bush and integration with the – yeah. You develop more sensitively in – in this area, so I would say – I would've advised a – a purchaser that council doesn't have a lot of things in the planning scheme that would make you do this, but this is Noosa and you should develop in this sensitive matter." (T12-27)

[224] Some particular aspects of difference should be mentioned. First, he formed a different view about development possible after the relevant date in Area A:

"when the first two blocks of units were built in Serenity Close, that being Macquarie Lodge and Petrie Mansions on lots 1 and 2, they were built fairly close to the top of the steep dune overlooking – steep slope overlooking Noosa Inlet. It – but when the '97 strategic plan came in, the – that line was moved back significantly, recognising the sensitivity of – visual sensitivity, amongst other things, of the – that slope and council, clearly, to my mind, intended that future buildings on the other lots along Serenity Close would be moved further back or – and I think that is reflected, also, in the – the various lines adopted on the architect's joint report, as to where you could put buildings along the top of that – how close to the top of that slope you could put new buildings, so that's the – the – the main issue, that if you – if, for instance, a developer then chose to move beyond that line to try to put buildings closer to Noosa Inlet, closer to the top of that slope, they would've been required to demonstrate a much greater degree of screening and integration that, I feel,

would've interfered with views outwards, especially from the lower floors of any building there." (T12.29).

- [225] Next, Mr Chenoweth focused on what he described as change from the 1988 strategic plan, which on its cover described Noosa Shire as a "land of opportunity" to the 1997 one with its "emphasis throughout on integration of development with the Shire's landform and landscape as a core value". (T12-33). Warming to the theme, he said at T12-34:

"in the 97 strategic plan, this theme of integration is woven right throughout although it certainly has got a – it's most – strongest expression under the development principles – strategic plan development principles section 26 starting page 162; it's a fundamental principle throughout the whole strategic plan, that integration of development principle 26.2 with the natural landscape is what they're seeking. Oh, you're in the new one, sorry?---In the 97 strategic plan, your Honour. One of the documents that guided the 97 strategic plan and strongly influences my opinion is the – the network study---"

and linking the topics at T12-37:

"What I'm – I'm – I'm saying is that the boundary – the edge of the land where the – you could've built units - - -

Yeah?--- - - - on Serenity Close changed quite significantly from 1988 to 1997 strategic plan. The – the – that line moved back and what I would've advised a prudent purchaser is, at the time, that council has done that because they've based it on this network study and it's not just a whim. It's based on – on something quite thorough and you can challenge it if you like, but you're going to have a lot of – it's going to be difficult.

MR JOB: I tender that document ...

EXHIBIT #107 ADMITTED AND MARKED"

- [226] Mr Chenoweth's cross-examination included the following at T12-46:
- "The orange coloured area, as you've described it, in SKO5 that appears at page 22 of Dr Hassall's report – the orange colour, be it in area A or area B, identified the area which you and he considered appropriate for development, having regard to the visual amenity issues which you discussed in the joint report?---Yes.
- And that too applies in either the before or after situation?---Yes.
- The – it was your opinion when reaching the agreement stated in the joint report that the 1988 planning scheme provided only few visual constraints, or that under the 1988 strategic plan only few visual constraints applied to development encouraged by that strategic plan?---That's correct. Yes. I agree that there are areas that are visually sensitive and a good developer and a good designer, bearing in mind what the expectation of the community and the tourists would want – yeah. They should design to those visual amenity constraints, but I can't find a lot in the '88 strategic plan that required them to do that."

At T12-47:

"I think that you can't look at those things totally in – in a vacuum.

Yes?---When talking about the visual amenity of an area, you need to know about whether what is encouraged is a rural development or a tourist development.

Yes?---That's – if we're talking of four storeys or, you know, we're talking units of some kind.

Because ultimately, although it may be correct that a proper – a complete assessment of the visual amenity implications of the proposed development of the site requires consideration of planning scheme provisions there is, in fact, a clearly physical aspect to visual amenity issues that don't depend on planning scheme provisions?---

Yes. And – and I think that both Dr Hassall and myself were taking the – our responsibility as – as expert advisers to a hypothetical prudent purchaser in that light, that we were giving advice as if we were saying what would be the best, most sensitive form of development that – that would be appropriate here, given its constraints.

And in that context, then, taking into account all the matters we have addressed, the advice that both you and he agreed would be given to the hypothetical prudent purchaser is that in the before – that is, in both the before and the after situations, development in the vegetated dune areas A and B would be required to – or should retain the wooded ridge line - - -?---

Yes. - - - to which you've referred earlier, especially in places where it formed a skyline viewed from waterways and other vantage points?---

Yes. And, secondly, that whether it be in the before or the after case, that it would [be] necessary for development in those areas to demonstrate visual integration of buildings with the vegetated slopes and areas visible from external views?---

Yes. And, furthermore, that that would be achieved, be it in the before or the after case, by the retention of a proportion of trees?---

Yes. And, furthermore, that in the before as well as the after case, that object would be achieved by restricting building heights to below the prevailing tree height of 15 to 20 metres?---

Yes. And that, furthermore, that object would be achieved by what you described as sensitive development, which avoided visual scarring of hillsides and by appropriate controls on designs, roof forms, material, colours and the like?---

Yes. Now, I have been reading that, as you're probably aware, or framing those propositions directly from the wording of paragraph 2.5 of the joint report?---

Yes. The point of emphasis is or the point of – to note is that none of the figures in the joint report, in any way, distinguished between the situation as it would apply in the before case or the after case?---

That's correct. And Mr – Dr Hassall's drawing figure SKO5 which is included in his individual report, similarly, draws no distinction in the before or after case?---

That's correct. That is, as between the before and after case?---

Yes. And you agree with that?---

So bearing those points in mind and bearing in mind your primary position that save for a couple of points addressed in the architect's joint reports and to which you refer – save for those, your advice would not change in the before and after - - -?---No. My – my advice to a – a developer about where – how – where and to what extent they could develop buildings, to what height and what level of tree retention would be a sensitive response to the constraints of the site would be exactly the same.

Okay. And with respect to the Iluka development, could you turn to your report at page 3. That's your individual report, exhibit 35?---Yes.

Mr Chenoweth, you make the point that Iluka is a four storey building?---Yes. And that's the type of building or the height of building that you and Dr Hassall considered appropriate - - -?---Yes. - - - on the area A dune on which Iluka is constructed?---Yes.

And it was appropriate because a four storey building was still beneath the canopy height of trees that would form the ridge line or the skyline?---Yes.

Yes?---Notwithstanding that for Iluka there is that gap in the trees that makes it visible, but that's something that, I understand, is being addressed by tree planting."

And at T12-51, referring to plan SK-085 which Dr Hassall prepared for his court report exhibit 4 to illustrate the agreement reached about developable areas:

"Now, at paragraph 2.8, you – in your report, you say that the Iluka development illustrates that council would've approved four storey units on the residential high density area A under the '97 strategic plan and they could've been marketed as having views north and north-east, provided height and siting were related to the retention of a few key trees?---Yes.

That is, in effect, a condensed version of what you and Dr Hassall said in the joint report at paragraph 2.5, isn't it?---Yes.

And that really emphasises that, at least with respect to area A, as you see it, any point of difference in the after case compared to the before is really a subtle matter of emphasis, a subtle point of degree, rather than, if I can use a colloquial term, a sea change?---That's correct, except with respect to the line – that I consider that everything we've talked about could be achieved by having buildings aligned, more or less, with the existing buildings of Macquarie Lodge and Petrie Mansions, but the '97 plan said that's not good enough. You've got to move them back even further and that's where I – I have objections between the two planning schemes.

All right. Now, could you point out to us where you mentioned that in the joint

report?---I didn't mention that in the joint report. It came out of my closer looking at what the architect's assumptions were.

I see?---We didn't – that wasn't really obvious from our comparing figure – what's now become figure SK5.

Yes?---We – we had agreed that that yellow area was off limits to development.

This is - - -?---And, in fact - - -

This is Dr Hassall's SKO5?---That's right.

Yes?---And, in fact, we had – we had marked a band right along there, in crosshatching, that was wider than the yellow area and said no development there, but it's my understanding that when the '97 strategic plan came in, they – they had moved that line further back.

All right. Now, that's, at least, the basis on which you've proceeded here?---Yes." (T12-51).

- [227] In reference to the buildings now constructed in Area A, Mr Chenoweth said at T12-54:

"So it doesn't appear that any of those buildings constructed either before or after the '97 strategic plan are on a different alignment?---No. I would agree with that.

And - - -?---Irrespective of the fact that those three buildings are well beyond the line designated on the '97 strategic plan.

Well, taking it a little further, all of those buildings – all five of them are constructed – rather, let me put it this way. All five of those buildings are constructed within the area either coloured red or coloured orange in SKO5, aren't they?---Yes. Yes. They conform to our constraints or the - - -

Well, that's the next point. Each of those buildings has been constructed in conformity with the opinions that you and Dr Hassall expressed both in the text of the joint report and also in the figure culminating most clearly in the figure SKO5?---Yes.

And so at any material time you, as an expert in matters of visual amenity, at any material time before or after would have advised that a satisfactory outcome could be achieved by the development of the buildings such as those that have actually been constructed, provided they were constructed, relevantly, within the red and/or orange sections or areas of SKO5?---I would have advised that in our area – in my area of expertise you could achieve the – those outcomes by designing those buildings in that location. But I would have said that the '97 strategic plan requires you to move your buildings even further back away, and that's backed up by all the studies they've done in the network study. So you're going to have a real problem getting those buildings to come forward to what I agree – what I consider to be reasonable constraints line."

- [228] As appears elsewhere, it has been demonstrated to my satisfaction that the line was not moved back as surmised, that Mr Chenoweth, not alone in this respect, fell victim to a misleading aspect of exhibit 4.

- [229] Mr Gibson's cross-examination turned to Area B in the before case. At T12-59:

"And that's – we've spent quite some time looking at his – that is, Dr Hassall's SKO5 in relation to area A. But of course, exactly the same principles and observations apply with respect to the red and orange-coloured areas by Banksia Avenue?---Yes.

Yeah. And the development depicted in the McKerrell plans for Banksia Avenue, as perhaps appears more clearly from the elevation than from the plans themselves, step along and with the slope of the hillside as you move away from the site frontage in Banksia Avenue, don't they?---Yes.

And perhaps it's sufficient to say that they do, in fact, step along and with the slope of the hillside. That's the point of the – demonstrated by the elevation?---Yes.

Now, you mentioned in your evidence-in-chief that apart from the issue of height, there is a question of bulk and scale in relation to – was in the context of those buildings by Banksia Avenue. Do you recall that?---Well, I recall saying that I couldn't see anything in the '88 strategic plan in terms of complementarity and compatibility that referred to bulk and scale, but – yes. I can certainly agree that in terms of bulk and scale, a building – buildings of this nature are different from a residential house.

Yes. And you made the comment in evidence-in-chief that a house would have a different bulk and scale to, for example, a duplex or a block of units?---Yes. Or, indeed, the Banksia Terraces that are there.”

“Banksia Terraces” constitutes the dramatic disruption of the pattern of established detached residences east of Banksia Avenue as one moves south.

[230] Mr Chenoweth was not troubled by the prospect of a line of six 40-metre buildings parallel to Banksia Avenue which would appear as a single linear structure some 240 metres long except to an observer opposite the gaps between buildings, given the screening by vegetation proposed to be established onsite and by existing dense vegetation on the road reserve. (Accepting that the barracks-like approach adopted in the architects' block and stacking exercise should not be taken as an indicator of the final development, it is difficult to imagine that the calculated yield could have been achieved without something similar in effect.) This was a new difference with Dr Hassall whose concern was not with height, so much as with bulk and scale (T12-69), if regard were had to the sympathy with the established two storey detached residential buildings across Banksia Avenue. I think Dr Hassall is correct in identifying restrictions from the 1988 strategic plan by reference to new development being sympathetic to what already exists. Reference might be made to:

- the last sentence of 2(2);
- (3) and (5)(a),(b) and (e);
- 4 – heading and (5), also (6)(a), (d) and (h);
- 7 generally.

[231] The experts were agreed that there were no visual amenity concerns generated by the proposal for boardwalk villas; however, wearing his ecologist hat, Dr Hassall considered (as did other experts called by the Council, whose views are difficult to reject) that they would not have gained approval in the before case. His evidence in the latter regard is summarised at T12-84:

“And you state that you understand that that area, apart from containing significant wetland values, is constrained by flooding and acid sulphate soils, peat, geotechnical and cost unknowns. Under those cumulative caveats you say the writer would've advised a

prudent purchaser that no development in this area would be likely to be approved by the council. Dealing in particular with the wetland values to that area?---Yes.

First, could you tell us about that?---Well, they're – they're an integral part of the intact functioning wetland ecosystem, so they have the same values as any other part of that ecosystem. They – you know, they contribute according to the proportion of their area, I suppose, but we – you know, we – we – I just think that, generally, every part of the wetland is equally valuable, so, you know, if you start to push out into the wetland... the result of that will be an increase in the area of impacts and that would be undesirable.

In confining yourself to impacts on wetland values - - -?---Yes.

- - - conservation values, what advice would you have given a prudent purchaser as at September 1997 as to the prospects of obtaining approval to develop the boardwalk villa component of the development?---Well, in view of my opinion about the – the wetland values, I would ... caution a ... prudent purchaser that they may well attempt to emulate the development to the south, but that, in view of the cumulative knowledge in ecology that was known at that time and the understanding of wetland values, I wouldn't – wouldn't tell them that they would have too many chances of success.

Now, of course, as at the relevant date the Noosa Sanctuary development had not been developed?---No.

It'd been approved by - - -?---Yes.

- - - council. Is that of any consequence to you in your point of view of your discipline or not?---I don't believe so.

All right. Now, at paragraph 1.10 of your report, at page 6 you say that – this is the last sentence of that page – that, in your opinion, not only would the above areas – and that was the wetland, but also the dune – the unstable dune areas of the land - - -?---Yes.

- - - be severely constrained for development, but a physical buffer of some distance would also be required to protect against edge [effects]?---Yes.

Now, is this the buffer that we've heard discussed in the context of the DPI fish management policy in 1996?---Well, that – that – that particular buffer was to fish habitat.

Yes?---And so the – the functions of that buffer were specific to those circumstances. In the case of the wet – the freshwater wetland and the unstable dune, the circumstances are somewhat different. I think, from – from memory, Dr Thorogood listed some of the functions that were required of a buffer. In this case, I would add, probably, the main thing – one of the main things I would add is that we need to manage the invasion of species that don't belong there, both plants as weeds and – and unwanted fauna as well. I believe that, also, in this case, your Honour, the nature of these lowland – coastal lowland vegetation types is that they all provide reservoirs for each other in the sense that if there is a – is a – a natural disaster in the wetland, if there's a – a flood that comes up and drowns everything, nature relies on the fact that there's a reservoir in the vegetation above the flood that can move out or provide proper gills

and help to naturally re-establish what was destroyed. So I see, in this case, we've got natural, intact vegetation there and we would need – as part of our buffer design, we would need to retain that as reservoirs for – for possible future reinstatement.”

- [232] There is an issue whether the 1995-96 Network Study should be referred to at all in determining what was possible in the “before” case which, the appellant would have it, requires reference to the 1988 Strategic Plan without any embellishment; the appellant (like Mr Chenoweth in the end) appeared to say that exhibit 107 was part and part and parcel of the 1997 Strategic Plan, and need not be taken into account in working out the “before” possibilities. Thus, Dr Hassall was cross-examined by Mr Job to this effect at T13-20:

“Well, we'll call it 96. We'll know what we're talking about?---Yes.

Why do you refer to it?---I think he – what the planning the network planning study did was provide the public with an indication – a better indication, if you like, a better guide to the significant natural features of the shire that are mentioned in the planning scheme and the '88 strategic plan. With this site, it's particularly in relation to the waterways, the lake – the way of the creek and the associated Noosa River estuary and associated vegetation and the requirement to protect views from the waterway to vegetated parts of the waterway. And, in giving that – what's the significance of that guide, giving a better indication or guide?---Well, I think the – the interest – well, the – the – the most informative parts of it are the maps at the end, that – that bring people's attention that they can, rather than reading descriptions – raw descriptions – they can relate what's in the – in the report to particular parts of the shire, including their own land.

In terms of you advising a prospective purchaser, what reliance would you – what – how would you use the '96 study?---I – I – well, I would point to the maps and say that this particular site has been mapped as containing certain values to do with waterways and riparian vegetation and that, if you were going to do a development application, it's likely that council would take those values into account in its assessment.

Would you give that advice to the prospective purchaser if the '96 study did not exist?---Well, I think there are – yes, there are indications, in a more generic sense, both in the planning scheme and the '88 strat plan, where there are direct references to those kinds of things. So one would have broad indications from the written word that were subsequently expanded on or clarified by the maps in the network study.

It was quite a comprehensive study, particularly for its time, wasn't it?---Yes, I think so.

And it did reflect a more stringent approach to visual amenity and character

considerations in the shire?---It's a much more systematic approach, as I say, that provides land owners with a lot more information.

It was more stringent, wasn't it?---I don't think it had the force of stringency in terms of being part of the planning scheme, it was a planning study, certainly - - -

Yes?---But it didn't have – it alerted people if you like to provisions that were already there, I think, in the '88 strategic plan and the general provisions of the planning scheme, but weren't perhaps made specific with respect to particular sites. So, it's certainly alerted people a little more.

So it provides specificity I take it that didn't otherwise exist?---Yes.

And that included in particular the subject cited?---Yes.

It did represent in my considered approach to visual amenity and character considerations of the shire, didn't it?---Than what, sorry?

Than previously existed?---More systematic, yes.

More considered?---More considered.

And it was a planning study which was prepared to inform the '97 strategic plan?---Yes.

That was its purpose?---Yes, I believe so.

The principal author was Paul Summers?---Yes.

Who was he?---I think he was the shire planner at the time.

And you applied the study I assume from reading the report – in fact, the joint report as well I think – that you had applied the study to informing the prospective purchaser in both the before and after case?---Yes.

In terms of area A of the northern section?---Yes.

You've expressed the opinion that the development of that area would be the same in the before and after case?---Yes.”

Reference to the study in the way described by Dr Hassall is permissible: the study may have come about in compliance with s 2.7 of the *PEA* in the course of preparation of a new Strategic Plan but it has an independent and useful existence by way of identifying facts and circumstances of the Shire environment which had to be investigated and understood for the purposes of applying the 1988 Strategic Plan.

[233] The visual amenity experts, like their counterparts in some other fields, apparently revisited some opinions earlier given. Thus Mr Chenoweth in his court report, Exhibit 35 (August 2013) says:

“2.8 I consider that this illustrates that Council would have approved 4-storey units on the RH/Area A under the 97SP, and the units could have been marketed as having views north and north-east, provided the building height and siting were related to the retention of a few key trees ie. the views would not be panoramic, but would be available only between the canopies of retained trees. I would have advised a prospective purchaser that any proposed development would probably have been required to demonstrate this degree of sensitive visual integration under the 97SP, but not under the 88SP.”

I am not sure whether the suggestion is that a potential purchaser would have been told in the before case not to worry about trees obstructing views, or whether Mr Chenoweth pictures himself advising in the after case to the effect that the purchaser should worry now, although perhaps he need not have worried or worried so much had he come along before September 1997. One might have thought the

same opinion was expressed by use of the same words in 2.5 of Exhibit 20 about the effect of the 1988 Strategic Plan.

- [234] The switch in focus from views onto the site from outside to views obtainable from the site after redevelopment was a response to opinions emerging in the valuers' joint report, in particular a comment by the Council's valuer, Mr Slater that "the existing trees would impede views in both before and after situations" (Exhibit 35, 2.4). He in his turn had been responding to Mr Brett's opinion that market value of the site would be reduced if views outwards became limited by vegetation required to be retained. Mr Chenoweth's conclusion fails to convince in its distinguishing between Council's assumed expectations before and after the relevant date and in the effect on views outwards of tree retention requirements. It was:

3 Conclusion

- 3.1 Although there were few specific references to visual amenity constraints applicable to the subject land in either the 88SP (the 'Before' case) or the 97SP (the 'After' case), I would have advised a hypothetical prospective purchaser that the standards expected by Council and the community with respect to sensitive integration of built form into vegetated dune areas were higher after the 97SP. While 4-storey buildings would still have been appropriate (in those areas where the 97SP encouraged units), the extent of tree retention required may have limited views outwards, in order to achieve these higher standards of visual integration."

Summarising, the visual amenity evidence is largely neutral. It gives the Council's before case no support for an argument that development would not have been allowed outside Areas A and B (which the Council has otherwise established), but it supports what the Council, relying on Mr Robinson and Mr Venn, argues about Area A and Area B.

Traffic matters

- [235] Mr Holland, engaged by the appellant, and Mr Beard, engaged by the Council, prepared joint reports (in Exhibit 21) and individual reports (Exhibit 36 and 48). They are traffic consultants who used to operate in partnership. As things turned out, it fell to Mr Beard to enjoy the patronage of Noosa Shire Council from some time in the early 90s; in this Mr Holland acquiesced, giving Mr Beard something of an advantage in fairly detailed, "inside" knowledge of traffic-related issues in Noosa. The traffic engineers agreed that, insofar as roadworks external to the site were concerned, the development potential of the northern part was not changed in consequence of the 1997 strategic plan coming into effect.
- [236] They agreed that for any major development on the southern part of the site (Area B) access to the site would have required a new roundabout at the intersection of Banksia Avenue and Allambi Terrace with Noosa Drive. Uncertainty as to development requirements arises from the transfer of planning responsibility for Noosa Drive from State control to Council control, from the road being "de-mained" – to adopt the jargon. Heads of agreement apparently came into effect

then which relieved the State department from involvement in planning decisions once the road was no longer “State-controlled”. While Noosa Drive retained that character, the well-known restrictions limiting access to State-controlled roads would have been a clear difficulty for a developer. The relevant Department had considered the matter by the mid-1990s, and indicated a requirement that Noosa Drive (part of Cooroy-Noosa Road) be widened to four lanes with a two-lane roundabout to be constructed by a developer of the site. These requirements were standard for State-controlled roads of the kind encountered here. However, they were at odds with the Council’s intentions for Noosa.

- [237] The Council’s traffic philosophy was very different. It is encapsulated in the executive summary of a report of July 1996 entitled “Transport & Road Networking in Noosa Shire” of which Mr Beard was one of three authors – Exhibit 117:

“Standards of service and a road design philosophy appropriate for Noosa Shire are defined. These are based primarily on maintaining a network which uses roundabouts, rather than signalised intersections and two-lane two-way roads, rather than multi-lane roads. Based on these and other parameters, the study finds that the population growth forecasts to 2011 for the coastal urban area of the Shire (around 45,000 persons) will generate traffic which would cause significant congestion and delays in excess of the desirable limits described in the study. The study recommends that in order to limit congestion and delays to only marginally worse than current levels, population within the coastal urban area of the Shire should not exceed 40,000 persons in 2011. The Planning Scheme capacity for the coastal area is currently 53,600 persons.”

- [238] Further on one reads:

“5.2.4 Maintenance of a predominantly two-way two-lane road network

Much of the existing major road network is developed as essentially two-way two-lane roads. Road reservation widths vary.

Network capacities are primarily defined by intersection capacities. The desirable maximum traffic flow on two-way two-lane road is generally regarded as 16000 to 20000 vehicles per day, corresponding to Level of Service D. A two-lane circulating roundabout would be required at the junction of two roads each carrying 16000 vehicles per day. Both routes could however, be primarily configured as two-way two-lane roads, except at the intersection approaches. Two-way two-lane roads generally do not present overtaking opportunities in urban areas and operating speeds are lower and more consistent as a consequence.

Four lane roads have greater impact on visual and noise amenity, present greater difficulties for pedestrians and cyclists and generally provide for higher operating speeds, as well as requiring wider reservations. They do not generally provide for higher system

capacities, because network capacity is defined by major intersection capacities.

Currently, the only route in the Shire which is planned as a continuous four-lane divided route is the Eenie Creek Arterial, where higher operating speeds will be desirable in attracting more traffic from other parallel routes on which higher traffic volumes would have greater negative impact.

Apart from the Eenie Creek Arterial, road planning in all parts of the Shire has been primarily based on two-lane two-way roads. Given the traffic characteristics which are sought for the Shire, this approach should be maintained.”

[239] The Eenie Creek Arterial linking Eumundi Road in the west to David Low Way in the east did not exist. It was to provide a bypass skirting Noosa Heads and Noosa Junction to the south and absolutely vital to realisation of the two-lanes-only philosophy. Exhibit 117 envisages completion of the new Arterial in a leisurely way, perhaps commencing from the western end in 1998 but not crossing Weyba Creek (crucial if there was to be any impact upon Noosa Road in the vicinity of the site) until 2000. In the event many years were to pass before the Arterial was achieved. Environmental problems were anticipated at the eastern end, Mr Beard says, and eventuated. The Council lacked necessary funds to build the road. With the new Arterial in place, the likelihood was that only two-lane roads and single roundabouts would be required, if the decision were the Council’s. If it were the Department’s, the decision would have gone the other way. I agree with Mr Beard, responding to Mr Job’s suggestions that if the Department were intransigent, a dissatisfied developer could appeal to the court, that the prospects of success here of such an appeal would be negligible, in part given the appellant’s own consultants’ advising in 1994 that a two-lane roundabout was appropriate.

[240] The important question for the moment is what advice a traffic engineering consultant would have given in September 1997, before Eenie Creek Road was developed as a State-controlled road, with State Government money. An indication of the State thinking at the time is the early 1990s Integrated Regional Transport Plan for South-East Queensland covering a 20 or 25 year horizon to 2011, Exhibit 118. The Eenie Creek Road project was designated SC11 (concept: “improve local movements”) and related Key Actions KA8.11h with Main Roads the lead agency. While there is a table allocating 1997-98 as indicative start year and a duration of one year, said to impart some certainty, any impression along those lines dissolves when the icon in the left hand column of the relevant table is deconstructed: it is not “investment” (funding), but rather “investigation and studies”. Key Actions 8.11 are described as:

“Undertake transport investigations of capacity road options from the maps of strategic transport opportunities, either as individual studies or as part of integrated local transport plans.”

That is all that it could have been hoped might start in the first year.

[241] The appellant’s traffic engineer advanced what he called the “Holland hypothesis” that by the relevant date Main Roads (a title which may conveniently be taken to

refer to the relevant Department, however actually named from time to time) had lost interest in Noosa Road in view of the anticipated “de-maining” but was, through inertia or laziness, continuing to trot out the longstanding requirements; these, he suggested, would have been regarded as very much subject to negotiation around September 1997.

[242] Mr Beard described the hypothesis as “wishful thinking”. The pair appeared to agree that much would depend on which entity made the decision. Mr Holland’s opinion was that de-maining would have been anticipated by the relevant date, in view of what happened in July the following year.

[243] Mr Holland suggested that concerned persons such as a traffic engineer engaged by a potential purchaser to give advice in these matters would know or be able to find out, from strategic transport maps and a traffic consultant, that de-maining of Noosa Road, with consequences assumed to be favourable to a developer of the site from the point of view of reducing costs, was envisaged. It appeared to have some support from s 7.1.1 of Exhibit 117 in the statement that:

“It is possible that some State controlled roads may become the responsibility of Noosa Council in the future, though it is not expected that the network or its functions would change significantly as a result.”

This report is dated July 1996. It was pointed out, however, that this statement falls within Part 7 of the Review, Traffic Planning – Rural Region in which Table 7.1 lists those rural roads which were State-controlled, including Cooroy-Noosa Road (status: District). Part 7 was not concerned with traffic planning in the coastal region, in which the site is located, the equivalent issues for Noosa being dealt with in Part 6. One also finds in mapping and in words that Cooroy-Noosa Road in Part 7 was limited to that section of it west of Tewantin.

[244] Mr Beard, asked to say when he became aware of the possibility of de-maining of Noosa Road, said (and I accept) that he could not recall whether it would have been before or after September 1997. He regarded July 1998, when something actually happened, as the more relevant date; much remained to be worked out, presumably in respect of compensation to the Council in respect of the heavy burden of maintenance it was asked to assume: the relevant de-maining agreement was said to have been dated in the year 2000.

[245] After a day and a-half’s evidence from the traffic consultants, it remains entirely mysterious what was known or could have been ascertained as at the relevant date. In those circumstances, I think that the appellant cannot be taken to have established that the prospect of de-maining was a live one.

[246] Mr Holland and Mr Beard appeared to be in agreement that Main Roads would probably have been receptive to staging of roadworks required by them, perhaps in tandem with staging of implementation of development on the site and concomitant increasing demand on the road. It was common ground that this offered a developer prospects of a more favourable outcome. It might happen that development allocated to some later stage(s) was not required or became less costly, perhaps because contributions would be exacted from another developer. On the other hand,

Mr Beard issued a salutary reminder that work done in stages, rather than all at once, may be done more expensively in the final result.

- [247] A minor matter that emerged during the traffic evidence was that, if Main Roads were the decision-maker, a right angle triangle with a base of about 50m and a height of about 135m would probably have been required dedicated on the south-eastern corner of the site to accommodate road widening to four lanes. Although this was recognised as a building constraint by the architects, in Mr McKerrell's final "before" case buildings were depicted on this area. The evidence showed that across the southern boundary of the site, buildings have been constructed at Noosa Sanctuary on the southern extension of this triangular area which was equally necessary to the widening project. The investigation of this aspect established that the condition insisted upon by Main Roads of no building on the Noosa Sanctuary section was never abandoned by the Department. Mr Holland said that in his experience some clear restriction in words would normally have been found. However, I am satisfied that the Noosa Sanctuary approval constituted by the court order sufficiently provides for protection of the Noosa Sanctuary section by what is shown in the plan forming part of the order and also by certain provisions in the Environment Impact Statement incorporated by reference in the court's order. What happened in that case appears to give the lie to the suggestion that a requirement such as provision of curb and channelling along Noosa Road signified abandoning by the authority of any prospect of resumption: there appeared to be provision made for a 2m-wide concrete path to be constructed, which might have been wasted had a resumption occurred.

The engineers

- [248] Mr Gould and Dr Johnson occupied the witness box for three full days. Yet the differences between them were minor, essentially of emphasis. From the engineering standpoint, the coming into effect of the 1997 Strategic Plan made no difference at all. The main disagreement concerned the boardwalk villas which Dr Johnson thought, for environmental reasons rather than engineering ones, would not have been approved either after or before (i.e. with or without) the coming of the 1997 Strategic Plan: If the villas could have been approved under the 1988 Strategic Plan in the conditions pertaining in 1997, they would have won approval under the replacement Strategic Plan. It is convenient to note here that there never have been any concerns about the site being provided with all appropriate services such as water, sewerage and power.
- [249] Neither of the engineers thought that replication of the 1988 approval of R221, while of a proposal achievable in engineering terms, was a realistic prospect by 1997. Their best "before" case was Mr McKerrell's of August 2012, limiting development to elevated areas bordering the wetland, with Mr Gould alone hopeful that the boardwalk villas, by their being on platforms raised above the wetland, could have won approval absent the 1997 Strategic Plan. He found "encouragement in the Council's enthusiasm for R221 in November 1988, as shown in the Council's planning report, Exhibit 143, reflected in Exhibit 9, while Dr Johnson was accused of focusing instead on the more sceptical predecessor, Exhibit 58, reflected in Exhibit 8.
- [250] Exhibit 8, the original development approval conditions provided:

“11.0 Canal

- 11.1 Approval is to be obtained under the Canals Act and the associated regulations for the proposal canal. Provisional approval from the Department of Harbours and Marine for the canal structure is to be obtained, prior to Council making application to the Minister for gazettal of the rezoning.
- 11.2 A subdivision plan indicating metes and bounds of the canal, and the surrounding lands, and other pertinent documents required under Regulation 7 of the Canals Act is to be submitted to Council to enable approval in principle of such subdivisions, to be forwarded to the Department of Harbours & Marine.
- 11.3 The Developer shall remain responsible for the maintenance of the canal structure and the dredging thereof, and shall abide by the conditions imposed by the relevant statutory authorities in this regard.
- 11.4 Approval of jetties or floating pontoons will require separate approval of Council. A single application, should plans and the design standards be available for all of the proposed structures, will be considered by Council. The Developer’s Engineer is to certify no load will be imposed by such structures on the intended retaining walls.”

[251] A subsequent Shire Planner’s report to the Development and Planning Committee contains the following:

“There have been a number of developments associated with the proposed canal and the circumstances have altered on a number of occasions. Currently the developer is not sure whether the proposal will include a canal or not, however, it is obviously desirable from a development point of view to have such a facility available as a marketing point. It is probable that the canal will proceed, however, the canal construction is contingent upon the flooding situation and has been geared to the submission of a flood study which justifies the provision of the canal. Again conditions have been drafted which permit the canal to be constructed, if proven feasible.

The developer’s consultants and the Department of Local Government have now advised that a specific approval under the Canals Act is not required from the Department of Harbours and Marine, if the development proceeds under the Integrated Resort Development Legislation. Figure 4.1 features the proposed new Precinct boundaries. This aspect overcomes the difficulty in co-ordinating the fixing of the canals position in conjunction with an application for rezoning and obviates the need for preliminary approval from the Department of Harbours and Marine, prior to the rezoning being gazetted. Broad conditions have been recommended which provide for the developer to submit any necessary applications

for approval to any statutory authorities in regard to the canal. The conditions also require that the developer comply with the requirements of any statutory authority including Council, with respect to the canal. The nature of the condition has been discussed with officers of the Department of Local Government and is believed to be appropriate.”

- [252] Exhibit 9 (16 November 1988) proposing revised provisions the Council indicated it would be prepared to have incorporated in a consent order:

“10.0 CANAL

- 10.1 If a canal is to be included within the proposed development all necessary approvals are to be obtained from statutory authorities, including Council. Where construction works associated with the canal involve the placement of extracted materials on areas of the site below R.L. 2.0, any such filling works shall only be undertaken in accordance with:-

10.1.1 Condition 9.2.1; or

10.1.2 An independent flood study, and any requirements contained therein, submitted to and approved by the Department of Local Government, the Queensland Water Resources Commission and Council.

If the canal is constructed the developer is required to comply with all relevant statutory authority controls, including the Canals Act, if relevant.

- 10.2 In lieu of Council requiring the developer to remain responsible for the maintenance of the canal, the developer is to note that Council will create a ‘benefitted area’ for rating purposes over land included within the Settlers Cove Resort Development, to raise funds for such maintenance.
- 10.3 Approval of jetties or floating pontoons will require separate approval of Council. A single application, should plans and the design standards be available for all of the proposed structures, will be considered by Council. The Developer’s Engineer is to certify that any load imposed by such structures on the intended retaining walls is within the design loading for such walls.”

- [253] The Council’s concern that they not be lumbered with responsibility for a canal is patent. I do not detect any increasing level of enthusiasm for the canal during the year or any relaxation of requirements.

- [254] I think Dr Johnson is correct in rejecting the idea that the Noosa Sanctuary approval of 1997 would provide comfort for proponents of development on the wetland even in the face of encouragement for such developments as late as two years before “the relevant date” expressed in the circle of the Council and its consultants in what the

appellant argued was a fresh assessment of the merits of the proposal and its impacts (including environmental) given that the expiry of the rezoning deed meant that any development at Settlers Cove required a new consent from the Council.

[255] It became the engineers' lot to provide reactions to a whole series of documents in various categories either tending to support R221 or elements of it affecting the wetland or tending to raise obstacles, effectively, from the appellant's viewpoint, as actual precedents specific to the site or as precedents from next door.

[256] Dr Johnson was unmoved; he said in effect that the continuing proliferation of new considerations for assessment of development on the site during the 1990s went on unabated through 1995 and 1996, even disregarding the dozen reports, reviews and studies that the Council had commissioned which were very much part of the process of working out the new 1997 Strategic Plan, which indeed acknowledges them. He would have advised against placing any reliance on the "precedents". It is trite law in this jurisdiction that there are no precedents – a situation which leads to grievances felt by those who find themselves treated differently and (perhaps in consequence) the Council and the court to be cautious in decision making lest something like a precedent could be created in practice. It can be seen that the engineers' differences come down to their varying judgments about planning matters. Dr Johnson, whose views I accept in this regard, clearly stated the concerns he would have expressed if consulted in 1997 regarding aspects of the site not fully understood, such as its ecological values, more particularly, with respect to the potentially huge unknown costs of dealing with issues of:

- Acid sulphate soils and peat;
- Stormwater, especially to achieve the required quality of run off into the fresh water wetland and (beyond) the salt water equivalent (fish habitat);
- Flooding, if only to do with construction of basements, which in a few Area B buildings in the "before" case were proposed below the level of a 100 year flood event attributable to run off from the 80 hectare catchment east of Banksia Avenue.

[257] The issues could all have been addressed, some simply, channelization of the flow from the catchment to prevent water spreading over the site, for example, but insufficient was known of the site to give any idea of the volume of peat, soft clay, problematic when it comes to stability and load-bearing, and acid-sulphate affected soils that might have to be dealt with. The salutary example of gross underestimates of quantities of peat for removal at Noosa Sanctuary (and replacement sand) and of the difficulty of finding locations to dump it was explored in some detail. This situation, which culminated in litigation, did not arise until later, but I accept that a competent advisor would have told a potential purchaser in 1997 that there was insufficient knowledge of what lay under the surface. Of interest is that in 1997, acid sulphate and peat issues were contemplated, the two being dealt with similarly; later experiences showed that this was not necessary, so that appropriate treatments might become less costly in many situations. Dr Johnson volunteered that the market for coastal land like the site is such that costs that might be prohibitive in other locations can be accommodated. The tenor of his evidence was that without

knowing what the worst case might be, one cannot be confident it has been allowed for. The appropriate consultant would be a quantity surveyor, but here the quantity surveyor has no information about the volumes unit costs would be applied to.

- [258] The proposal in the 1980s was to bury the peat requiring to be removed under the proposed canal in an excavation that would free sand for fill on the freshwater wetland, an additional source of supply for that purpose being procured by reducing height of the northern dune on the site by a few metres. Such measures appear somewhat heroic and insensitive in light of present day sensibilities, but they were achievable in engineering terms. It is unlikely that the canal would have been approved by State authorities at any relevant time. Dr Johnson explained the concerns about silting and effects on the “tidal compartment” of systems such as the Noosa Estuary which for present purposes by 1997 had made canal developments a thing of the past. What might have been canal developments have become developments surrounding lakes, which enjoy access to and from open water via locks – an arrangement said to give comfort to security-conscious boat and property owners.
- [259] I do not think that the disappearance of conditions requiring compliance with the *Canals Act* between Exhibits 8 and 9 in 1988 has any significance at all, in particular as indicating some relaxation of the Council’s attitudes.

Economics: Mr Duane and Mr Norling

- [260] The economists agreed that the era of what Mr Norling called “market exuberance” in the resort field came to an end in 1989 when Japanese banks ceased lending for overseas projects, and that by September 1997 R221 was no longer viable, any idea of a 600 room hotel (to be Australia’s fifth largest) being indefensible. Mr Duane offered support on the basis of staging over many years, or strategies such as multiple smaller hotels differentiated by varying star-ratings or operators. This I found unpersuasive; for one thing, there was only one “hotel” site in the precinct plan for R221. While operators could well have been found, finding a developer prepared to build a hotel would have been a more difficult task. Mr Duane suggested that Mirvac may have been interested on the basis of its coming in for a limited time years later as operator of Noosa Sanctuary – it was not the builder of the resort – or Lendlease, on the basis of its association with Twin Waters Resort from around 1995. However, its involvement was to acquire 157 hectares of surrounding land for residential development, nearly all for detached dwellings. I am in no doubt that what has interested potential developers at all presently relevant times is the development of residential land for subdivision into house allotments or (depending on what planning arrangements permit and what would be more rewarding financially) of apartments for sale to willing purchasers, whether as investment properties that might go into a letting pool and be made available to visitors or be used as a principal or second residence by the owner. (Of course, there are many variations possible on these themes, such as apartments being let privately for shorter or longer periods.)
- [261] I accept the evidence of Mr Norling as to economic conditions at the relevant time and the tenor of advice that an economist would give an intending purchaser of the site:

“And the relevance in terms of your advice to the prospective purchaser of the scaling down of the hotel from 600 rooms to 150 rooms?---Okay. Look, I think, and I draw the court’s attention to table 2 on page 18 of the joint report. And you can see that at 150 rooms it would become the third largest hotel in the Noosa area and I think at that stage there was an approval at Noosa Springs for 200 rooms, so it would become the third or fourth largest hotel in the Noosa area. Look, I think at 150 rooms that it was better scaled to suit the Noosa tourism market.

As at 1997 I would’ve thought that the market was perhaps still a little premature for another hotel of that scale, however, I think as at 1997, if I looked carefully at the market I am likely to have told a purchaser that yes, I could foresee, perhaps not in the short term, but I could foresee let’s say in the medium term, a time period where a 150 room hotel on that site could achieve appropriate occupancy levels. So that there would be some market support from a tourism demand perspective or 150 rooms within the foreseeable future as at 1997, however, having said that, I would’ve then qualified that advice to an intending purchaser at that date by saying, but the tourism development market was still toxic in the mid 90’s.

Developers were, and financiers, were still smarting from the losses that were made in the late 80’s and during the 90’s be - where – sorry – during the 1990’s in – at a time when hotel investors could buy a hotel for one third down to one quarter of replacement cost, the – in my view the financial market and the development market would knock back or would not be interested in a new Greenfield’s development centred around a 150 room hotel, so there’s a difference in my view between being able to indicate that there would be some market support, some market demand from a tourist numbers point of view, to support an occupancy level within a reasonable time in the future – a big difference between that and whether a buyer would be prepared to spend the – I don’t know – 50 to 50 million plus to build a 150 room hotel right now.

Well, a couple of points arising out of that. You mentioned the approval for the 200 room hotel at – or resort at Noosa Springs?---Noosa Springs, yes.

That is yet to be built isn’t it?---That is correct. That is yet to be built and so we see a circumstance where the Noosa Springs development as we now see it on the ground, is what I would describe as a residential resort. It is not a tourist resort.

...

For a tourist resort they would certainly be looking at, you know, 70 per cent-odd as a break even position however, to fully answer your question, yes it would be concerning that the occupancy rate has dropped from 72 to 68 in this current year, but to be fair, whenever a

developer is looking at developing a hotel and making a decision as to whether to commit or not, the developer needs to be looking not in the current year, the developer needs to be looking at sort of three years time, because it takes time to get your approval, build it, have your soft opening, have your more formal opening and then – even then they're expecting by the third year to get what they call their maintainable occupancy rate.

It's never expected that you get that in that first or second year, so the point I'm making is that, yes it's concerning that the occupancy rate has fallen, yes it's concerning that it's less than 70 per cent, but a prudent purchaser interested in this site would be asking me, well, what do I think about the occupancy that could be achieved by both the total market and his new product in about three years time.

Do you have the basis for an answer to that question?---Not a quantified – not a quantified position but as I – if I can just refer to an answer I gave a little time earlier – I indicated that whilst I may have been a little pessimistic about a 150 room hotel opening that year, 1997, and achieving a reasonable occupancy, by the time I did my numbers and did my homework I would hope, and be sufficiently optimistic, that within you know a three to five year time period from 1997, I could come up with a set of arguments and circumstances and a model that suggested that we should be able to get close to 70 per cent or around the 70 per cent.

Well, even on that basis, achieving 70 per cent, which I think you described as a break even point earlier, is that your advice to the potential purchaser, a source of encouragement or a source of caution?---I think – think that it would be a sense of encouragement in terms of the product - it fitting the market and there being some bums on beds so to speak, in terms of being able to get a cash flow, but I would be indicating to the purchaser that because of the development and financial attitudes to tourism development in tourist destinations at that time, that very little value or no value should be attached to the land in respect of the hotel.

...

It deletes the canal. Of what relevance, if any, is that as an additional consideration to those that have just been discussed?--- Yes. It really affects the standard at which you can place the hotel at. It affects the room rates that you can achieve. And it affects the unit rates, unit prices, that can be achieved for, using the eighties language, the condominiums that surround and form part of this resort. And so – and it does that because it reduces this property back to the market in that the – it's more similar to the Sheraton except you can't quite walk to the Hastings Street shop or to the beach as easily as you can from the Sheraton. So it – you lose a point of difference by not having that all-in-one destination. And what it means is you're then more reliant upon capitalising upon tourists attracted to Hastings

Street, tourists attracted to walking to the Noosa Junction even though the walk – it involves a walk rather than just down the elevator, as is the case with Sheraton. So yes, it reduces the opportunity. But by the same token, the developer can save a lot on his development costs. Because traditionally, a developer would not make a return on the capital invested on a golf course, the capital invested on the canals or a marina development. A developer will make their money from selling the units, whether they be for tourist or for residential purposes, that hang off those costly centralised facilities.

...

(MR GIBSON:) ... ?--- As an adviser to a property developer, a hypothetical purchaser in this instance, I'd be saying to him that you're going to make your money out of the units. You're going to lose money on the golf course. You're going to lose money on the canal and the marina. You – in 1997, you would definitely lose money on the hotel. In – at another point in time, you might make some money out of the hotel. But in '97 you would lose. You're going to make all your money out of the unit. Therefore, you need to structure the whole development so as to utilise those upfront loss leading facilities to make it attractive to entice and or market the units to that market and to anyone else that wishes to buy. ”

- [262] Mr Duane, called by the appellant, emphasised the positive things occurring in 1997. Economic growth in Queensland in 1996-7 bounced back to its (at that time) customary level of about 1.5% above the national average, but in the previous year had been 3% below what was achieved nationally. For some time the pattern in Queensland had been a contrary trajectory each successive financial year, so that in September 1997 one may have anticipated another disappointing figure after the following June (which did not eventuate). Interest rates were down, the Reserve Bank of Australia having just taken the cash rate down to 5%, which continued for a couple of years before rising again in 2000. I agree with Mr Norling that players in the market would still have in mind rates as high as 17% in the early 1990s; rates went up again in 1994 and 1995 (from a lower base). It is unknown how nearly rates available to borrowers (whether purchasers, developers or ultimate purchasers from developers) would approach the cash rate.
- [263] After falling from 1995, building approvals for Australia had started to rise again, but not recovered by September 1997; so too for the construction component of Gross Domestic Product. The RBA's August 1997 report was optimistic.
- [264] Queensland's population growth was down from 2.5% to 2.2%, still double the national average. Nationally and in Queensland there was housing “supply overhang” or “oversupply” respectively. Those factors, the Queensland Government's annual economic report indicated “a moderated Queensland dwelling investment growth in 1996-7”. With inflation rates in check and housing affordability “quite good”, Mr Duane saw the national economy growing at a steady pace. Population figures for Noosa far exceeded the state average.

- [265] The economists agreed (although Mr Duane suggested that he was alone in believing) that the Asian economic crisis did not affect tourist numbers in Noosa; like the Sunshine Coast generally, it serves domestic visitors overwhelmingly. Mr Norling thought that crisis did matter, but only as likely to have “significantly reduced the appetite for Asian investment in Australian property development during the latter part of 1997”, this being of relevance to the marketability of the site; it was common ground that US and European investors have never been interested in this type of development in Queensland. Daikyo invested in Coolum in the 1980s; the appellant’s riposte was that Coolum was not Noosa, which it was suggested never had been and was not likely to, with inflation rates.
- [266] The point is: what funding might have been available to a prudent purchaser making an offer for the site in 1997? It does not seem that overseas, any more than Australian investors would have been readily locatable.
- [267] A dampener upon the encouraging prospects noted above was recorded in the Need Joint Report:
- “34. The former Noosa Shire recorded 104,275 guest arrivals in 1997, down slightly from the 105,541 in 1996 and also lower than the 117,493 arrivals recorded in 1994. Guest arrivals fluctuate over the calendar year with January being the most popular month in terms of arrivals. Occupancy rates have declined slightly over time, from an average of 72% in the 1994 calendar year to 68% in 1997, especially noting that the number of establishments and guest rooms have also declined over this period.”

Having eschewed supporting R221 as at 1997:

- “71. Duane says that R527 was made in 1994 and a relevant application that should be considered as at 5 September 1997. The proposal of the hotel suites for 150 rooms is considered supportable at the time of the 1997 application. Similarly, the potential for 1,000 units, in Duane’s view, was an appropriate scale of development at the tsite if taken over a number of years to meet market demand from tourists and residents. It is Duane’s view that development and financial markets would support an appropriately staged development at the site for those uses over a period of time given the prevailing conditions within the Noosa market as at 5 September 1997.”
- [268] This strikes me as a very guarded enthusiasm. Much depended on how quickly stages could be financed, developed and sold. There were more than 1000 units to be sold. While I am inclined to agree with Mr Duane’s criticism of Mr Norling for nominating 25% as the share of new unit sales the project could command annually, I cannot accept Mr Duane’s taking the approach that in 15 years or so stock could be sold. Over a 15 year period actual building approvals to permit the construction of units, which one would think provide a fairly good guide to the number constructed, an average of about 230 units per annum is derived from wildly fluctuating figures from year to year. Mr Duane apparently took that number to refer to unit buildings which might comprise quite large numbers of units in particular cases. I am satisfied that is a misunderstanding. The 230 average applies

to the whole of Noosa Shire and it includes components such as units in retirement villages. According to Mr Norling, many of the units were in other suburbs than Noosa Heads, including Sunshine Beach and Noosaville. Mr Duane is, I think, positing that something like a one-half share of units sold would go to the site, which Mr Norling (I think correctly) described as unimaginable, however good the developer. One point of difference between the economists was that Mr Norling, at least at one stage, took the approach that only units available for tourism purposes were permitted, whereas Mr Duane assumed that units for permanent occupation, which everyone understands would be likely to sell more quickly, were available also. Mr Norling supported his stance by pointing out that the preferred style of living in Noosa is in detached residences, as building approvals attest.

[269] In the end I am convinced that Mr Norling's more cautious and gloomy views are closer to the mark than his counterpart's.

[270] Assisted by counsel, the economists engaged in a kind of rallying tennis match, with new pieces of information being served up and then returned by the receiver, often a prelude to the ball being hit back into the other's court a few times. Instances already mentioned above (such as Lendlease's potential interest) aside, there was the history of Macquarie Lodge developed on a lot excised from what would otherwise have constituted the north-east corner of the site. Approved in 1990 for 45 units according to the valuers' joint report, it was developed for 36. Another of the prime locations on the site, immediately to the west, was developed after the relevant date for 25 units (36 having been applied for) as Petrie Mansions. Both sold well and it seemed quickly, apparently indicating a strong market, at least for such high quality units optimally located in Noosa. Less desirable units on the site, marketed at a lower "price point", it was said might sell more quickly. Mr Norling cast doubt on the implications of a "tight" spread of settlement dates for Macquarie Lodge, which Mr Duane said indicated sales of all but one or two units within a year (the vast bulk within six months), by suggesting there would have been a considerable lead time in securing sales "off the plan".

[271] The economists, as had opposed experts in other fields, presented on one hand an optimistic assessment of the potential of the site for an investor interested in development, and on the other hand a cautious one; they had to consider how feasible, how successful certain proposals might be, and how costly to bring to fruition. I take it that the optimists would have offered relevant advice to a potential purchaser before the relevant date in line with the opinions they propounded. It is somewhat easier to feel confidence that the cautious experts, if brought in as paid consultants giving professional advice intended to be relied upon by an investor intending to put up many millions of dollars to acquire the site would have been as cautious in advising as they claimed. The hypothetical potential prudent purchaser should be treated as in receipt of the cautious advice, whether or not the less cautious advice was available too.

The architects

[272] The architects' task of assisting the court with expert evidence as to the highest and best use of the site could have been turned to immediately before the relevant date and the corresponding highest and best use immediately after was a very important one. What they opined would have been possible would, of course, have to be

consistent with what relevant planning arrangements at the times in question permitted, what the architects could or could not have designed for depending on resolution of planning questions, as to which the court had received no evidence other than untested joint and separate expert reports when the architects were heard from. The architects, therefore, had to proceed on a tentative basis and be prepared to revise their views depending on a resolution of planning issues. It seems they were left to their own devices and to make their own judgments about the effects of relevant planning instruments. Of course, this is a task of a kind that architects frequently perform. In complex contexts, such as the present one, they would defer to the opinions of expert planners and, no doubt, expect or advise that those they were assisting engage planning advisors as well. It was only to be expected that the architects would, within the limits of their acknowledged duties to the court, present the most favourable case that they could, from the point of view of the interests of the party engaging them.

- [273] Thus, Mr McKerrell, called by the appellant, argued for a “before” case which posited a high yield of multiple dwellings in both Area A and Area B and in his “after” case submitted that no more could realistically be expected to be achieved than heavily scaled-back development for a smaller number of (typically smaller) multiple dwellings in Area A and nothing but a subdivision for detached housing (largely corresponding with what has actually happened) on Area B.
- [274] The Council engaged Mr Robinson as their architect. In the “before” case, there was essentially common ground, except that Mr Robinson adhered more strictly to the agreement in principle that development was possible only on the dunal areas, whereas Mr McKerrell, doubtless encouraged by the far more extensive development permitted and constructed at Noosa Sanctuary, considered that 48 “boardwalk villas” could be constructed in the south of the site raised above the wetlands in that location. His evidence from the witness box lasted more than two days, and featured a strong challenge to the parsimony of what he considered realistically achievable development in the “after” case and, in addition, based on Mr Robinson’s having had second thoughts about the once largely-agreed “before” case, aspects of that.
- [275] Mr Robinson reached agreement with Mr McKerrell regarding the “before” case in a joint report Exhibit 23, which involved a good deal of compromise on the part of both gentlemen. In respect of Area B in particular, Mr Robinson changed his mind, given the opportunity to do so when the parties approached the architects again with a view to obtaining expert architectural opinion regarding the “after” case. This resulted in a further joint report. In respect of Area B, Mr Robinson’s deliberations led him to conclude that the more limited development open under the 1997 Strategic Plan was substantially the same as a revised opinion about the “before” case. The appellant was understandably displeased, but, as it seemed to me, beyond voicing displeasure, made no application to prevent Mr Robinson’s changing his opinion in Exhibit 24, the second joint architects’ report, and indeed refining it to remove another couple of dwelling units in Exhibit 170. My view has been that it is preferable for the court to have an expert’s considered final views, rather than hold him or her to views that may no longer be held, although it may be appropriate to exercise some control: cf. *Stevenson v Nunn* [2011] QPEC 74; [2011] QPELR 718.

Essentially, Mr Robinson based himself on provisions in existence before 1997 requiring development to be sympathetic to surrounding development, in this case the established development on the eastern side of Banksia Avenue opposite the northern section of Area B which consisted of (and is likely to remain) detached dwelling houses of one or two storeys north of an agglomeration of two-storey attached townhouses opposite the middle of Area B, known as Banksia Terraces. I agree with Mr Robinson that in 1997, no more was likely to be approved than buildings having smaller form compared with the building types A and B used in the “block and stacking” exercise; the concept of two-storey height quadriplexes separated by stairways or the like in the middle was accepted as appropriate. Mr Robinson thought a two storey limit would have been imposed on the type A buildings south from the point opposite the agglomeration of two-storey attached townhouses mentioned above. He envisaged five of them and another six in an arc to the west lower down the Area B dune system. The notion of a limit to two storeys is supported by reference to the Council’s successful insistence on a two storey limit for the residential buildings on Noosa Sanctuary to the south, where only a central facilities building was permitted to go to three storeys. Mr Robinson envisaged another four type A buildings downhill from and to the west of his quadriplexes. He justified the restriction to two storeys on the basis of visual impact when viewed from anticipated development on Area A. This approach I found persuasive. However, the Council’s planner, Mr Venn, was more receptive to the notion of three-storey buildings away from Banksia Avenue. He agreed with Mr Robinson in respect of protecting visual amenity in Banksia Avenue and from Noosa Sanctuary, but, otherwise, considered that the remaining eight type A buildings or equivalent set low in the Area B dune three storeys were acceptable given that their visual impact would be enjoyed or suffered only from within the site.

- [276] To identify the before case, the architects relied on the views of ecologists, engineers, and speaking generally those experts who were called earlier in the appeal, to identify site constraints which limited the developable area of the site to within an agreed “constrained building line”: see for example Exhibit 23 p 96. As to Area A there was agreement. There were aspects of disagreement about Area B even in the architects’ first joint report, Exhibit 23: see p 96. Mr McKerrell contemplated development of boardwalk villas supported on stilts above the flat low-lying terrain adjoining the south-western part of the dune. In the supplementary joint report, Exhibit 24, Mr Robinson identified additional constraints in the way of development to the constrained building line. See Exhibit 24, pp 123, 128. These are essentially the so-called “bite in the belly” north of the boardwalk villas area, which served to push development back into the dune for reasons including steepness, peat underlying the dunes, ecological and hydrological concerns – occasioning the loss in whole or in part of hypothetical buildings contemplated by Mr McKerrell. See p 10 of Mr McKerrell’s court report, Exhibit 111, for “notes” explaining the issues. Another relates to the south-eastern corner of the dune, noted as “road resumption land”. The intention or desire of Queensland Transport to keep undeveloped and available for possible resumption for road widening in Cooroy Noosa Road, the requisite land in the south-east of the appellant’s site adjoining land on the north-east of the Noosa Sanctuary site prior to the relevant date, is clear in my view. See Queensland Transport’s letter to Noosa Shire Council of 29 June 1994 (Exhibit 150 p 562) requiring “exclusion from the proposal of the area of possible future requirements detailed on the attached sketch

dated 11 May 1993". The sketch indicates interest extending 50 metres along the northern boundary of Noosa Sanctuary (being the southern boundary of the site) back from the Road. Later Queensland Transport wrote in relation to the site itself a letter of 28 March 1995 (Exhibit 24 p 165):

"Queensland Transport's preliminary planning for this section of the Cooroy-Noosa Road indicates a possible future requirement from the subject property. The area of possible future requirement is detailed on the attached plan.

It is considered appropriate, and Queensland Transport requires, that any development of the subject site exclude the area of possible future requirement and that standard building setbacks for any new and permanent improvements be applied from the likely future boundary.

Construction of ameliorative works may necessitate dedication of the area of possible future requirement and/or additional areas in which case such dedication will be required at no cost to Queensland Transport."

The plan dated 13 March 1995, being a "Plan showing possible future requirements from Lot 2 RP801918" shows the same 50 metre measurement, and 135 metres along the road frontage on top of the interposed truncated corner frontage whose length would appear to be about 50 metres.

- [277] The architects agreed to a method of calculating the buildable area of the site which could be used to calculate the maximum gross floor area achievable having regard to what the planning scheme was understood to allow. A so-called "block and stacking" exercise was undertaken to confirm that standard "blocks" could be accommodated on the site to produce the maximum GFA under consideration. There never has been any implication that the site would be developed in that way. Objections that the developments contemplated in this exercise would be unattractive to the market (for example because the standard "blocks" were "double-loaded", meaning that apartments were imagined on both sides of central corridors, depriving many of worthwhile views) were beside the point. It appeared to be an article of faith between the architects that the maximum GFA agreed upon would be achievable physically. However, it was accepted (and emphasised by Mr Robinson) that a developer might obtain better returns by less intensive development than the considerable number of standard 100m² apartments envisaged in the exercise. The units on a floor in a typical Building type "A" or Building type "B" ranged from 83.2m² to 108.8m², with an additional single two-storey unit at each end of 152.2m² in type "B": Exhibit 23 p 106, p 107.

- [278] Adopting the measure of units (averaging 100m²), a useful way of understanding the conflict between Mr McKerrell and Mr Robinson is to note the former's estimate of highest and best use in the before case as:

- 610 units (generally in four-storey buildings) in Area A; and

- 601 units (in a mix of two and three-storey buildings following rezoning to Residential Medium Density) in Area B (over and above boardwalk villas)

and the latter's:

- 610 units in Area A; and
- 265 units in Area B (after resiling from his earlier concurrence in 601).

Mr McKerrell was far more sanguine about the potential of Area B before the relevant date. In his after case, pessimism reigned. He assessed the highest and best use under the regime of the new PDLU designations as:

- 213 units in Area A; and
- 47 houses in Area B.

Mr Robinson's view of the after case was:

- 610 units in Area A; and
- 265 units in Area B.

In other words, no change. His numbers might at first blush seem contrived, but they are the consequence of his mature consideration of the impact of the 1997 Strategic Plan and the impacts of the 1988 one for the before case.

[279] The numbers set out, which had been arrived at by the making of various judgments as to unit size and the like, have no particular magic about them and were always capable of being adjusted to suit circumstances. The same broad picture emerges from other numbers produced by the architects which may be found in places such as p 139 and p 145 of Exhibit 24. Thus, in the before case, maximum GFA permitted in Area A was considered to be 89,148m² (40m² per 2,229 persons permitted at 340 persons per hectare); the area available for building was taken to be 6.555 hectares, susceptible of 45% site cover. Only 1,464 persons was "achieved", being 2.4 persons per unit. In the after case, the area available for construction was regarded by Mr McKerrell as reduced to 3.374 hectares (with the assistance of surveyors, whose ability to be confident about locating PDLU boundaries would not in my opinion exceed that of a layperson, given the nature of the mapping) and the population density as 250 persons per hectare, reducing the GFA allowable (and achieved) to 33,740m². While 351 units (2.4 persons per unit) was allowable, only 213 units could be achieved on this approach. The reduction of 340 to 250 was not enacted until three months after the relevant date by a separate planning scheme amendment. Mr Robinson (correctly in my view) refused to accept that the after case was controlled by the reduced limit; also (correctly in my view, in all the circumstances of the appeal) he considered the area of land available was as indicated by the RHD zoning, not that indicated by the reduced SD&AR PDLU. He had a "fall-back" analysis, should the available site be reduced as Mr McKerrell and

his advisors considered, to 3.374 hectares, in which case 450 units could be achieved in his view, and a calculated population of 1,080, compared with the calculated 1,464 of the before case which he favoured and Mr McKerrell's gloomy 511.2 in the after case.

- [280] The tables at p 145 show Mr Robinson's achievable GFA numbers well in excess of Mr McKerrell's. Nothing in the end turns on variations in the numbers. Exhibit 216, which came in late in the appeal, contains valuation calculations by Mr Brett showing GFA in Area A, exclusive of a little over 2,000m² commercial, reducing from 72,918m² to 31,651m². The architects participated in revisions of their work that can be found in Exhibits 166 to 172, including making allowances for Appendix XV, for example. I do not propose to recount the detail or attempt any summary. Any such exercise would not help in the disposition of the appeal.
- [281] Turning to Area B, the big issues commence with whether Mr Robinson is persuasive that his "before and after" case illustrated at p 128 of Exhibit 24 does indeed represent both cases. Unsurprisingly, it comes down in the middle of the range marked by Mr McKerrell's 600+ units before and 40-odd detached housing lots afterwards. The underlying rationale (which I accept) is that before and after the relevant date, the Council had been receptive to unit-type development in this Future Urban-zoned/Urban Area PDLU, changing to Detached Housing PDLU location. The limitations acknowledged in the building constraint line (as made more restrictive by him) apart, the governing constraint was the requirement of sympathy to surrounding development, notably the established one and two-storey attached housing east across Banksia Avenue. Nothing that happened on the relevant date changed the constraints in any way. Under the 1988 Strategic Plan as much as under its successor, there would have been precluded bulky structures like Building type A opposite the established detached homes north of Banksia Terraces. Mr Robinson in that sensitive location proposed 10 modest so-called "quadriplexes". Exhibit 170 is a revision reducing the quadriplexes to nine in the interests of what appears to be a more domestic-scale appearance and an improved road system within the development. South of that established development, where a rank of 14 or so two-storey attached townhouses exists on the eastern side of Banksia Avenue, two-storey Buildings type A were admitted. Likewise some are shown further north, where concealed behind the quadriplexes.
- [282] Mr Robinson clears his first hurdle of persuading the court that he is right about the before case (subject to a possible minor qualification admitting a three-storey building or two in the south); the evidence is overwhelmingly in support of his approach that there could be no development "over peat". The second hurdle is making good his optimistic view of the after case for Area B. This would depend on a rezoning, which I consider no more difficult to achieve than the rezoning to RMD required for Mr McKerrell's (or Mr Robinson's) before case. The Detached Housing PDLU is vast and the loss of so much as exists on the site would have no real impact on the prospects of detached housing being the dominant use in the designation. The mooted rezoning to RMD was always somewhat problematic, as Mr Venn explained (T:28-71 ff). Mr Robinson says convincingly that a developer's ability to transfer what became known as the conservation land (i.e. site minus Area A and Area B) would be an attractive inducement to the Council to rezone

(probably to Special Facilities). It would be a ground for overlooking perceived conflict with the Strategic Plan.

- [283] Mr Litster QC, for the Council, scored a devastating point by showing that in the “before” case as presented there had been overlooked the proviso in Appendix XV in the 1990 planning scheme (Exhibit 11, Queensland Government Gazette, 15 December 1990, p 1762) setting out, for purposes of s 36(9), performance standards which had to be met for the particular zone in which a site was included:

“

APPENDIX XV	
Performance Standard	Residential High Density Zone
Maximum gross floor area (square metres) ...	Maximum allowable populations in persons multiplied by 40, provided that the maximum gross floor area shall not exceed 13600 square metres

”

The complete Appendix is set out at paragraph [37] above.

- [284] Lest it be thought they were overlooked, I acknowledge the appellant’s responses to the Council’s raising of this performance standard:

- “(a) Mr Brett was aware of, and comfortable with, the mechanisms for achieving development densities including group housing and a Special Facilities zoning (or even subdivision);
 - (b) the architects had always contemplated a group title arrangement;
 - (c) Council had used the Special Facilities zone in the past to support development of the subject land. It did so for its support of R221 and R527.
As the Court observed, one needs to look no further than Noosa Sanctuary for example of a site where Council supported much more than 13,600m² without requiring reconfiguration but using the Special Facilities zone;
 - (d) as Mr Brett put it ‘*it would seem a little incongruous that Council puts an area aside – a large area aside for res high density, states (there will) be no more, yet limits the development on it to 13,000-odd square metres*’; and
 - (e) is equally incongruous that the limit would be applied to this land with its unique size.
412. It might also be observed that on the one hand the Council wishes the Court to accept that the 13,600m² GFA maximum would be a ‘*hard and fast limit*’, and yet on the other hand contends that the ‘*after*’ PDLU boundaries were inherently flexible and likely to be adjusted by Council.
413. More to the point, it is simply a nonsense when one considers that the natural corollary of the Council’s

argument with respect to the 13,600m² GFA maximum would be that a prospective purchaser fearful (on the Council's case of the risk of a rezoning application) would expect the vendor to sell the Residential High Density land within Area A (some 6.55 hectares) on the basis that its development potential was for 13,600m² of GFA. This is typical of the result of arcane and impractical arguments thrown up to avoid the payment of proper compensation."

This smacks of desperation. It is odd to see a valuation expert, even one as eminent as Mr Brett, turned to on a planning point. The 13,600m² limit in my view would apply in a group title arrangement. Noosa Sanctuary was already zoned Special Facilities. The rezoning in R527 was to Special Residential Zone: see exhibit 150 p 1198. As regards 412, there is a qualitative difference between a mandatory cap of 13,600m² and a PDLU boundary line on a map which is not susceptible of location on the ground and, to boot, accompanied by an invitation in the strategic plan in 25.2.6 to present "significant new or improved information" that may have a bearing given the "broad" nature of mapping and underlying information.

- [285] The multiplication exercise produced GFAs many multiples of 13,600m², which, essentially, were achieved. The population density and GFA restrictions were ones the Council could not relax. It was patent that in the "before" case, the yield posited (or anything like it) could only have been achieved by a rezoning that would avoid the restrictions or by subdivision, which Mr McKerrell strove to avoid for excellent practical reasons which he explained in evidence-in-chief.
- [286] Mr Robinson's argument was that there was no difference between his revised "before" case and the "after" case.
- [287] At the end of the second day of his oral evidence, Mr McKerrell's "after" case had, in my view, been destroyed. The reasons for that view being taken include:

Area A:

- He refused to contemplate that areas outside the shrunken semi-detached and attached residential area as shown in the Preferred Dominant Land Use designations might be available for development, even though they were zoned Residential High Density and not subject to any environmental-type concerns;
- Perhaps inconsistently, he considered that where the PDLU designation SD&AR in 1997 extended over open space zoned land there could be development (i.e. the zoning in this regard would prevail);
- He did not allow for development on areas both within the 1997 semi-detached and attached residential PDLU and the Residential High Density zoning which had become unavailable by title changes not occurring until well into 1998, in particular the area of new road in Serenity Close and Easement F created for

drainage purposes and extending from the Petrie Mansions site to the open space zoned land;

Area B:

- In the south of the site, he abandoned the idea of any development in the boardwalk villas area, although the PDLU was detached housing in future urban zone, his reasoning being that in that PDLU, no development other than detached housing was permissible;
- More generally, he concluded that in Area B only detached housing based on the reconfiguration that has now occurred was achievable.

[288] Mr McKerrell's "before" case in Area A is accepted, but not his "before" case in Area B; more has been said elsewhere in these reasons about the uncertainty of the posited rezoning being achieved. Further, probably because the planners' reports were not available, it paid insufficient regard to the 1988 Strategic Plan, which contains support for Mr Robinson's final opinion that Exhibit 170 shows what the hypothetical prudent purchaser might expect to have been approved.

[289] At the risk of some repetition, I offer a selection of pertinent 1988 Strategic Plan references:

"PREFERRED DOMINANT LAND USES.

2. ...

(2) Tourist Facility Growth Area

... investigation would be required to ascertain the form of development which is suitable ...

(3) Urban Area

... Integral to the proper functioning ... is ... open space ... therefore the urban area is not confined to residential uses only.

...

TOURISM OBJECTIVES

3. ...

(3) To maintain and enhance the Shires's natural attributes

... Noosa River and environs ... preserve their integrity. The careful assessment of the potential impact of development proposals in or adjacent to such areas will be of importance. ...

...

(5) To ensure that tourist development projects do not have adverse impacts upon adjacent land uses.

...

- (a) adequate protection or enhancement of existing amenity is afforded;
- (b) a high level of urban design is achieved, and building form is sympathetic to existing or anticipated future uses on adjacent properties;

...

The amenity of residential neighbourhoods may be affected by ... comparative scale of buildings or development.... These ... factors will be carefully assessed....

...

URBAN OBJECTIVES

4. AIM: TO ENCOURAGE RESIDENTIAL GROWTH TO MEET COMMUNITY AND TOURIST NEEDS AND LIFESTYLES, HAVING REGARD TO THE NEEDS OF THE NATURAL ENVIRONMENT ...

...

(5) To ensure that the expansion of the urban area occurs in areas which do not create significant environmental impacts...

... Council will consider –

- (a) the effect of the proposal on the natural environment. ... the destruction of important areas of the natural environment is not to be condoned. ...
... Council may require ... an Environmental Impact Statement. ... environmentally significant land should be retained as open space and appropriately buffered ...

...

(6) To adequately control the development of urban areas to ensure a high standard of development is achieved.

... Council will consider the following matters ... -

- (a) ... uses in the urban area ... compatible with the residential uses in the area. ...
- ...
- (d) That residential amenity is preserved or enhanced. ... The perceived impact of any development proposal is often reflected by way of public objection.
- ...
- (h) That recognition is given to natural topographical features.
- ...
- (i) That the maintenance of adequate spacing between buildings is achieved, in order to maintain high standards of visual amenity. ...
- (j) That the development of buildings which are aesthetically pleasing is encouraged. ... The height and shape of the building is ... a matter for consideration in this regard. ...

...

PUBLIC AND PRIVATE OPEN SPACE OBJECTIVES

7. AIM: ...

OBJECTIVES

(1) To preserve the Noosa River ...

...

... inordinate levels of impact which ... impair the integrity of the waterway and adjacent environs will not be favourably considered. The incorporation of broad buffer strips which visually screen and isolate such man made developments is a desirable goal. ... The intention is to preserve the natural or existing vegetated views from the waterway system. ...

(2) To retain, in their natural state, areas of ecological and environmental significance and to consolidate and secure such areas in public ownership.

... attraction to the tourist ... of ... extensive areas of open space ...
 ... it is essential ... to ensure that this image is not impaired. ...

...

(6) To ensure that the development of privately owned land ... is in keeping ...

... It is not the intention ... to preclude ... but to ensure that ... development proposals ... will be in keeping with the setting. ... consider[ed] ... on merit, with the desired goal of preserving the general integrity of that land and its inherent visual amenity.”

[290] In addition to such Strategic Plan provisions, relevant references to the protection of amenity of the neighbourhood may be found in the planning scheme gazetted in 1990, beginning with 36(4)⁴⁸ regarding “dwelling units ... attached in any one plane”, which sets out to avoid “detrimental effect upon the amenity, character and aesthetics of the surrounding area”; see also 37, 67(2)(d) and 68, and the Town Planning By-law at 5(4) and (8), 9(1), (6) and (7) and 13(2) and (3). Mr Buckley agreed that a prudent purchaser would take the first requirement, in particular, into account: T 27-72.

[291] An aspect that should be noted is the sharp contrast between the contention that in the after case for Area A, notwithstanding the RHD zoning, the 1997 Open Space PDLU would absolutely preclude development, whereas the 1988 predecessor was said to have no effect whatever by way of qualifying the zoning. Exhibit 219 is a useful superimposing of the 1988 Open Space PDLU boundary which shows that “Open Space” impinged on the RHD zoning to more or less the same extent as does the 1997 Open Space designation. Necessarily, such exercises have to be best guesses. The difference in overlaps, which came to be described as the Bishop’s Mitre, was scaled at about 4,000m². There is even a smaller area designated Open Space PDLU in 1988, but SD&AR in 1997. Of course the appellant’s case is that 1997 brought a paradigm shift. The corollary that the 1988 provisions could be ignored as ineffective for present purposes cannot be accepted. The reason for their not having precluded development in Area A may be that there were no “environmental values” in the affected part of the RHD zone – a circumstance that will necessarily survive the relevant date.

⁴⁸ “(4) Within the Residential Low Density Zone and the Residential Medium Density Zone, not more than four (4) dwelling units and six (6) dwelling units respectively are attached in any one plane, provided that this provision shall not apply where the Council is satisfied that the proposed development would not have a detrimental effect upon the amenity, character and aesthetics of the surrounding area;...”

The Valuation Evidence

- [292] In the joint report of the valuers of 22 July 2013 (Exhibit 26) Mr Brett, engaged by the appellant, expressed no opinion of the site's value based on the appellant's original claim that R221 or something like it represented the before case. He proceeded on the basis that:

“To the extent that [R221] approval extended into areas considered to be environmentally sensitive, those areas are excluded from the development now proposed.” (page 15)

His approach was clearly expressed at p 23:

“CONCLUSION IN RESPECT OF DEVELOPMENT POTENTIAL:

Without introduction of the 1997 Strategic Plan:

By virtue of past applications and approvals a purchaser of this property in September 1997 (absent the new Strategic Plan) would be well informed of the planning scheme and Council's expectations. Past delays in approval processes were by and large a result of development proposed for environmentally sensitive areas.

The purpose of the various joint expert reports is to address and resolve where possible matters necessary for a planning application and for an Environmental Impact Study. The architectural schemes accommodate those issues.

Although some risk remains a purchaser of the property would be content that an application incorporating this information complies with relevant planning instruments and would succeed. The primary outstanding planning risk is one of timing rather than approval.

A purchaser would also bear in mind the June 1997 consent approval on the adjoining Noosa Sanctuary property and the earlier approval of Noosa Springs.

With introduction of the 1997 Strategic Plan:

Immediately on adoption of a new Strategic Plan which consciously changes the area previously identified for residential high density to a smaller area, a purchaser would not pay for the prospect of Council approving an application for high density development of the previous area.

Similarly for the area zoned Future Urban, a purchaser would not pay for the prospect of Council approving a use other than the Detached Housing identified in the newly adopted plan.”

and at p 26:

“VALUE OF SETTLER’S COVE:

RB’s value of Settler’s Cove is assessed as follows:

Reliance is placed on the gross floor areas and unit densities expressed on the McKerrrell concept plans and their associated area and density schedules.

Having reviewed matters further RB does not now place any added value on the proposed 48 x 2 bedroom boardwalk villas identified in Concept Plan number 1.6.5 (ix).

Although a purchaser would sensibly pursue approval for this component its prospects for planning and marketing success would be seen as a bonus to the purchaser rather than an identifiable component of the purchase price.

“

Values Without 1997 Strategic Plan			
Residential High Density			
Number of Units (incl duplex)	608 units @	\$38,978/unit	
GFA	72,918m ² @	\$325/m ²	\$23,698,350.00
Commercial	<u>2,040m² @</u>	\$325/m ²	<u>\$663,000.00</u>
Sub-total	74,958m²	\$325/m ²	\$24,361,350.00
Residential Medium Density (without Boardwalk Villas)			
Number of Units	553 units @	\$30,582/unit	
GFA	65,045m ² @	\$260/m ²	\$16,911,700.00
Commercial	<u>2,224m² @</u>	\$260/m ²	<u>\$578,240.00</u>
Sub-total	67,269m²	\$260/m ²	\$17,489,940.00
TOTAL			<u>\$41,900,000.00</u>

Values With 1997 Strategic Plan			
Residential High Density			
Number of Units (incl duplex)	213 units @	\$52,009/unit	
GFA	31,651m ² @	\$350/m ²	\$11,077,850.00
Commercial	<u>2,081m² @</u>	\$325/m ²	<u>\$728,350.00</u>

33,732m ²			
Residential Detached Housing			
Number of Allotments	41 lots @	\$56,000/lot	<u>\$2,296,000.00</u>
			\$14,102,200.00
TOTAL			<u>\$14,100,000.00</u>

Reduction in value: \$27,800,000”

following a review of sales evidence for Noosa Sanctuary (reasonably assessed as an inferior site) - and for the site itself:

“Settler’s Cove:

This is a sale of the subject property on an unconditional (as to development approvals) basis in July 2005 for \$95,000,000. There is difficulty transposing this value to the September 1997 relevant date. Nevertheless the sale is relevant in its demonstration of the high value nature of this property.

Conditional approval was obtained in November 2003 followed by a Negotiated Decision Notice in August 2004 to create 8 residential high density allotments with the Residential High Density zone accessed from an extension of Serenity Close. Management plans required as one of the conditions were approved by Council in September 2005.

There were no approvals for the Detached Housing designated land in Banksia Avenue.

Since purchase the high density land has been progressively developed and a 33 lot detached housing subdivision in Banksia Avenue completed.”⁴⁹

[293] That reliance was placed on Mr McKerrell’s opinions, with the qualification expressed regarding the boardwalk villas, is clear. In his court report (Exhibit 214) at p 30, Mr Brett presented the same table, updating the preceding wording to read:

“VALUES:

⁴⁹ As Mr Brett said, the 2005 sale price has the status of another opinion of the site’s value. It might have been interesting to know of yet other opinions, notably those of the Valuer General, as to whether the Government’s valuation for revenue purposes fell in 1997. There was no evidence about this. Neither Mr Brett nor Mr Slater set much store by such “official” valuations.

The basis on which I have assessed values is discussed in the Valuers' Joint Report. Sales are referred to in that report but not detailed. Attachment 4 of this report provides that detail.

Because gross floor area (GFA) is the driver for the extent of development on the Settler's Cove land it has been used as the value reference point. Unit numbers and individual sizes are too variable to be used as a multiplier.

On this basis the before and after values have been assessed as follows:"

It will be noted that the injurious affection sounds roughly equally in dollar terms as between Area A and Area B, if anything more heavily in Area B. Exhibit 26A incorporated a correction by way of increasing the number of lots to 47 as proposed by Mr McKerrell disregarding a road dedication. The consequential change to the figures was to increase the value attributed to those lots to \$2,632,000.00; the reduction in value was calculated by subtraction as \$27,450,000.00.

[294] Exhibit 228 was a re-working against the possibility of the court accepting a Council contention that certain constraints in Area B would entail the loss of three Buildings Type "A" as conceived by Mr McKerrell in his before case, each accounting for 2,718.5 m² of GFA. This lower before value for Area B reduced the compensation amount to \$25,280,730.00. It was common ground that (on the assumption of a reduced site and/or development) in the after case the value per square metre of GFA would increase.

[295] Mr Slater came under criticism for contributing seven pages to Exhibit 26, while Mr Brett contributed some 35 or more, and (perhaps more to the point) for erroneously observing that in an application for consent (supposedly by way of contrast to one for rezoning) the matters for consideration by the Council would not include conflict with a strategic plan: see as page 4, at page 42 of 45 in Exhibit 26. In fairness, Mr Slater had, before recording the erroneous observation, explained why he considered (and thought a prudent purchaser would consider) that the zoning would prevail in Area A "after" as much as "before", citing Mr Venn's opinion and another planner, the late Russell Ryter, who had supported a successful reconfiguration application (after the relevant date) by an associated company of the appellant:

"3.4 There is therefore, some internal tension within the planning documents. There are no obvious environmental constraints that distinguish between the land zoned Residential High Density and designated RS-D & AR Preferred Dominant Land Use, and the land that is zoned Residential High Density and designated OS-C & WP.

3.5 In these circumstances, it is appropriate to afford greater weight to zoning of the land that confers land use and subdivision entitlements, rather than to the Strategic Plan. I understand that this is the view expressed by the Planning and Environment Court and its

predecessors on a number of occasions. This is particularly the case in the circumstances of a code assessable reconfiguration application that satisfies the relevant lot size and frontage requirements in the prevailing zone.”

- [296] This relates to Area A. As to Area B, Mr Slater thought the McKerrrell before development was so large in relation to the Noosa market that it would take many years to implement. He said it was fundamental that values based on competing before cases would not be proportional to numbers of units (Mr Brett appears to give the same opinion); he expressed doubt at that stage that in the after case the purchaser would pay no more for Area B than would be justified by a detached housing sub-division, placing no weight on the subsequent owner’s having chosen to develop Area B in that fashion. Mr Slater allows that the choice “could well have been more cash flow driven rather than maximising content or being overwhelmed by town planning hurdles”. The conclusions led to Mr Slater offering as values:

“APPLICATION OF VALUES

Area A

In my opinion, a fully informed purchaser would see no difference in the value of this land before and after the coming into effect of the 1997 Strategic Plan. (This assumes no reduction in allowable density as adopted by McKerrrell.)

With respect to the value applied by Mr Brett, in principle I regard as reasonable the value expressed as a rate per square metre of GFA in the after case. Whilst the comparison (in terms of per apartment GFA) between the before and after cases is not like with like, I believe the difference in the applied rate does not adequately reflect the fact that the before case comprises 2.8 times the number of apartments that makes up the after case.

Area B

Before case. Given the size of the development I believe that the GFA rate applied to the claimant’s proposal is excessive.

In the after case, I have difficulty accepting that informed parties to a sale would accept that there was no higher potential than a 41 lot subdivision.

I acknowledge however that in the after case the purchaser would see a higher risk in securing an approval of the scale of that proposed by Mr Robinson.”

- [297] Mr Slater’s court report of 27 October 2013, Exhibit 215, confirmed and expanded on his views, with some tightening. I agree with his view that, apart from unknown taxation benefits that may have flowed from dedication of the wetland area, the price obtained in July 1995 is difficult to reconcile with an after value of only \$14.1

million in September 1997, even acknowledging the number of years that had passed, a rising market in the early 1990s and the approvals granted in respect of Area B and the whole of Area A. Treading close to (or relying on) other areas of expertise, he questioned achievability of the architects' before case given that the 13,600m² per site maximum GFA cap had been ignored and the after case on the basis that Mr McKerrell's assumption that no development outside the SD & AR PDLU was possible, questioning why the 1988 open space designation was regarded as of no limiting effect on development at all, and whether the later reduction in maximum population density applied retrospectively. The now familiar issues regarding Area B he expounded more or less as Mr Robinson had. Mr Slater said that a purchaser would or might pay for the prospects of getting approval for more than detached housing in Area B and of getting approvals over the "shrinkage land" in Area A which in his (lay) judgment had no features distinguishing it from the SD & AR component. He may be seen as succumbing to the general tendency of the witnesses to take confident or pessimistic views about the prospects from a developer's perspective of approvals being obtained which tend to favour the interests of the party engaging them in this appeal. Thus, he emphasises the risk, cost and delay accompanying the rezoning which may have been needed to achieve Mr McKerrell's 72,908m² of GFA in Area A in the before case, and to allow any significant development at all in Area B. On reflection (paragraph 19.3.2) he came to the view that the risks were such that for Area B, a purchaser would not pay any more than the "base value", being that for residential sub-division as advanced by Mr Brett:

"19.3.3 The degree of risk is fundamental to this valuation."

He reminded us again of the length of the development period and the consequences of allocating over a smaller number of apartments certain development costs which were essentially fixed. It is not possible to work recalculations on a simple linear basis. Another feature of risk was "internal competition" as developed units on the site came on to the market to be resold. The simplicity and certainty of residential sub-division (and the ability to achieve thereby cash flow and reduce debt quickly) he thought would have made the likely fate of Area B in the before case residential development such as has befallen Area B in the event. I find these views persuasive.

[298] Mr Brett's methodology was not really challenged, except as to its appropriateness once one moved terribly far from Mr McKerrell's scenarios, and for some quibbling about dollar amounts necessarily derived from available sales data which seems troublingly scant. It is no criticism of the valuers that truly comparable sales could not be found. Given the site's characteristics and location, there are no others in Noosa that could be thought comparable.

[299] As matters turn out, the appellant does not establish any injurious affection, or (should I be wrong in so thinking – because, say, some potential for three storey development in Area B as per Mr Venn was feasible, or Mr Robinson's after case for Area B was considered too optimistic) if it had, there is no formula for converting to dollar terms that could be applied with confidence: there is simply insufficient evidence to permit assessment of compensation; further, the

discrepancies are too great to permit adjustment downwards of Mr Brett's work, as occurred, permissibly in my view, in Exhibits 26A and 228.

Alleged Inadequacy of the Valuation Evidence

[300] The Council contended that the court was not entitled to speculate about market values in the absence of evidence, the point being that there might be a finding of injurious affection in a scenario the valuers had not considered and given market values for. It was suggested that no assessment of compensation could be made unless the appellant could point to evidence of relevant values. At T36-81, lack of specific valuation evidence was said to be an insurmountable difficulty for the appellant unless the court "accepts the McKerrell before and the McKerrell after ... the evidence simply does not provide any basis upon which [to] determine the market value of the land either before or after." This exchange occurred in final addresses:

"HIS HONOUR: if you're too inflexible about that, you make it next to impossible for someone like the appellant, don't you?

...

... Because he doesn't know ---

...

... what the court is going to make of ... highest and best use possibilities.

MR GIBSON: Well, that's why, presumably, for example, in the Kettering case, the question of valuation was kept separate from the fundamentally underlying question, because there is a simple way of addressing this and ---

...

... - the hearing would be split

...

... both valuers, in effect, defer the valuation exercise until they're aware of the court's determination as to whether the McKerrell before was achievable, or whether some other, and if so, what other is achievable. That has happened. My learned friend and I did it in the Land Court in a case some years ago. And the valuers in that case proceeded to agree on the value because the -- most of the uncertainties had been removed. At this stage, ... their fundamental point of disagreement is not a valuation point. The point of disagreement concerns what development is -- would be achievable, ... in the before situation, area A and B, and what development was achievable in the after.

HIS HONOUR: As a potential purchaser ---

...

... would

...

... judge those things.

MR GIBSON: Exactly. ... I'm not submitting there is a requirement for mathematical, or quasi mathematical precision or accuracy in the evidence that a party, in the position of the appellant, puts forward. But at the end of the day, there has to be an evidentiary basis for the conclusion the court is going to draw.

...

It's all very well for Mr Brett to say, well, if you're going to reduce the GFA, then all you've got to do is tinker with my schedule because it all ... pro rata's out, ... but you've got to know what the reduction in the GFA is first. And we don't have any evidence about that.

...

... what one would have expected to find is a series of alternative plans by Mr McKerrell. ... If Mr Venn's accepted, here ... plans to accommodate that and the valuers address them.

...

... the appellant, being the onus of proof is incumbent upon it to either provide valuation evidence which responds to the court's determination of what was the before development potential ... and what was the after development potential ---

HIS HONOUR: Or a formula ---

MR GIBSON: Exactly.

HIS HONOUR: In a way, there's a formula there

...

... as we went on, we got Mr Brett applying the formula.

Mr Slater said that it gets a bit rough and ready ---

...

... as the cost per potential apartment balloons.

MR GIBSON: Exactly. So Mr Brett said well, look, if you knock a few units off here, and he gave his exhibit 235 or something, if you knock a few units off, then you just reduce the GFA, and then you can discount by \$360 per square metre, which is my rate in my schedule, and you get the lower figure. Well, that's – that may be accurate if we're knocking a few units off, but its deceptively simple and ultimately misleading if we are talking about a more extensive reworking of either the before or the after. Because, as Mr Slater said and it's just common sense, a point will be reached where it's not a straight line reduction, because you've got the elephant in the room which is the development cost sitting here and ... you'll get to a point ... where you can't go on with - linear reduction."

- [301] Next morning, Mr Gibson came armed with authorities: *McCrohon v Harith* [2010] NSWCA 67, with reference to paragraphs [101], [107], [117] and [121]; *Narni Pty Ltd v National Australia Bank Limited* [2001] VSCA 31 making reference to [23] and [32] and *Ray Teese Pty Ltd v Syntex Australia Limited* [1998] 1 Qd R 104 at 109 ff, in which as the trial judge I had erred in making what amounted to a "speculative" assessment of damages. In reviewing the many authorities defining a court's duty where the assessment of damages is "difficult" given the state of the evidence, Pincus JA said at 110.

"The competing considerations are that to insist on more certainty of proof than is reasonable may unfairly disadvantage the plaintiff who, perhaps because of mere lack of foresight or incompetence, is unable to give a reliable account of the losses suffered. On the other hand, it would seem unfair to the defendant, at least in some circumstances, to make an assessment of damages which is no more than a guess, where the situation is such that a reasonably accurate estimate of the true amount of the loss could have been made, had the plaintiff taken any trouble about the matter."

- [302] It may be an open question whether the principles found in cases about assessment of damages apply in assessment of compensation under a provision like s 3.5 of the PEA, although it is easy to slip into using the expression "assessment of damages" to describe the court's present task, as Mr Hughes did at T38-62, responding to the Council's argument. He relied on *Brisbane City Council v Bortoli* [2012] QLAC 8 at [42] ff, as showing that in valuation cases "you don't need too much precision". There the claimant's evidence had not established any highest and best use for resumed land which the Court considered feasible; it was held entitled to form a new view of the highest and best use and determine compensation accordingly. That decision does not persuade me that flexibility is available here to the extent of permitting decisions to be made as to before and after highest and best uses at any points within the architects' combined ranges and then applying figures offered in the valuation evidence suggesting sums in dollars per square metre of GFA, per apartment or per residential allotment. Acknowledging Mr Hughes' point (T38-65) that Mr Slater had accepted there was nothing extraordinary about development costs which might stand in the way of "discounting" if Mr McKerrell's opinions were too optimistic, I am of the view that one is justified in proceeding only so far in this way; in other words, there are limits. As one gets close to the realm of Mr

Robinson's scenarios and numbers, a discounting-type exercise becomes so problematic that it can instill no confidence whatever and should not be pursued. Mr Hughes is no doubt right that, quoting McPherson J in *Nilon v Bezzina* [1988] 2 Qd R 420, 424, "the degree of precision with which damages are to be proved is proportionate to the proof reasonably available."

- [303] At the end of the day, it is obvious that without much percentage effect on length of the appeal, additional development scenarios could have been devised and presented to the valuers for conversion to market prices. Last October the chasms separating the architects in their views of the highest and best use before and after had appeared clearly. The parties declined the court's offer to make as many further hearing dates as were required available in 2013, when only the valuers, evidence was outstanding. In effect, the court was committed to a two-part hearing. No request was made that the court rule on what one might call the architects' issues. On the last day of the hearing, 28 February 2014, the appellant sowed the seeds of the idea of the parties coming back to give the court "some assistance with respect to the mathematical calculations", in reliance on *Metroplex Management Pty Ltd v Brisbane City Council* [2010] QCA 333 [see T38-73]. It is too late for that now.
- [304] In any event, the court's determination is that Mr Robinson's before and after cases for both Area A and Area B are essentially correct in the sense that they describe the development potential a prudent purchaser properly advised would be prepared to pay for in an unconditional cash contract, and also what a vendor willing but not anxious to sell would settle on the basis of.⁵⁰ Mr Robinson may have been (I do not say was) too negative about three-storey development in Area B in the before case, as Mr Venn suggested, but any understatement by him of the development potential would be modest and in my opinion not quantifiable by a process of working backwards and downwards from market values attributed to Mr McKerrell's before case, which was of a different order entirely: it would have been more appropriate to start by assessing market value on Mr Robinson's before case and then working up. In the circumstances, I am not troubled at the thought that acceding to the Council's submission under discussion would result in unfairness or injustice, given the way in which the appeal has been conducted.

The Sparke point

- [305] The Council relied, effectively all along, on an important decision of the Court of Appeal, *Sparke v Noosa Shire Council* [2001] 1 Qd R 344, affirming [1999] QPELR 126⁵¹ as a basis for rejection of the appellant's claim for the most part, if not entirely. Mr Brett's opinion was that at the relevant date the market value of Area A fell from \$24.36 million to about \$11.8 million, that of Area B fell from \$17.49 million to \$2.63 million. Rezoning of the latter from Future Urban would have been necessary for any development, including Mr McKerrell's "before" case, based on Residential Medium Density Zone. Rezoning of Area A to Special Facilities may have been necessary to achieve the architects' maximum potential GFA given the 1990 planning scheme's non-relaxable GFA limit of 13,600m² per

⁵⁰ In the after case for Area B, Mr Robinson of course swore to development potential in excess of what the valuers considered a purchaser would pay for.

⁵¹ The claim was for injurious affection by reason of the 1997 Strategic Plan changing the PDLU description of land zoned Non-Urban from Urban Area to Rural Conservation PDLU for the most part, otherwise to Open Space-Conservation and Waterway Protection.

“site”. Rezoning at all relevant times required approval of the local government and in turn approval of the Governor-in-Council. Many compensation claims under s 3.5 rely on injurious affection attributed to strategic plan changes, the claimant contending that in the “before” case such rezoning as might be necessary to the propounded, and now frustrated, development scenario could have been anticipated in the “before” regime.

- [306] Where, as here, the Council relies on s 3.5(4), paragraph (d) in particular, as establishing an apparently wide exception to the “very expansive”⁵² entitlement to compensation under subsection (1), an onus is imposed on the claimant for compensation to establish an exception to the exception. What must be shown is a legal right in the before situation to use the land for the relevant particular purposes prohibited or restricted from the relevant date. The notion of a legal right is expanded in aid of a claimant so placed by s 3.5(5):

“For the purposes of subsection (4)(d), it is not to be taken that an applicant did not have the legal right referred to in that subsection by reason only that the applicant's right depended upon an exercise of discretion by the Local Authority in the applicant's favour if the applicant shows that it is reasonable to expect that the exercise of discretion would have been in the applicant's favour had it been sought immediately before the relevant provision of the planning scheme came into force.”

- of which the Court of Appeal said at 346:

“Cancelling the double negative at the beginning of the provision, its general intention appears to be, to put it simply, that there must be taken to be a legal right, for the purposes of para 4(d), in cases where the only reason for saying otherwise is that the right depends upon an exercise of discretion by the local government, if the exercise of discretion by the local government could be expected to have been favourable.

But here one cannot postulate that the only reason for saying that there is no legal right is the existence of a discretion in the local government. Another reason, equally potent, is the existence of a discretion vested in the Governor-in-Council. I understand the appellants’ counsel to say that it is unlikely that the legislature intended to exclude from the benefit of the compensation provisions claimants in the position of the appellants and it is manifestly unjust to do so. But the literal interpretation of the relevant provisions does not leave them without practical effect and the language is, in my view, quite clear.”

- [307] This decision binds me. To the extent that the before case depended on achieving a rezoning, it prevents the appellant’s establishing the “helpful” (to its case) exception to the “unhelpful” exception on the assumption that the latter applies. Further, although the Council approved rezoning in R221, there was no “legal right”, as

⁵² The High Court’s description. See *Kettering* (infra) at [28].

approval of the Governor-in-Council was wanting at the relevant date, and could not be presumed under s 3.5(5). Indeed, approval had already been directly refused on 22 February 1990: Exhibit 134 p 400_9. The appellant argues that *Sparke* does not embarrass it, because its claim is expressly on the basis of s 3.5(1)(a)(i), so that the Council never gets into a position to rely on subsection (4)(d). It is suggested that *Sparke* is in doubt since a decision of the High Court in 2004 which made reference to it in footnote 11.

- [308] The High Court decision is *Kettering Pty Ltd v Noosa Shire Council* (2004) 78 ALJR 1022; 207 ALR 1; 134 LGERA 99, not reported in the Commonwealth Law Reports. Kettering's claim in respect of the Banana Plantation Site on Noosa Hill followed gazettal of the Noosa Hill Development Control Plan on 21 September 1991. It was for \$9.3 million for injurious affection occasioned by "the coming into force of a [DCP] provision ... and/or a prohibition or restriction imposed by or under [the DCP]", replicating the alternatives in s 3.5(1)(a)(i) and (ii). In this court a preliminary issue as to whether one of the "before" options, one based on a future rezoning, was incapable of supporting a compensation claim was determined favourably to *Kettering*: it was held that the DCP, which indicated intentions to reduce subdivisional yields, did not have the effect (to quote s 3.5(4)(d)) "by its operation" of relevantly prohibiting or restricting use of land; section 3.5(4)(d) did not avail the Council. The Court of Appeal disagreed. It was held by the High Court (the parties agreeing) that it was erroneous to issue an order precluding the claim to compensation based on before options that did not require rezoning; more importantly, for present purposes, the High Court rejected the Court of Appeal view of what constituted restricting:

"[26] The DCP had no prohibitory effect upon the appellant's use of the land. Its effect, although no doubt significantly so, was no more than influential. The respondent submits however that this means that its effect was at least restrictive, and therefore that it falls within the alternative limb of the exception contained in s 3.5.4(d), as a provision of a planning scheme which, by its operation, restricts the use of land.

[27] In our opinion 'restricts' should not be read in this way in s 3.5(4)(d). To give the word "restricts" such a meaning as, 'restricted by influencing' or 'by having a strong bearing upon' would be to give it a strained and artificial meaning, and one not compelled, either by the context of its use as held by the Court of Appeal, or by any extraordinary consequences otherwise.

[28] Section 3.5(4) does not expressly or by implication confine compensation to affection which is direct and immediate. The meaning of s 3.5(1)(a)(i) is not to be construed as the Court of Appeal did, by reference almost exclusively, to the exceptions to it. The appropriate approach is to identify the extent to which the very expansive right to compensation which it confers, is reduced by the subsequent exceptions for which s 3.5(4) provides. ..."

- [309] After observing upon various subparagraphs of s 3.5(4), the reasons continue:

“... It can be seen that each exception is quite specific, and not, as the Court of Appeal held, confined to instances of remote or indirect effects on value, expressions nowhere used in the Act.

[29] The Court of Appeal was of the opinion that acceptance of the construction urged by the appellant would produce an anomalous, indeed extraordinary result that an injurious affection by way of a prohibition or restriction upon use would not attract compensation, whereas such an affection by way of an indirect and only influential change would. But this is to overlook the particularity and limited nature of the subject matter with which s 3.5(4)(d) is concerned: the prohibition on the use of land, or the restriction on use of buildings or other structures, *for particular purposes*. The effect of the DCP here is upon the potential of the land for subdivision, and greater intensity of use, and not of use for a *particular purpose*. It should be pointed out that this is a different construction of s 3.5(4) from the one placed upon it by the Court of Appeal in *TM Burke Estates Pty Ltd v Noosa Shire Council* in which it was unnecessary to construe the section for the purposes of the decision.

[30] There is nothing in the language of s 3.5 which requires that a distinction be drawn between direct and indirect effects. To do so is to introduce concepts themselves imprecise and removed from the words actually used.”

The disapproval of *Burke* is in marked contrast with *Sparke*’s surviving unscathed. The consequences of *Sparke* (an *ex tempore* decision whose correctness seems patent) are so draconian that one would expect the High Court to have added a fourth correction of the Court of Appeal to the three administered, had it been considered that *Sparke* was wrong.

- [310] The drafting of s 3.5 attracted much adverse comment, restructuring and reworking being advised at [33]. Half a dozen different expressions in subsections (1), (4) and (8) (two used twice) were considered all to refer to the same event – gazettal “and therefore the occasion for the commencement of ... legal enforceability” – including the relevant expressions in (1)(a)(i) and (1)(a)(ii): paragraph [25]. More specifically, at [23], the Court made it clear that (i) and (ii) added nothing to the other, but described the same thing. In the circumstances, I reject the appellant’s assertion that it can exclude s 3.5(4)(d) by asserting that its claim has nothing to do with (1)(a)(ii). I think that (4)(d) applies to a claim expressly based on (1)(a)(i) as much as to one based on (1)(a)(ii). In my opinion, the appellant cannot be heard to say that the 1997 Strategic Plan does not “restrict” particular uses. Not only do the written submissions expressly state in dozens of places that it does, the allocation of more of the site than heretofore (including RHD and FU-zoned land) to an open space PDLU designation at the expense of terrain formerly designated Urban Area restricts: there will arise new scope for conflict with the strategic plan which would require the Council or this court to refuse a development application in the absence of sufficient countervailing grounds.

- [311] Reference was made to *Barns v Maroochy Shire Council* [2010] QPELR 419 whose headnote states:

“Under the 1985 planning documents, the subject site was zoned Rural A. Approximately two-thirds of the site was included in the Urban Areas preferred dominant land use designation, while the remaining third was included in Rural Areas preferred dominant land use designation. After the relevant date, the subject site, whilst still zoned Rural A, was thereafter included in the following preferred dominant land use designations:

- Rural or Valued Habitat (majority of the site affected by this);
- Conservation; and
- Agricultural Production.”

The court determined, in a way contrasting with my determination immediately above, that the case was one like *Kettering*, that the new strategic plan did not by its operation restrict or prohibit any use “in the relevant sense” but rather affected potential for subdivision and greater intensity of use: see [76]. The Barns had elected to proceed under s 3.5(1)(a)(i), like the appellant here. They failed on grounds other than *Sparke*.

- [312] The appellant says that the 1997 Strategic Plan does not “prohibit or restrict in the relevant sense” any use of its land (the italicised words having been added to paragraph 81 of its written outline late, in closing oral addresses), asserting that [26] in *Kettering* describes its situation. It seems to me, however, that the very point of strategic plans is to deal with uses, as stated in s 2.4 of the PEA; the corresponding section about development control plans (2.5) says nothing about uses. I reject the submission at paragraph 82 that the new provisions (like the DCP provisions in *Kettering*, which was not concerned with a “strategic plan” and uses the expression only once, in paragraph [3], in paraphrasing s 2.1 of the PEA) are about “potential of the land for subdivision and greater intensity of use, and not about use for a particular purpose” – or “particular purposes”, as the Council points out, by reference to the *Acts Interpretation Act 1954*.

- [313] The *Sparke* point succeeds. So far as the claim concerns Area A, that could not have been decided without a trial, which for reasons explained elsewhere is found to have had the same development potential before and after the relevant date. The Council thus has no need to invoke *Sparke* so far as Area A is concerned, except to the extent that a rezoning might have been postulated. Area B, of course, could not be developed without rezoning. In other contexts one might be concerned that a landowner was left by changes in strategic planning with land reduced to a fraction of its value otherwise, by recourse had to *Sparke*. I am not persuaded that the appellant here finds itself the victim of an uncompensated “loss”, to use Dixon J’s term. That is all by the bye. Ignoring any effect of *Sparke*, the Council has established to my satisfaction that at the relevant date there occurred no diminution in development potential of the site – and therefore no diminution of market value.

Conclusion

- [314] For the foregoing reasons, the appeal should be dismissed. The appellant applicant does not show that its interest was "injuriously affected", which is the essential foundation for recourse to s3.5 of the PEA. The parties are invited to make submissions in writing as to any further orders which might be made under general liberty to apply.

Appendix 3 – Swan judgment

PLANNING & ENVIRONMENT COURT OF QUEENSLAND

CITATION: *Swan v Santos GLNG Pty Ltd & Ors* [2017] QPEC 2

PARTIES: **STEPHEN JOHN SWAN**
(applicant)

v

SANTOS GLNG PTY LTD ACN 131 271 648
(first respondent)

and

PAPL DOWNSTREAM PTY LTD ACN 147 649 205
(second respondent)

and

TOTAL GLNG AUSTRALIA ACN 146 680 524
(third respondent)

and

THE CHIEF EXECUTIVE ADMINISTERING *THE ENVIRONMENTAL PROTECTION ACT 1994*
(fourth respondent)

FILE NO/S: D80 of 2015

DIVISION: Planning & Environment Court

PROCEEDING: Application

ORIGINATING COURT: Planning & Environment Court, Maroochydore

DELIVERED ON: 3 February 2017

DELIVERED AT: Planning & Environment Court, Maroochydore

HEARING DATE: 13 to 17 June 2016 and 18 August 2016

JUDGE: Robertson DCJ

ORDER: The application is dismissed

CATCHWORDS: PLANNING AND ENVIRONMENT; ENVIRONMENTAL LAW: Where applicant asserts that the first three respondents have breached Environmental Authorities affecting his land imposed in relation to the Gladstone Liquefied Natural Gas Transmission pipeline that was constructed over part of the land in 2013 – 2014; where the

applicant seeks orders pursuant to s505(5) of the *Environmental Protection Act 1994*.

PARTICULARS: where first three respondents assert that the case presented against them was never properly particularised by the applicant as to the offences alleged to have been committed, and the dates and facts and circumstances of such offences.

STATUTORY INTERPRETATION: where Environmental Authorities issued under the EPA are Statutory Instruments and to be construed in accordance with general principles of statutory construction.

NO CASE TO ANSWER: where respondents filed a no case application prior to trial which was heard as part of the trial process; whether the respondents had a case to answer in the absence of proper particulars and/or where remedies sought were incompetent and beyond the jurisdiction of the Court.

Legislation considered

Environmental Protection Act 1994 s 505

Planning and Environment Court Rules 2010

Environmental Planning and Assessment Act 1979

Land and Environment Court Act 1979

Sustainable Planning Act 2009 ss 441, 446(1)

Statutory Instruments Act 1992 ss 6, 7(2)(c), 7(3)

Acts Interpretation Act 1954 ss 14A(1), 14B(1) and 35C

Cases

Briginshaw v Briginshaw (1938) 60 CLR 336

Caloundra City Council v Taper Pty Ltd & Anor [2003] QPELR 558

Crowther v State of Queensland [2003] QPELR 346

F Hannan Pty Ltd v Electricity Commission of New South Wales [No. 3] (1985) 66 LGRA 306

Gill v Donald Humberstone & Co Ltd [1963] 3 All ER 180.

Rasomen Pty Ltd v Shell Company of Australia Ltd (1997) 75 FCR 216

Warringah Shire Council v Sedevic (1987) 10 NSWLR 335
Zappala Family Co Pty Ltd v Brisbane City Council (2014) 201 LGERA 82

COUNSEL: R Litster QC of Counsel for the Applicant
 J Horton QC and Mr D.M. Favell of Counsel for the Respondent

SOLICITORS: P & E Law for the Applicant
 Carter Newell for the 1st, 2nd, and 3rd Respondents
 Mr Stephen Barclay for the 4th Respondent

Introduction

- [1] The applicant (Swan) owns two properties near Moura in central Queensland known as Inala (Lot 12) and Mulawa (Lot 3). He also owns other nearby properties which together with Inala and Mulawa he uses for grazing beef cattle and operating a cattle stud. He was born and raised on Inala and, apart from time away with schooling and undertaking an apprenticeship as a diesel fitter, he has lived there all his life. His properties are operated through a trustee company, Shadyland Pty Ltd. He is a beneficiary of the trust and sole director of the trustee company.
- [2] He has provided a number of lengthy affidavits in these proceedings and he gave oral evidence over many hours. He impressed me as a passionate man with a real and abiding love for his property; and a grazier who has always operated his business to the highest standards of land management and animal husbandry. He has extensive lay knowledge of soil and water management and chemistry and grass management and weed control consistent with a man who has devoted his life to the proper management of his property.
- [3] I accept his unchallenged evidence that at present his aim is to have his farm including Inala and Mulawa organically certified.
- [4] In 2008, when his father was still alive, they were approached about the construction of a section of the Gladstone Liquefied Natural Gas Transmission Pipeline (pipeline) through Mulawa and Inala.
- [5] The construction of the pipeline was a massive infrastructure project undertaken by the first three respondents.

- [6] The proceedings involve allegations of various breaches of environmental authorities held by the respondents. The Amended Originating Application (AOA) filed by Swan on 18 August 2015, sets out (at 5-10) the relationship between the first three respondents. For the purposes of these proceedings that relationship is not relevant. I will refer to the first three respondents as (Santos). The fourth respondent was represented throughout by Mr Barclay whose role was neutral and of assistance to the Court. It has never prosecuted or threatened to prosecute Santos for any alleged breaches of the environmental authorities.
- [7] The extent of the pipeline undertaking can be gleaned from the affidavit of Andrew Brier filed 2 October 2015 (C.D.29). From 2012, he held various positions with Santos enabling him to give an overview of the project.
- [8] He describes the process in relation to the construction and commissioning of the 420 kilometre pipeline from the Surat and Bowen Basins in central Queensland to Curtis Island off Gladstone at para 11 of his affidavit:
- “11. Construction of the lineal component of the (‘pipeline’) was an intensive process in which approximately 420 kilometres of pipeline was installed. The whole of the pipeline was constructed as one linear project and scheduled accordingly. That brought with it a level of complexity and logistical difficulties that attend large scale lineal projects of that kind. Moreover, it necessitated considerable excavation and earthworks through different seasons and different soil types and terrains and across the land of many different landholders.
12. During peak construction of (the pipeline), there would have been some 2000 to 3000 sub-contractors working along the 420 kilometre pipeline.”
- [9] The initial contact (and indeed much contact thereafter when difficulties arose) between Swan and Santos, was with their land agent, Dean Salter. After 2012 when Mr Brier commenced employment with Santos, Salter was below him in the Santos chain of command. Salter has filed a number of affidavits but they were not relied upon by Santos.
- [10] As Swan explains, prior to 2008, three other companies had constructed pipelines through the farm. The experience in dealing with those projects informed his negotiations with Santos in relation to the pipeline.

- [11] Ultimately agreement by way of Deeds of Option for Easement, Upfront Compensation with Santos were entered into in relation to both Lots 3 and 12 in late 2010. I accept Swan's evidence that the main focus of his and his father's concerns in relation to both properties is as set out in para 33 of his affidavit filed on 26 August 2015:

“33. During those negotiations, my dad and I told Dean we wanted to preserve the qualities of the farm and in particular the soil. The Line List that became part of the Deeds identified particular matters of concern that we raised including how to deal with:

- (a) access;
- (b) felled timber;
- (c) compaction relief;
- (d) reseedling;
- (e) weeds;
- (f) surface disruption;
- (g) excavated materials (particularly as the farm was acknowledged to be free from surface rocks);
- (h) stock movement;
- (i) soil subsidence; contour banks and erosion control;
- (j) soil inversion;
- (k) general ‘housekeeping’; and
- (l) fencing.”

- [12] The Line Lists in both Deeds (which are annexed to his affidavit) reflect these concerns.

- [13] Approximately 120 properties have been traversed by the pipeline and actual work on the Swan properties to construct the pipeline over Inala and Mulawa commenced around March or April 2013. There is no real dispute that clearing and grading started on the eastern boundary of Mulawa, and then progressed through Mulawa from east to west to the Theodore – Baralaba Road. Thereafter clearing and grading progressed from the Theodore – Baralaba Road through Inala to its western boundary.

- [14] It is common ground that in 2011, Saipem Australia Pty Ltd (Saipem) contracted with GLNG Operations Pty Ltd (which acted and acts) on behalf of Santos, to design, supply, construct and commission the pipeline. As Swan and his common law partner, Ms Alison Hotz, attest in their affidavits, he and she had many dealings with Saipem employees and/or sub-contractors about their concerns about the

pipeline construction over Mulawa and Inala as it progressed. No witnesses from Saipem gave evidence in these proceedings.

- [15] Alison Hotz (Alison) has provided a number of lengthy affidavits and also gave oral evidence and was cross examined. She is Swan's partner and has lived with him at Inala since September 2013. She has known him for many years. In June 2014, Swan gave her a Power of Attorney to enable her to assist him in dealing with many problems he had with the way in which the pipeline was being constructed, which had by then become overwhelming for him.
- [16] She was at a number of meetings when Swan's concerns were expressed. She took extensive contemporaneous notes. Again, apart from in relation to subtle detail to which I will refer later, her evidence is largely unchallenged. She presented as an intelligent careful witness with excellent recall of events and conversations. She also undertakes (as at all material times she was undertaking) administrative duties on behalf of the trust in relation to the day to day business of the farm.
- [17] Exhibit 7 is a copy of a Farm Plan for Mulawa which generally depicts the area of the pipeline corridor through the property, and ex 8 is a similar Farm Plan for Inala which shows generally the position of the pipeline corridor. There is some evidence that the exhibits may in fact be approximately a kilometre out in a linear sense, but nothing turns on this. The corridor (by reference generally to the easement) is referred to in the AOA and the evidence as the Right of Way (the RoW).
- [18] The RoW proceeds over a length of almost 9 kilometres through both properties. On exhibits 7 and 8 it is described (in part) by reference to each "Kilometre Point" (KP), as it passes west to east. Each KP is assigned a number which represents the distance in kilometres from the western point of the pipeline. KP240 lies to the west of the western boundary of Inala. KP241-243 all lie within Inala, and KP244-248 all lie within Mulawa, and KP249 lies to the north east of the eastern boundary of Mulawa. The RoW is 40 metres wide, with 30 metres for the pipeline trench and 10 metres for access and onsite works.
- [19] Swan was not aware that Santos (at all material times) held Environmental Authorities, one which took effect from 1 November 2011 (the 2011 EA), and

another which took effect from 24 March 2015 (the 2015 EA). The terms of each EA are materially the same. The 2015 EA refers to a Meridian Interconnector now constructed on Inala adjacent to the intersection of the RoW and the Moura – Baralaba Road, to connect the pipeline to other Liquefied Natural Gas Transmission Pipelines. The construction of the Interconnector on Lot 12 and partially on the RoW, was the subject of separate litigation in the Supreme Court involving the same (or similar) parties and was compromised on a commercial basis. It only has some relevance to these proceedings to which reference will be made later.

- [20] Swan alleges that almost from the commencement of works by Saipem to construct the pipeline, major events occurred which he now alleges constitute breaches and/or potential breaches, and in some cases, continuing breaches, of the EA's. For example he alleges that early in the construction phase, and as a result of wet weather making it difficult to work on the RoW, rock was deposited between KP244 and KP245 on Mulawa causing major interference with soil profiles. As a result of vehicles being driven in wet weather, deep wheel ruts and holes were left in the RoW. In April 2013, while he was in hospital, good red soils from around KP243 on Inala were moved into an area around KP242 to enable work to continue in the wet, resulting in what he alleges to be irreversible damage to the soil profiles in that area. He alleges that temporary fencing of the RoW was not complete causing concerns for the safety of his cattle. He alleges that his many complaints to Dean Salter and Saipem representatives were ignored or deflected.
- [21] In October 2013, at a time when the pipeline trenches were being backfilled and the RoW being re-levelled, he alleges that contrary to his express instructions to one Brent Howes,, who was then the “team leader” for Saipem, soil, gravel, rock and other under- bore material from the pipeline excavation works under the Theodore – Baralaba Road, was spread from the road to KP244 on Mulawa, increasing the height of the land in that area by approximately 300–400 millimetres over an area of about 3000m². He alleges that Howes told him, when they had an angry confrontation about the issue, that he had “been instructed to bury rock in the RoW to get rid of it”, but he would not reveal the source of the instructions.
- [22] He noted that the material had been covered with topsoil. He also alleges that during construction, clay was taken from the large dam on Inala to fill in subsidence

both east and west of the KP241, resulting in a significant change in soil profile which is now inconsistent with the profiles outside the RoW.

- [23] He alleges other instances where rock and soils different to those on his property were spread on the RoW. As he notes, the Line Lists acknowledge that Inala and Mulawa were free from surface rock. He also alleges that during construction, berms and contour banks in and around the RoW were disturbed or destroyed and were not, and still have not been reinstated appropriately, except for one large berm reinstalled by him for which he was paid by Santos.
- [24] In paras 171-179 of C.D.22 he complains of multiple examples of waste both along and outside the RoW as a result of the pipeline construction. He complains of dam contamination and serious ongoing problems with subsidence along the pipeline trench area particularly on Mulawa.
- [25] He also complains of inadequate reseeding in the rehabilitation stage, and the proliferation of weed species previously controlled on his property.

The nature of these proceedings

- [26] As pleaded in the AOA, Swan seeks orders pursuant to s 505 of the *Environmental Protection Act 1994* (the “EPA”). The orders sought are as follows:
- “1. An order under s 505 of the *EP Act* that (Santos), cause all works on the applicant’s land to cease until measures have been put in place to secure compliance with the Environmental Authorities granted under the *EP Act* for the petroleum activities for PPL166.
 2. An order under s 505 of the *EP Act* that (Santos) cause an independent investigation be undertaken as its cost, by an expert appointed by the Court, to identify all respects in which the Environmental Authorities granted under the *EP Act* for the petroleum activities for PPL166 have been contravened on the applicant’s land and the measures to be taken to remedy these contraventions.
 3. An order under s 505 of the *EP Act* that (Santos) cause the contraventions to be remedied by the measures identified by the independent investigation.
 4. Such further or other orders as to the court may seem just to remedy the contraventions of the Environmental Authorities granted under the *EP Act* for petroleum activities for PPL166 that have occurred on the applicant’s land.

5. An order that (Santos) pay the applicant's costs of these proceedings on such basis as to the court may seem just having regard to all the circumstances."

[27] Relevantly s 505 of the *EPA* is in these terms:

- "(1) A proceeding may be brought in the Court for an order to remedy or restrain an offence against this Act, ...
... by—
...
(c) someone whose interests are affected by the subject matter of the proceeding;
...
(5) If the Court is satisfied—
(a) an offence against this Act has been committed (whether or not it has been prosecuted);
...
the Court may make the orders it considers appropriate to remedy ... the offence."

[28] There is no dispute that Swan has standing pursuant to s 505(1)(c) of the Act; or that this court has jurisdiction; although an argument is advanced by Santos that Orders 2 and 3 sought in the AOA in their present form are beyond jurisdiction for legal reasons.

[29] Santos has continuously complained that Swan has not properly particularised what "offences" he alleges have been committed, and indeed made an application to strike out the AOA on the basis that it disclosed no case to answer, which application remained extant at the time of the hearing. Santos was content for its strike out application to be considered as part of its "no case" submission made after the court had heard all of the evidence.

[30] On 18 May 2016, when I listed the matter for hearing, I ordered Swan to deliver a list of issues which identified those matters which he contends were actionable under s 505 and continuing to affect his land. That list (filed 9 June 2016) did not identify, by reference to any offence under the Act, the section or sections relied upon.

[31] On day 5 of the hearing (17 June 2016), at a time when Sutherland had given evidence and Mr Brier was about to give evidence, and it was obvious that the matter would need two more days to complete, which were to be 18 and 19 August, I said this to Mr Litster:

"HIS HONOUR: But there is a threshold question and it seems to me the way the evidence has fallen out, the discretionary issues are more readily discernible and capable of being sorted out and worked out. But I can tell you I'm struggling at the moment in relation to the threshold question and I was going to ask you that when you make written submissions about section 505, subsection (5), that you identify the offence or offences by specific reference to evidence in the case.

MR LITSTER: Yes.

HIS HONOUR: And if you are going to submit that it's a continuing offence - - -

MR LITSTER: Yes.

HIS HONOUR: - - - I'd want a commencement date. If you're going to submit a specific offence that has a starting and ending date on the evidence, I'm going to ask you to specify that and to refer to the evidence and I think all this about subsection (4) arises out of the fact that to date that's not been done by you. You've given a list of actionable matters which comes from the grounds, but I'm just expressing to you what my concerns are and I think that's - well, that's certainly what your opponent has been talking about all the way through. So I think this is a product of the fact that you've not been prepared to give particulars of the offences - or the offences apart from referring to the affidavits and I don't want to have to do that myself. I want you to, as the prosecutor in the quasi-criminal side of it, and I think that's probably the reason that the - your opponents want to put on evidence in relation to a possible defence, bearing in mind that if leave is granted - - -

MR LITSTER: Yes.

HIS HONOUR: - - - and you feel that you need to reopen your case or you need to adjourn it to have further investigations done, well, I'll consider that. So that's my response.

MR LITSTER: I hear what your Honour has said. I won't respond at this point in time. I've made my submissions about the defence and I maintain those - my submissions."

[32] In his Outline delivered 17 August 2016 Mr Litster identifies various paragraphs of the AOA as constituting breaches of s 430 of the EPA (1-55 are the "circumstances", 56 pleads a breach of s 430); and 58 pleads as an alternative, a breach of s 431 of the Act.

[33] Sections 430 and 431 are (relevantly) in these terms:

“430 Contravention of condition of environmental authority

- (1) This section applies to a person who is the holder of, or is acting under, an environmental authority.
- (2) The person must not wilfully contravene a condition of the authority.

...

- (3) The person must not contravene a condition of the authority.

...

431 Environmental authority holder responsible for ensuring conditions complied with

- (1) The holder of an environmental authority must ensure everyone acting under the authority complies with the conditions of the authority.
- (2) If another person acting under the authority commits an offence against section 430, the holder also commits an offence, namely, the offence of failing to ensure the other person complies with the conditions.
Maximum penalty—the penalty under section 430(2) or (3) for the contravention of the conditions.
- (3) Evidence that the other person has been convicted of an offence against section 430 while acting under the authority is evidence that the holder committed the offence of failing to ensure the other person complies with the conditions.
- (4) However, it is a defence for the holder to prove—
 - (a) the holder issued appropriate instructions and used all reasonable precautions to ensure compliance with the conditions; and
 - (b) the offence was committed without the holder's knowledge; and
 - (c) the holder could not by the exercise of reasonable diligence have stopped the commission of the offence.”

[34] It is common ground that Swan has the onus of proving that “offences” have been committed on the balance of probabilities governed by the principles explained in *Briginshaw v Briginshaw* (1938) 60 CLR 336 (at 363 per Dixon J as the Chief Justice then was). However the proceedings are entirely civil in nature: *Caloundra City Council v Taper Pty Ltd & Anor* [2003] QPELR 558

See also the decision of his Honour Judge Robin QC in *Crowther v State of Queensland* [2003] QPELR 346; the only case that either party could find in which an application had been made by a private citizen for orders under s 505 of the *EPA*.

[35] Santos’s primary position is that there is no case to answer; primarily on the basis that the prayer for relief, and in particular the orders sought in 2 and 3 of the AOA, are incompetent as a matter of law. It then argues, by reference to the conditions of

the EA's said to be breached, that on a proper construction of the terms of those conditions, the evidence does not establish any breach of either s.430 or s. 431 of the EPA. Alternatively, it submits that if the court is satisfied that a breach of s 431 has occurred and has been committed by Saipem, Santos has a defence under s 431(4) of the Act. Even if the court is ultimately satisfied that offences have been committed by Santos, it submits that in the exercise of discretion the court should not grant the relief sought.

[36] It is common ground that the orders sought are discretionary in nature and that the exercise of the discretion is governed by the principles discussed in *Warringah Shire Council v Sedevic* (1987) 10 NSWLR 335 at 341 by Kirby P as his Honour then was.

[37] As to Orders 2 and 3 sought in the AOA Mr Horton QC and Mr Favell submit as follows:

- “(a) the relief sought in the AOA lacks the certainty essential to the ground of injunctive relief;
- (b) the relief would impermissibly involve the court delegating its function of being satisfied as the commission of offences under the *EP Act* to a private citizen (a court appointed expert);
- (c) no part of the relief seeks that the court be satisfied an offence has been or will be committed;
- (d) none of the relief seeks orders directed to remedy or restraining any offences found by the court;
- (e) the relief sought in Order 1 would be futile because the pipeline and the meridian Interconnector have been constructed;
- (f) the relief fails to specify a time by which the order is to be complied with;
- (g) the relief does not meet the requirements of s 505(6)(a) or (b) of the *Environmental Protection Act*.”

The expert evidence

[38] When Swan's Originating Application was filed on 26.5.15, no expert evidence was relied on. Both parties involved experts. Ultimately, the position of Swan is that, on the basis of the evidence of his expert, much more investigation needs to be done to establish the extent of the environmental harm along the RoW. Santos' position is essentially that:-

- (a) The expert evidence taken at its highest does not establish any breaches of the EA's; and
- (b) The work undertaken on the RoW since 12.11.15 under the supervision of its expert essentially provides for exactly what is sought by Swan in 2 and 3 of his prayer for relief.

[39] Mr Manning, on behalf Swan, engaged Steven Dudgeon ("Dudgeon") to prepare a report relevant to alleged breaches of the EA's as a result of an inspection by him of the RoW on Inala and Mulawa with Swan on 29 June 2015. As Dudgeon notes in his first report dated 18 August 2015 (CD 18) he drove the length of the RoW and concentrated on locations of major concern to Swan.

[40] As he notes, prior to the commencement of works, a preliminary soil management plan covering both properties was commissioned by Saipem. Relevantly he notes that the whole of Inala and Mulawa is mapped as Good Quality Agricultural Land ("GQAL").

[41] At that first inspection, Swan identified to Dudgeon particular areas of concern, which related to the alleged backfilling of pipeline trenches with shallow sodic heavy clay. As Dudgeon notes, sodic soils have a number of adverse properties including poor surface soil structure, surface crusts, extremely poor plant growth and other issues not conducive to developing pasture along the RoW. He noted five areas of major concern to Swan.

[42] Area 1 is an area around KP241, in which Dudgeon noted hard setting surface crusts characteristic of subsurface sodic soil. This is the area on Inala where Swan alleges that pipe trenches were backfilled with sodic subsoil clay, taken from what is

described in Exhibit 7 as the Big Dam on Inala. Dudgeon noted that the hard setting crusts were not evident in other local areas and “unexpected” in the top soil horizon.

- [43] Areas 2 and 3 (see page 14 of CD 18) are located east of KP242 and west and east of KP243 on Inala, in the area known as Red Hill South on Exhibit 7. Dudgeon (and indeed, Swan) described this as “the farm’s highest quality red earth soils.”
- [44] Dudgeon dug soil inspection pits, and noted in the RoW, that the pit (marked as pit one) had a shallow Red Earth A horizon, less than 250 mm in depth, overlaying a rocky sodic heavy clay layer B horizon. Pit two (see page 15 CD 18), which was dug outside the RoW in the same area revealed a soil profile of “deeper clay loams” to 1m plus.
- [45] Area 4 was west of KP 244 on Mulawa, in the area in which Saipem had spread the gravel rock etc. excavated from under the Theodore – Baralaba road along the RoW and covered it with top soil. Similar results to areas 2 and 3 were obtained and, as well, Dudgeon commented on the presence of a large blue rock in one of the pits he dug which was inconsistent with the soil profile outside the RoW.
- [46] Area 5, also on Mulawa, and east of KP244 revealed similar results, suggesting a shallow soil horizon overlaying rocky sodic heavy clay, which was inconsistent with the soil profile noted in pit 6 in the same area, but just outside the RoW.
- [47] Dudgeon also noticed significant subsidence present, on average, every 250m on Mulawa with an average depth of 0.5m. He also noticed more weeds in the RoW than in the rest of the farm, and a marked visual difference between plants in the RoW and the rest of the farm. He formed an opinion that conditions in the EA 2011 had “not...(been) complied with...”; and detailed reference will be made to the relevant conditions later in these reasons.
- [48] Dudgeon was acting on instructions from Mr Manning. One of the issues that has to be resolved is the adequacy of the case presented by Swan, on the basis that particulars of alleged offences have not been given. I do not criticise Dudgeon for expressing the opinion set out at page 26 of his first report, however, clearly the

opinion therein expressed is an opinion of law and not an opinion within his expertise to express.

- [49] He concluded that there was evidence of subsidence; the surface of the RoW had not been returned to a condition which serves the pre-construction use; pipeline trenches had not been rehabilitated; soil horizons are inconsistent with nearby soil profiles, top horizons of soil profile had not been reinstated; the land had not been reinstated to the pre-disturbed soil suitability class; and there was change in pasture including weed infestation.
- [50] He recommended a detailed site survey should be undertaken for soil profile and condition within the RoW, and this should be compared to native adjacent soil profile classifications, and undertaken at a maximum scale of 1:2500; a weed survey; a rehabilitation specific survey to compare the rehabilitation species to the current farming pasture species and a subsidence survey. He recommended from the surveys a revised rehabilitation plan be produced and implemented.
- [51] As a result of Dudgeon's report, Santos engaged agronomist, Mr Neil Sutherland ("Sutherland"), as an expert. There is no suggestion that either man is not qualified as an expert.
- [52] Sutherland's first report (dated October 2015) was filed on 5 November 2015 (CD31), prior to a contested review before me on 12 November 2015 in Brisbane. He undertook a site inspection of the RoW on 1 and 2 October 2015, accompanied by two of his staff. He was briefed with a copy of Dudgeon's report.
- [53] Dudgeon had noted in his first report that although he had a copy of a preliminary Soil Management Plan prepared in 2011, he did not have a Soil Management Plan prepared by Saipem in 2015, which identified a total of four soil orders on the site in accordance with accepted standards.
- [54] When Sutherland undertook his inspection, a representative from Dudgeon's company was present. Swan was also present for some of the inspection on 1 October and "voiced his concerns", which Sutherland found "helpful." Sutherland inspected the RoW from approximately KP241 on Inala, to KP248 at the eastern

end of Mulawa. Soils and vegetation cover was assessed at a total of twelve locations with six transects across the RoW. For each of the transects, at the orientated perpendicular to the long section of the pipeline, two sampling points were selected – one within the RoW and the other south of the RoW in an area undisturbed by pipeline works. In large part, his selection of the transects was informed by the areas identified in the Dudgeon report.

- [55] Transect 1 was in a low-lying level area near the western extent of the RoW near KP241 i.e. on Inala. As he notes, the two sampling locations at each transect were selected by using the “rock in the sock” method to randomly select and eliminate bias. This roughly coincides with Dudgeon’s Area 1, but is further to the west. As well as analysing soil horizons, he assessed groundcover on and off the RoW, and the presence of weed species.

- [56] Transect 2 appears to be east of KP242 on Inala in the Red Hill South area. It is approximately in the vicinity of Dudgeon’s Area 2.

- [57] Transect 3 is on Mulawa “near KP243.” From the oral evidence, and by reviewing the aerial photographs at 41-42 of CD31, this area seems to be much closer to KP244. KP243 is on Inala, and roughly accords with Dudgeon’s Area 3.

- [58] Transect 4 is said to be in the vicinity of KP244. Neither transect coincides with Dudgeon’s Area 4, which is of concern to Swan because of the spreading of gravel etc. on the RoW in that area by Saipem from the excavation under the road. Transect 5 is again on Mulawa but, in the report, is not related to a KP. It appears to be east of KP445 and west of KP246. Transect 6 is in the eastern portion of Mulawa and appears to be close to KP248. Sutherland undertook more extensive sampling than Dudgeon, but not (for example) in the western end of Mulawa in the area allegedly contaminated by material removed from under the road.

- [59] His conclusions are set out at 5.3 of his report. His opinion is that there was little difference between the RoW and the undisturbed areas in terms of ground cover. As regards vegetation, he noted observable difference in vegetation composition within a 10m radius at transect’ 3 and 4, and he noted a proliferation of undesirable

weed species within the RoW at transect 4. He was only able to locate obvious surface coarse fragments at transect 1 within the RoW.

[60] In his opinion, soil texture was similar (as between the RoW and undisturbed areas) at transects 1, 4, 5 and 6, but differed markedly at transects 2 and 3. Soil structure was “reasonably consistent” through transects 1, 3, 5 and 6, however at transect 2 and transect 4, there was significant difference between the soils in the RoW and those in the undisturbed area. He noted the presence of coarse fragments (i.e. within the soil) in both the RoW and in the undisturbed areas, but “were notably in higher proportion within the RoW at transects 1 and 2.” He thought these fragments were likely to be blast product, but he did not do sampling in Dudgeon’s area 4 in Mulawa, west of KP244.

[61] In relation to the important issue of soil profile (horizon) at 390 (page 16 of CD31), he wrote this:

“390. Evidence of mixed layering as determined by colour and/or texture was present within the RoW soils at transects one (0.15-0.30m) and transect five (0.10-0.30m and 0.30-0.50m). Inconsistencies in the soil horizons between the RoW and the undisturbed areas were also noted at transects two and four. In the case of transect two, the RoW exhibited multiple shallow topsoil horizons with heavier textures and darker colours compared to the lighter colours and textures of the undisturbed area. In the case of transect four, the RoW exhibited a massively structured, poorly drained B horizon from near surface (0.15m BGL) in comparison to the moderately structured B horizon encountered from 0.25m BGL in the undisturbed area. In my view, this indicates the soil profile has not been reinstated to its pre-disturbance condition at these locations.”

[62] He noted that soil moisture was predominantly higher throughout the undisturbed areas except for transects 2 and 4, and subsidence throughout the length of the RoW, which was particularly evident in the eastern portion of Mulawa.

[63] He was asked by Santos’ solicitors to address the EA conditions. In relation to condition D11 (EA 2011) after setting out the condition he writes:

“From my inspection and the assessment undertaken, there were multiple areas of subsidence, exposed subsoils (i.e. poor topsoil coverage or absence of topsoil) and poor soil structure, likely to have resulted from the disturbance, noted along the RoW. This indicates that some parts of the RoW had not been restored to a ‘land use condition that serves the preconstruction use’. However, the restoration of large parts of the RoW did meet the required condition, in my view.”

- [64] He then addressed conditions H5, H8 and H9 in EA 2011. He concluded from the inspection and assessment undertaken:

“Significant differences in soil horizons between the RoW and undisturbed areas were apparent in transects one, two, four and five. This included evidence of mixed soil and different soil texture and/or structure.”

In relation to EA 2011 condition 39, he wrote this:

“From my inspection and the assessment undertaken, I noted the presence of weeds included Parthenium, Horse Bean, Dog Burr, Cat Head, Deadly Nightshade and Scotch Thistle within the RoW, adjacent to and east of transect four and also within other areas generally where soil disturbances (e.g. subsidence, mixed soil and exposed subsoil), had occurred.”

- [65] At pages 25-26 he proposed a program to address the problems of soil inversion, weed infestation, serious subsidence and other issues addressed in his conclusion. He expresses his conclusions as follows:

“Acknowledging that there was to be progressive rehabilitation and the restoration of large parts of the RoW did meet the A conditions, it was evident that some areas had not yet been restored to a condition that serves the land’s pre-construction use. The soil profiles assessed along the RoW show differences when compared to the undisturbed area. The management measures that relate to this issue should be augmented to provide the necessary actions to address topsoil depth and exposed subsoils post reinstatement work.

While subsidence was observed within the RoW, the relevant management plans properly implemented are adequate to satisfactorily address the ongoing management of this issue. Weeds were found to be present mainly in areas exhibiting soil disturbance. In my view, the management plans that relate to this issue will appropriately address the ongoing management of weeds. The rehabilitation plan has been implemented within the required timeframe. However, further repair of the soils and the pastures, together with monitoring and reassessment of the efficacy of the rehabilitation plan measures, need to be addressed. The opportunity to complete these works in time to capture the most likely rainfall in February-March 2016, means the work should be implemented relatively quickly in my view.”

[66] In section 8 of his report, he set out his recommendations. He wrote:

“Acknowledging that at least along parts of the RoW, the rehabilitation of the soils and pastures to pre-disturbance conditions may cause more (further) disturbance than desirable, the following procedures should be implemented to help reinstate the soil profiles, address subsidence and manage weeds.

My recommendations for reinstatement and rehabilitation include three options depending on the degree of land form disturbance over the exiting (sic) condition at the time of my site inspection. The method of rehabilitation should be a simple three-step process of assessment, rehabilitation and monitoring to ensure the rehabilitation has succeeded.

This three-category process is summarised in the following table, where landform disturbance has been characterised as major, medium and minor. In these procedures ‘major’ disturbance extends across the entire RoW width, irrespective of the length along the RoW. ‘Medium’ RoW disturbance is disturbance greater than 150m² in area but less than the width of the RoW and ‘Minor’ disturbance is disturbance less than 150m². This has been based on well-established grassland management strategy of replacement, renovation or retention.

Area selection criteria	RoW width	>150m ² Area but less than RoW width	< 150m ² area	Notes
RoW disturbance	Major	Medium	Minor	
Actions	Slash RoW & whippersnip subsided areas	Slash	Slash	1
	Assessment	Assessment	Assessment	2
	Emu bob	Emu bob	Emu bob	3
	Spray	-	-	4
	Soil testing pH	-	-	5
	Rotavater	-	-	6
	Gypsum/lime	-	-	7
	Repair with topsoil	Repair with topsoil	Repair with topsoil	8
	Fertiliser	Fertiliser	Fertiliser	9
	Drawbar Seeding	Drawbar or hand seeding & tiling	Hand seeding & tiling	10
	Water	Water	Water	11
	Monitoring	Monitoring	Monitoring	12
	Reassessment	Reassessment	Reassessment	13
	Further repair	Further repair	Further repair	14

Notes:

1. Because of the successful pasture establishment across areas of the RoW the subsided areas can be camouflaged.
2. A post-slashing assessment is needed to categorise the areas to be rehabilitated.
3. An “Emu-bob” using five people behind the vehicle should be used to collect sticks and any surface rocks > approx. 100mm diameter for disposal. The disposal location should be either offsite or if the landholder agrees, on-site.
4. Spraying with gylophosate or equivalent.

5. Soil testing for pH to determine whether gypsum or lime should be incorporated.
6. First pass with “Crocodile” seeder could be used instead of rotavator.
7. Gypsum (soil 1:5 pH >6.5) or lime to be applied depending on soil test pH result.
8. Topsoil to be supplied from farm in consultation with landowner or certified weed-free from offsite.
9. Either Mono-ammonium phosphate or sulphate of ammonia fertiliser to be applied.
10. Drawbar seeding with “Crocodile” or drum seeder equivalent. Pasture mix to reflect original line list mix (Royal Seeds Biloela).
11. Watering to be completed from single track along RoW centreline if there is no rainfall >5mm within 14 days of seeding and thereafter weekly until 50% groundcover established.
12. Monitoring to be completed on a monthly basis until 75% groundcover established within sward of grasses in sown mix.
13. Reassessment to be completed between months 5 & 6 from seeding date.
14. Further repair to be completed if subsidence reoccurs over more than 5% of the RoW or 75% groundcover is not achieved.”

[68] As a result, there was a review before me on 12 November 2015 which involved a heated contest between two proposed orders. At that review, Mr Brier gave evidence and was cross-examined. As my reasons for judgment delivered that day reveal (see Exhibit 5 Part 2), ultimately I preferred the order proposed by Santos which required it to carry out the works recommended by Sutherland in his report by the end of January 2016. I noted in those reasons by reference to Swan’s then

untested evidence, that he had no faith in Santos' ability to rehabilitate his land to its pre-construction state unless forced to do so by strict orders. I also noted that Santos had complained that Swan has been obstructive and non-compliant in allowing them onto his land to carry out their legal obligations. Some of those preliminary observations are borne out by my assessment of the whole of the evidence.

[69] The order proposed on that occasion by Swan, I found, was overly proscriptive, and likely to provoke more argument. Mr Litster made it very clear to me that because the works proposed by Sutherland were not strictly defined; his client strongly opposed the making of the orders that I did make.

[70] The works proposed by Sutherland were undertaken, and assessed by two environmental officers employed by his firm on 18 and 19 January 2016. As at 25 January 2016 (CD38), Sutherland swore that his recommendations, (apart from ongoing, watering, monitoring and repair), had been implemented.

[71] In his affidavit filed 14 April 2016 (CD43) he referred to a further inspection by him and one of his employees on 10 March 2016. In his affidavit he states:

8. While Mr Holland (his employee) and I were on the property, I paid particular attention to the areas that had been the subject of subsidence repair, seed strike and groundcover rehabilitation. I made the following observations:
 - (a) The state of the Applicant's property had generally improved since my visit on 1-2 October 2015;
 - (b) There were limited areas suffering from subsidence; and
 - (c) Of the areas where grass seed had been spread, there had been a reasonable "strike" rate (when the seed has germinated) and grass cover.
9. In order to confirm the levels of grass cover, I undertook grass cover measurements using a "quadrat" (the same method referred to a (sic) page ten of my report dated 30

October 2015). The measurements were taken from six randomly selected points (all in the vicinity of those areas measured for my previous report). In all cases the ground cover exceeded 90 per cent.

10. The only area in which further erosion through tunnelling and/or subsidence was evident, was downslope of the red soil boundary on Inala. The area was relatively small – I would estimate it to be approximately 50m². It is located either side of a contour bank. As such, I recommend that additional gypsum be applied to the areas so as to stabilise the soil, before minor rehabilitation works are undertaken (i.e. reseeding and watering).
11. In some areas, it was evident that cattle had trampled areas where subsidence repair had occurred. For the most part, this is of little concern. However, in one area of subsidence repair on the eastern side of Mulawa property there had been very little strike. The soil had become hard set. This was most likely due to cattle trampling on the soil in wet conditions. To try and achieve a better strike area on that area, I recommend it be left to recover without cattle, harrowed and reseeded as soil moisture conditions allow.
- ...
13. I confirm that the recommendations contained in my report of 30 October 2015 have been implemented by (Santos) to the extent possible.
14. Whilst the recommendations have been implemented, the results have to an extent been curtailed by the lack of recent rain, the presence of cattle on the property and some further subsidence. Given those factors, I recommend:
 - (a) Further remediation of the subsidence area, referred to in para 10 above;
 - (b) Re-seeding of the area identified in paragraph 11 above; and
 - (c) Continued watering of the seeded areas.”

[72] There is significant dispute between the parties as to the extent to which Santos has addressed concerns raised by Swan and Dudgeon in the works supervised by Sutherland's firm and referred to in his affidavits above. In his affidavit filed 13 May 2016, Dudgeon refers to an inspection undertaken by him on 29 January 2016 along the entire length of the RoW. He says this:

3. It appeared that the works that took place during December 2015 and January 2016 were focused on filling areas of subsidence and erosion with topsoil provided from the property. There had been some ripping of access tracks within the RoW,
4. I saw no evidence of work to rehabilitate poor soil structure, to reinstate modified soil profiles, to remove rock within the soil profile or return filled areas to their pre-disturbance level. For example, the area at the western end of the RoW on Mulawa (where the level of the land appears to have been raised during the construction of the pipeline) did not appear to have been reinstated to its pre-disturbance level.
- ...
6. Although it is said that an emu-bob occurred prior to slashing, during my inspection I noted rocks, sticks, pegs and rubbish within areas of the RoW that otherwise appeared to have been the subject of work and were meant to have been cleared following the emu-bob. Photos I took record examples of this.
7. Within the areas that had been the subject of work, there were examples of poor reinstatement of contour banks. Photos I took also include examples of this. Photos provided by Mr Holland in relation to his inspection on 18-19 January 2016 also show poor reinstatement of contour banks.
- ...
10. If contour banks are not properly reinstated they are likely to fail. Failure of a contour bank can increase erosion. Contour banks that are not properly reinstated can result in accumulation of sedimentation behind the contour bank and

this will affect the intended operation and integrity of the contour bank.

11. I have been provided with photographs taken by Alison Hotz and Steven Swan of the RoW during January 2016 which shows the gypsum was not spread evenly. Photos provided by Mr Holland in relation to his inspection on 18 and 19 January 2016 also include examples of this.
12. A failure to spread the gypsum evenly leads to variability in soil structures which will effect rehabilitation and growth.

The appearance of the RoW on 29 January 2016 was consistent with gypsum having been applied and a small offset disc plough having been used to attempt to mix the gypsum into the top soil.

...

21. During my inspection on 29 January 2016, it did not appear to me that all access tracks within the RoW had been rehabilitated. There was evidence of a ripper or scarify being used up and down the slope rather than across it. That is not a satisfactory method for insuring rehabilitation of access tracks because it increases the risk of erosion.

...

24. During my inspection on 29 January, there was still evidence of weed. Photos I took also include examples of this.

...

26. As a consequence of my inspection on 29 January 2016, I was instructed to undertake further investigation as directed, in particular, to ascertaining whether there had been work performed to rehabilitate poor soil structure, to reinstate modified soil profiles, to remove rock within soil profile or return filled areas to their pre-disturbance levels.
27. As a consequence, I attended Inala and Mulawa on 23-25 February 2016. Following that inspection I prepared a report of the investigation that I then carried out.

[73] His final report is annexed to his affidavit (CD49). As he notes at 2.1 of his report, his field inspections focused on identification of key areas which should, in his

opinion, have been rehabilitated. He refers to Sutherland's Transect two (his Area 2, KP242); Transect 3 (Area 5, KP245); Transect 4 (KP242). In addition he undertook further investigations in Area 4 which, as I have noted, was not tested by Sutherland.

- [74] Dudgeon's conclusions and recommendations at p 18-19 of his report are in these terms:

"Our soil survey has also identified significant differences at Transect 3 which was highly modified and had severe limitations to plant growth due to compaction and placement of subsoil at shallow depth. At our area, there was sodic and compacted fill containing rocks at shallow depth. The majority of the RoW locations considered (five sites out of six or 83 per cent) have significant differences in soil horizons, structure and texture between the RoW and the undisturbed area.

It is clear from my inspection of Inala and Mulawa that rehabilitation was limited to "filling" in the subsidence along the pipeline with topsoil. It did not address inversion, exposed subsoils, poor soil structure, modified soil profiles, compaction, or introduced fill and rock within the soil profile apparent elsewhere within the RoW.

It is essential to the ongoing sustainability of pastures within the RoW that these matters be addressed. Although a superficial rehabilitation of the kind that has occurred can look successful to the layperson in times of favourable conditions: inversion, poor structure, compaction and sodic soils placed high in the profile, cause physical and chemical barriers which prohibit plant roots from accessing available water and nutrients. If there is lack of soil water due to drought and reduced rooting depth due to these barriers then pasture stress and plant mortality is likely. In wet seasons, waterlogging in the root zone can impact pasture growth.

Despite recent rehabilitation work... there is evidence of the surface not being returned to its pre-disturbance condition that serves the pre-construction use; soil horizons that are inconsistent with those nearby;

and the land not being reinstated to the pre-disturbance soil suitability class.”

- [75] He then goes on to recommend a detailed site survey similar to that recorded in his first report, except he suggests that it be undertaken at a maximum scale of 1:10,000 as recommended by the guidelines for soil survey along linear features (Soil Science Australia, Queensland Branch, 2015). He recommends an independent survey by a consultant selected by the court.
- [76] As a result of orders made on 18 May 2016, the experts met and prepared a joint expert report (CD57). The extent to which the works undertaken by Santos at the direction of Sutherland’s firm have addressed the issues of concern (particularly rehabilitation of poor soil structures and return of soil profiles to pre-construction levels), is the subject of dispute. In this regard it should be noted that the relevant condition in the environmental authority refers to “a condition that serves the preconstruction use”.
- [77] By reference to Sutherland’s first report (file 5 November 2015), the experts agreed:
- “13. The NS report acknowledged there were areas that had not yet been restored to a condition that served the land’s pre-construction use. It provided recommendations for the remediation and rehabilitation of the site.
 - 14. Those recommendations included three options for the reinstatement and rehabilitation of the RoW depending on the degree of landform disturbance encountered; each included slashing the vegetation, emu-bob to remove large sticks and rocks (>100mm diameter), prepare with topsoil, fertiliser application, seeding, watering and further monitoring the pasture, re-establishment of the pasture establishment and repair as required. Areas of major disturbance also were to include spraying with herbicides for weed control; soil pH testing to determine the selection of either lime or gypsum to improve soil structure.
 - 15. With regard to herbicides, NS limited the recommendation to the use of glyphosate or equivalent based on the knowledge that the applicant was concerned that any residual herbicides could jeopardise a future application to gain organic status on his property.”

[78] They also noted (under points of agreement):

- “17. (Santos) initiated works on the site between 23 and 26 November 2016. These works include, emu-bobbing of visible timber of stones over approximately 100mm in diameter and removal of weeds within the RoW, prior to slashing and subsequent mapping areas of subsidence within the RoW and pH testing of soil. A progress report (from Santos) is attached as appendix 3. G&S and Aus Ecology Pty Ltd staff also mapped areas of exposed soil and subsidence over the same period and this mapping is attached as appendix 4.
- 18. Following these works, NS prepared a letter to (Santos) entitled “Recommendations for soil reinstatement and rehabilitation” dated 3 December 2015. This letter provided further information, expanding upon the recommendations of the NS report and augmented by data provided by Aus Ecology Pty Ltd and G&S staff observations from the November site visit. This is attached as appendix 5.
- 19. A series of further works were initiated on site between 10 December 2015 and 10 January 2016. The site was attended by a qualified agricultural scientist and hydrogeologist of GNS, Andrew McDonald. The works included further spraying of weeds and subsidence repair, including application of topsoil as required; application, spreading and incorporation of gypsum; application of ammonium sulphate fertiliser; and seeding of repaired areas and any other areas lacking pasture growth.
- 20. Topsoil was sourced on site from areas approved by the applicant under his or Mr Hotz’s direction.”

[79] Importantly, under the heading “Rehabilitation Principles”, both experts acknowledge:

- “24. No soil rehabilitation exercise will result in a replica of the undisturbed soil profile. That said, with disturbance from an infrastructure project such as this, care can be taken to ensure topsoils (generally at 0.300mm depth) from the originating soil profile, remain at the soil surface; and subsoils (generally at >600mm depth) are reinterred below the topsoil layer.”

[80] Both experts also agreed as follows:

“Disturbance impacts

25. Because of the construction disturbance through differing soil types over the length of the RoW, the following short-term impacts are likely:
 - (a) Grazing, management or harvest disruption over at least two seasons.
 - (b) Soil erosion, compaction or downslope deposition.
 - (c) Pasture loss.
26. Similarly, the following longer-term impacts are likely:
 - (a) Subsidence where the backfill trench has had insufficient compaction or additional material laid over the trench to accommodate post-placement settlement.
 - (b) Organic matter and seedbank losses.
 - (c) Interrupted draining.
27. Given the likelihood of these impacts, rehabilitation techniques appropriate to the time scale and magnitude of the impacts were required.

Rehabilitation techniques

28. The use of established rehabilitation techniques, involving amendments to ensure the reinstatement of the pre-disturbance land use was reasonably foreseeable and represents best practice.
29. In respect of the use of amendments, the following represent examples:
 - (a) Reseeding to allow for a more rapid re-establishment;
 - (b) Fertiliser;
 - (c) Organic matter;
 - (d) Weed control; and
 - (e) Gypsum or lime.
30. Our observations from site inspections are:
 - (a) Some areas along the RoW exhibited compacted soil.
 - (b) Differences in soil structure between the soils on the RoW and outside of the RoW remain.
 - (c) Some soil profiles within the RoW show evidence of mixed sub-soil layers.

- (d) Some soil profiles show differences in sub-soil texture classes between the soil on the RoW and outside the RoW.
 - (e) There are differences in the abundance of coarse fragments within some soil profiles between the disturbed and undisturbed area.
 - (f) Occurrence of subsidence has reduced along the RoW post-rehabilitation.
 - (g) Of the areas where grass seed has been spread, there is reasonable pasture strike and grass colour (>70 per cent ground cover).
31. Soil profile mixing is, in part, remediated by the use of lime or gypsum and organic matter, which are management measures within the profile that result in general soil improvements, such as:
- (a) Remediating soil sodicity by increasing calcium;
 - (b) Improving soil structure and drainage; and
 - (c) Marginally increasing the salinity of the soil.
32. The trenched areas and the undisturbed and disturbed areas exhibited natural mottling and iron layers are comparable depths, indicating ancestral relics.

Rehabilitation objectives

33. The rehabilitation objectives ordered by the court aim to achieve remediation of the existing soil and landform condition to a plant production potential similar to land outside or and adjacent to the disturbed sections of the RoW. Whilst the rehabilitation program had available to it a range of measures, strategies and actions to fulfil the rehabilitation objectives, those chosen and implemented, aim to maintain existing pasture and the existing seed bank within the soils of the site.
34. Similarly, whilst there was a range of reasonable herbicide choices available for weed management purposes, the one chosen (glyphosate) and used in this instance was more labour intensive, but reflected the land holder's preference for selective plant eradication by spot-spraying whilst preserving the organic status for future application and maintaining the existing pasture and seed bank.
35. The success of the rehabilitation is measured by ground cover, area of subsidence and pasture availability.

Monitoring

36. The monitoring and ongoing repair provisions detailed in the NS report should continue as prescribed.

- [81] One of the vexed issues that arises in their points of disagreement comes about because so much time has elapsed since the acknowledged mixing of soil profiles by actions as directed by Saipem. This includes the depositing of road material in the western end of the RoW in Mulawa, the pushing of high quality red earth soils from around KP243 towards KP242 in April 2013 and the deposit of rock on Mulawa in April 2013 between KP244 and KP245; all of which occurred without the knowledge or acquiescence of Santos. Santos certainly became aware of Swan's concerns about these issues very soon after each occurred.
- [82] Dudgeon's point throughout, is that a much more extensive survey should be undertaken than that undertaken by him or Sutherland to determine what he predicts will be a much more extensive impact on soil structure, soil inversion and compaction of imported fill such as clay and rock.
- [83] This does not sit well with the points of agreement in the joint expert report referred to above. It is also relevant to the constant complaint ventilated by Santos that it is for Swan to prove the commission of the offences and, as will be demonstrated later, the proposal by Dudgeon, mirrors the orders sought in the originating application at points 2 and 3 which Santos argues are incompetent.
- [84] Although Sutherland observed correctly that he matched his test sites with those selected by Dudgeon, acknowledging that he had not tested in Area 4, a point of contention relating to compaction or repair of temporary tracks relates to Sutherland's opinion that after his works were completed, undesirably, cattle were allowed on the RoW.
- [85] Another issue of contention is Santos' requirement, because of the need to maintain the integrity of a pipeline, that testing (by way of coring etc.) was not to be undertaken within five metres of the pipeline which prevents testing in that area of the RoW. Santos' position is supported by the legal agreements between itself and Swan, and is consistent with the need to protect the integrity of the pipeline which is conveying liquefied gas.

- [86] The experts also disagreed as to the proper way in which rehabilitation should be assessed, Sutherland preferring to rely on ground cover and Dudgeon regarding soil profiling as the most important test. Sutherland's position seems to be more consistent with paragraph 35 of the JER under "points of agreement," and "Rehabilitation measures".
- [87] Sutherland was criticised in cross-examination for not using chemical analysis to test for sodicity in the soil samples that he took in his original assessment. Dudgeon notes in his final report that six out of the nine samples sent for chemical analysis by his firm were found to contain sodic soils, with two containing strongly sodic soils. Sutherland used an onsite test known as the Emerson Crumb test to test soil dispersity which he regarded as adequate to test for sodicity. As I will later demonstrate by reference to the alleged impugned conditions, particularly condition DA11, it is not necessary for me to resolve these disputes between the experts.
- [88] The experts agreed that the soil suitability mapping completed prior to construction by Saipem was inadequate, but both acknowledged that in such a major construction project, some disturbance of the soil profile was inevitable.
- [89] In effect, Sutherland says that his rehabilitation plan is a work in progress, and will require at least two seasons to be implemented; in the sense of achieving pasture cover on the RoW that is equivalent to the undisturbed areas along its length. Dudgeon says that although the ground cover at his last inspection appeared satisfactory (in the areas the subject of close analysis), his viewing of the photos taken by Isaac Hotz on 12 May 2016 (CD54) suggests that the rehabilitation works had not been as successful as he initially thought.
- [90] I agree with Sutherland that Dudgeon's estimate that only 5 per cent of the RoW has been rehabilitated based on aerial photography (see 51, p 10, CD57) is misleading as the aerial photography (December 2015) pre-dated the 2016 work. In my view Dudgeon's estimate in any event amounted to speculation.
- [91] The evidence of Mr Hotz and Swan of the state of the RoW since Sutherland's rehabilitation work does suggest that there are still a number of issues to address before the land on the RoW is appropriately rehabilitated to pre-construction use.

- [92] Certainly, as the evidence of both experts was tested, it is clear that Sutherland regards ground cover, i.e. of appropriate pastures; as a fair indication of rehabilitation, whereas Dudgeon regards soil sodicity and soil chemistry as more important indicators. As I have noted earlier, in the end, the differences probably don't matter much, and Sutherland's view seems to be supported by the point of agreement in the JER referred to earlier.
- [93] One of the difficulties I will address later arises, because the intense testing originally undertaken Dudgeon, was directed by Swan as being in areas of most concern to him; and Sutherland (apart from Area 4) has followed the same pattern. As Sutherland observed in his oral evidence, in determining the suitability of the land on the RoW for grazing purposes, he defers to Swan. This is more so where Swan has demonstrated a deep understanding of the soils on his farm, including those on the RoW and his concerns at actions taken by Saipem during the construction phase that were clearly contrary to good practice.
- [94] One of the issues that arises in Sutherland's last report, and in the joint report, is Sutherland's opinion that cattle accessing the RoW has hindered rehabilitation because of compaction, particularly in wet weather, and as Mr Hotz says of reseeded undertaken by Sutherland of pasture grass during rehabilitation, "cattle will always go for the green shoots". It is common ground that cattle did access parts of the RoW after rehabilitation. This is because there is inadequate fencing, to keep cattle out particularly along the southern boundary of the RoW.
- [95] Sutherland fairly conceded in his oral evidence that if the rehabilitation of the RoW is to be effected in a timely way, cattle-proof fencing with access gates (to enable cattle to be moved across the RoW from paddock to paddock), should be constructed along the entire southern boundary of the RoW. The legal responsibility for the fencing post completion of the construction phase is discussed later.
- [96] I have mentioned the affidavit of Isaac Hotz. He is employed by Swan. He holds a number of Diplomas and Certificates in agriculture, including beef, cattle production. He also has certificates in grass technologies.

- [97] On 12 May 2016, he rode the complete length of the RoW and took a series of photographs. His affidavit primarily deals with grass cover on the RoW and types of grasses and weeds that have established.
- [98] In his oral evidence he expanded upon his concession that since the remedial works cattle had been on the RoW. He explained that he has to rotate cattle through all the properties which necessarily requires crossing the RoW. I accept his evidence that this is necessarily a part of his duties as farm manager, and I also accept that he never deliberately grazed cattle on the RoW with the intention of disturbing rehabilitation works.
- [99] I will refer later to the dispute about the fences. It seems to be common ground that the fences (e.g. Between Red Hill South and Red Hill North) which were constructed during the construction phase, have deteriorated and are not stock-proof. Consistently with Sutherland's photographs, some of the photographs taken by Mr Hotz (e.g. 14, CD54) show evidence of cattle on the RoW but only in limited areas which I accept as necessary to maintain proper grazing practice. This photograph is the western end of Inala near KP242 where cattle will walk through to the back lagoon paddock. It shows the contrast between pasture rehabilitation on the RoW at that point and the desirable Biloela Buffle grass beyond the fence line along the northern end of the RoW. Mr Hotz's evidence about grass types along the RoW was not really challenged. It suggests that, although in large parts of the RoW desirable pasture has re-established, this is not so in some parts of the easement. In cross-examination he conceded (not surprisingly) that he had not read the Line List and did not know that as a matter of law, upon completion of the construction phase of the pipeline, ownership and therefore the duty to maintain fences, passed to land holder.

The evidence of Alison Hotz

- [100] Her evidence is relevant to the steps taken by Santos to prevent/or remedy or rectify actions taken by Saipem that may constitute breaches of the EA. It is also relevant to discretionary issues.
- [101] She did not move to Inala to live with Swan until July 2013. By then the RoW had been cleared and graded. She had however visited Inala prior to moving there

permanently, and was aware of Swan's many concerns. She attended meetings with Swan with Salter and other representatives of Saipem and Santos and she took contemporaneous notes.

[102] Although in cross-examination, Swan was contending on 14 June 2016 that the pipeline had not been completed, the evidence establishes that at the latest it was completed by 8 September 2014. This date is relevant, as it brings into play Condition D11 of the 2011 EA and condition AD11 of the 2015 EA which will be referred to later. It is not disputed that the whole of Inala and Mulawa (including the RoW) was classified as GQAL. Swan, in his oral evidence, seemed to be suggesting that his properties have potential for future agricultural purposes. However, for the purposes of these proceedings, it is not disputed that pre-construction use relates to the use of the land on the RoW for grazing cattle and as part of the use of the properties as a cattle stud. Ms Hotz's affidavit (CD23) contains copies (25-120) of extensive correspondence and her notes relating to complaints made to Salter and/or Saipem representatives from April 2013 (when the clearing of the RoW was underway) to February 2015 i.e. some months prior to the commencement of these proceedings.

[103] As noted, no one from Saipem or Santos, apart from Mr Brier, gave evidence. At the time of completion, and at all relevant times prior, Greg Jones was the Project Manager for Santos. The correspondence attached to Ms Hotz's affidavit (confirmed by Swan) establishes that on 23 July 2014 she and Swan met with Jones and Salter at a café in Moura. Her brother was also present.

[104] At [95] of his written submission, Mr Litster sets out (by reference to Ms Hotz's notes 67-85) what he described as a "litany of matters" which he submits are relevant to conditions D11 and AD11 and other conditions of the EAs:

"95. They included:

- (a) incorrect and incomplete fencing (relevant to land management);
- (b) difficulties for cattle because of the works (relevant to land management and service not returned to a land use condition that serves the pre-construction use);

- (c) berms not properly constructed or constructed at all (relevant to erosion control, land management and surface not returned to a land use condition, that serves the pre-construction use);
- (d) rectification works did not peel back top soil and insert subsoil and cater to levelling of swell over the pipe which interferes with berm operation (relevant to erosion control, land management and service not returned to a land use condition that serves the pre-construction use);
- (e) problems with the reseeding mix and reseeding being incomplete (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (f) distinct differences between paddock growth and RoW growth (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (g) explosive debris and rock across RoW and outside RoW caused by blasting during excavation for the pipeline (relevant to land management and surface not returned to a land use condition that serves the preconstruction use);
- (h) soil that was rock-free now contain rock (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (i) that “Housey” had said in front of Salter that he was told to bury rock on Mulawa and hide it (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (j) the dumping of under-bore and box cuts from the road reserve on the farm to a depth of about 400 mm for a distance of about 150 m into the farm on both sides of the road (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (k) use of clay in RoW (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (l) steel pegs bent over or broken off both on and off the RoW that had caused punctures (relevant land management and surface not returned to a land use condition that serves the pre-construction use);

- (m) the dangers that were being caused to animals, workers and vehicles because of subsidence issues (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (n) quadbike going into the subsidence and buckling its frame (relevant to land management and surface not returned to a land use condition that serves the pre-construction use);
- (o) surveyor's holes left in land that could cause cattle to break a leg (relevant to land management and surface not returned to a land use condition that serves the pre-construction use).

[105] Of this meeting, Ms Hotz's evidence is to this effect:

"111. Early in the meeting, Greg Jones had acknowledged that the way in which issues (that had been raised by Steve from the start of the works) had been addressed was not adequate, using words to the effect of 'not the level we really want,' and there were 'fundamental issues.'

112. Greg Jones said he was meeting Saipem the next day and that he would go in with the information he got from our meeting to hopefully resolve the issues then. He said that there were things Santos could assist with, but otherwise Santos could only apply moral pressure on Saipem. Greg said he was not trying to leave us happy, but trying to leave us content that they had dealt with Saipem for us.

113. At that time I did not know what the conditions of the Environmental Authority required, or that the Environmental Authority holders were responsible for the conditions being complied with and that it was not, as Greg Jones said, a matter for Santos to apply moral pressure to Saipem.

114. After raising all of the issues, Steve indicated Greg Jones needed to understand there was a lot more that could be covered in the

meeting and Greg said he understood that behind each of the matters we had raised were a lot of activity.

115. We also discussed the fact that Saipem was not communicating with us, and that responses from Saipem when issues were raised by Steve were to the effect of “what are you going to do about it?”.
116. Steve said he did not want Saipem on the farm.
117. Greg Jones suggested we outline what we think can be rectified an [sic] priority for restoration and if not rectifiable suggested we have an independent assessment of compensation, Greg Jones said he would put temporary measures and issues in writing and that they would engage and pay for this to be done. He acknowledged that the issues needed to be resolved.
118. Greg Jones said words to the effect that they would engage and pay for someone independent that we would get to agree we were happy with and I said we would be happy to do that.
119. Dean Salter then seemed to back away from that and suggested some issues could be resolved without getting to that level. I said I still believed an independent person would be required where soil issues could not be rectified and suggested that would require a joint brief.
120. Dean Salter indicated that he would ‘like to deal with certain things as we go’ and then referred to restrictions on them but did not identify what they were.
121. Steve complained about the fact that written responses had been promised in the past and not delivered (and that he had been called a liar when he pressed for them). He pointed out that he had never had these types of issues with other Pipelines that had been run through the farm.

122. Greg Jones said they would come back with a proposal as to how to resolve our lost time and ‘all this’ (by which I understood him to mean the issues we had raised) he said words to the effect that ‘some things will take a while to sort out but they would make an agreement to resolve them’. He also used words that indicated that the path they would take would resolve all issues.”

[106] It is important to note that Ms Hotz’s first affidavit was filed on 26 August 2015 i.e. before Sutherland commenced his rehabilitation works as a result of the court order on 12 November 2015.

[107] Mr Jones wrote to Swan on 31 July 2014. Relevantly the letter is in these terms:

“Thank you for your time and the opportunity to meet with you both on Wednesday 23 July 2014.

Following on from that meeting the following are observations in relation to the issues which I believe we can pave a way forward to a satisfactory outcome.

- Matters relating to disposal of fallen timber, temporary construction fences, gates not being closed and general housekeeping and unsatisfactory workmanlike behaviours.
- Lost stock due to these occurrences of the gate being left open.
- Contamination (soil inversion) of various areas of soils.
- Berms not constructed to Landholder’s satisfaction.
- Lack of sufficient resources to enable satisfactory control of dust suppression.
- Re-seeding.
- Weed control of spear grasses.

- Core tubing left where drill and blast took place.
- Dam (old turkey's nest): unable to be safely utilised to its full potential.”

(Santos) sympathises and understands the frustration you have endured and advises the following.

“In relation to the soil inversion issues, (Santos) understands that original soil samples were taken from the area prior to construction by an agronomist. The agronomist would be able to determine the extent of the problem and therefore (Santos) will work with you to arrange for an agronomist and the required scope of work to undertake a detailed inspection of the disturbed areas of the Gas Transmission Pipeline following completion of the works within your property. (Santos) will then address any issues that are identified as a result of this assessment.

(Santos) recognises that dust suppression will be an ongoing concern until vegetation is reasonable.

(Santos) is working in ways to address this issue through the Gas Transmission Pipeline.

You identified that the mulching of timber had occurred when the directions were clearly requested that the vegetation and logs be stacked across the disturbed area. Regrettably, as this cannot be undone, (Santos) will consider any reasonable request from you on how this matter can be best dealt with.

In relation to fencing, (Santos) will work with Saipem to ensure contractor addresses and corrects all outstanding fence issues. Insofar as the possible stock losses are concerned, can you please work with Land Agent Dean Salter so that (Santos) can receive from you your calculations on the loss of stock that you believe occurred? Please then provide that to (Santos).

Insofar as the dam stabilisation is concerned, (Santos) will pay for the works to be undertaken in terms of the quotes you have received for the works, including

your suitable management fee for supervising the works being undertaken to your satisfaction. Please liaise with Dean Salter in relation to this.

In closing, (Santos) would also like to emphasise, that the contractual conditions with the successful tenderer for the Meridian Project will be adapted to ensure that the contractor complies with all general behaviours and housekeeping obligations.

Again thank you for your understanding and cooperation throughout the construction of the gas transmission pipeline.”

[108] The letter was signed by Mr Jones as project manager, Pipeline for Santos.

[109] Almost a year earlier Mr Jones had written to Swan at “Anala” (sic) in these terms:

“Thank you for your input and feed back to (Santos) via (Santos’) land agent Dean Salter in relation to issues raised as a result of construction activities of the (Santos) Gas Transmission Pipeline.

I understand that the temporary construction fencing issues have now been addressed. However please continue to liaise with Dean if any issue arise.

I also understand your concerns in regarding the condition of the land as a result of ongoing activity and disturbance during wet weather. Please be assured that (Santos) will make a full assessment in consultation with you upon rehabilitation of the disturbed area and will attend to rectifying any areas that do not respond to rehabilitation.”

[110] I accept that Santos were aware of many of the issues set out in paragraph 95 of Mr Litster’s submissions. Clearly many of these concerns are historical in the sense that they have merged into the state of the RoW at the time of the hearing by particular reference to the evidence of the experts and the evidence of Swan and Hotz.

[111] The correspondence also establishes, I infer, that Swan at this stage was completely disenchanted with Saipem, and had adopted an attitude that any rectification work

would be controlled by him at Santos' expense. He also made it very clear that access to his property by Santos or Saipem would not be allowed unless on terms agreed by him. As will be demonstrated later, since the commencement of these proceedings, he has been obstructive and unreasonable in the face of attempts by Santos' lawyers to address his concerns.

- [112] As noted above, the first major remedial work undertaken by Santos occurred with the engagement of Sutherland following my order of 12 November 2015.

The Fencing Issue

- [113] Mr Litster criticises Santos for not properly fencing the RoW to protect the rehabilitation works undertaken under Sutherland's direction. He describes as "a simple, and obvious, land management measure", to fence the RoW "to secure the areas to be remediated to facilitate successful remediation."

- [114] The starting point is the Line Lists for both properties. Clause 17 of the Inala deed provides:

"17. Fencing

- a. Prior to commencement of construction of the Pipeline, the Grantee must construct temporary fencing consisting of 3 x 1.8 gh/t barb with steel pickets/droppers at a minimum of 10 m centres on the southern side of Easement Area and Working Space (as generally indicated in the plan following this Line List), a distance of approximately 3.27 km. The final location of temporary fencing is to be discussed between the Grantee and owner prior to its construction.
- b. If the Grantee temporarily removes any of the existing timber ironbark post 4 x barb fence in the area from approximately survey marker KP248.7 through to approximately KP250 (1300 m) (Feed Rev A) during construction of the Pipeline:
 - i. the fencing must be relocated as close as possible to its prior location (on the edge of the southern side of the Easement

- Areas as indicated in the plan following this Line List) during construction of the Pipeline;
- ii. Reinstated after completion of construction the pipeline [sic] as indicated in the plan following this line list.
 - c. The grantee must, during construction of the Pipeline, maintain all temporary [sic] which the Grantee is obliged to install. Ownership of the temporary fencing and responsibility for its maintenance will pass to the owner on the completion of the construction of the Pipeline.
 - d. Where existing fences are cut and temporary gates installed, the existing fencing is to be reinstated on completion of the construction of the Pipeline. The Grantee must also install permanent gates on the Easement Area to allow the Owner cross [sic] the Easement Area.”

Clause 17 of the Mulawa deed is relevantly in the same terms. (CD22: page 142).

[115] It is common ground that temporary fencing was constructed before the construction of the pipeline in accordance with these contractual obligations. It is common ground that pursuant to 17b, Santos through its agent, removed existing fences, and a dispute arose about the reinstatement of that fencing.

[116] It appears that by agreement Swan undertook at least 1.3 km of reinstatement fencing for which the Trust invoiced (and was paid by) Santos in 2014. When Swan was cross-examined about this issue he deferred to Ms Hotz on the financial aspect. He was still then maintaining (on 14 June 2016), as he had in his affidavit (see paragraph 103 of CD22) that the construction phase had not been properly completed, when it clearly had.

[117] Ms Hotz’ evidence about this invoice was confusing. At first she said it related to fencing on Inala, and then later corrected herself, and said it was on Mulawa, in the Blade Plough Paddock, and “not adjacent to the right of way”. She told Mr Litster, by reference to paragraph 7 of her second affidavit, where she states “the fencing on the RoW remains incomplete”, that she was referring to the temporary fencing and not the permanent fencing. As well as the invoice for the 1.3 km of fencing on Mulawa, Swan invoiced and was paid (on 30 October 2014) for fencing for Gas

Line (see page 14 of Exhibit 11) and Fencing Right of Way (on 21 November 2014) – see page 19 of Exhibit 11; and a number of these invoices included significant sums paid to Ms Hotz for administration work (e.g. \$12,250 on 30 October 2014 and \$1,600 on 21 November 2014).

- [118] I readily infer that the reason Swan was so adamant that completion of construction had not occurred was to avoid his obligations under clause 17(c) of the respective deeds. Santos' position in relation to fencing during the rehabilitation processes initiated by Sutherland was therefore legally justified. I agree that as a matter of proper construction, the fencing referred to in clause 17 is both to the construction phase fencing (when Santos had responsibility for maintenance) and the fencing in the rehabilitation phase after completion of construction when responsibility for maintenance of the fencing transferred to Swan.

The lack of particulars

- [119] I have referred earlier to what I said to Mr Litster on 17 June 2016 about what I described as a threshold question. In Santos' outline of closing submissions (CD59) what I said is appropriately summarised as follows:

“The court required that Swan foreshadow the outline of offences to contain details of each alleged offence including:

- a. the specific provision of the EA (or other document) which it is alleged has been breached;
- b. for offences that are historical, the date upon which the offence is said to have commenced and the date upon which it is said to have ceased;
- c. for continuing offences, the date upon which the offence is said to have commenced;
- d. the specific evidence that points to the offences as alleged to have occurred.”

- [120] The AOA (at a time when the Meridian Interconnector was not completed) pleads, by way of example, in relation to D11 of EA 2011:

- “17. Condition D11 of the 2011 EA (cf condition AD11 of the 2015 EA) requires that upon completion of the construction of the Pipeline 166 on any land identified as GQAL, Santos, ... must, inter alia, lightly rip disturbed areas, replace topsoil and return the surface to a land use condition that serves the preconstruction use.
18. Although it has been claimed that construction of pipeline 166 within lot 12 and lot 3 was complete in August 2014, the surface of those lots has not been returned to a land use condition that serves the preconstruction use.

Particulars

- (a) In lot 12 to the east and west of KP241 the excavation for Pipeline 166 has been backfilled with sodic subsoil clay which has modified the soil profile, forming a hard setting crust and subsided;
- (b) in lot 12 between KP242 and KP243 high quality red earth soils taken from the excavation for Pipeline 166 have been mixed with lower quality soils and rock and that mix has been used to backfill the excavation which has modified the soil profile;
- (c) in lot 3, between the western property boundary and KP244, the excavation for Pipeline 166 has been backfilled with rocky heavy sodic clay which has modified the soil profile;
- (d) in lot 3 between KP244 and KP245 the excavation for Pipeline 166 has been backfilled with rocky heavy sodic clay which has modified the soil profile;
- (e) there is widespread subsidence in the RoW in lot 3;
- (f) material excavated from the road reserve for the Moura-Baralaba Road has been placed on lot 12 and lot 3;
- (g) the rehabilitation species utilised in the ROW are not representative of species outside the ROW;
- (h) the ROW was reseeded but the seed mix did not establish;
- (i) the seeding was not undertaken within three months of completion of the backfilling of the pipeline trench despite requests by Swann;
- (j) spear grass dominates areas where once it had been sporadic and able to be contained by grazing regimes;

- (k) by leaving the soils bare, weed species have been able to invade and have provided the source of weed seeds which has spread through lot 12 and lot 3 both on and outside of the ROW.”

The AOA goes on to allege contraventions of other conditions of the EAs by reference to particulars similarly pleaded.

- [121] On 3 August 2016, as a response to my request which had previously been pressed repeatedly by Santos, Swan filed what is called an “Outline of Offences”. A letter was sent to Santos on 25 July 2016, in which Swan made it clear that the Outline of Offences would not identify the evidence relied upon, as that was “a matter for substantive submissions”. I agree with Mr Horton and Mr Favell that the document does little to fairly identify the offences alleged; rather it is very similar in its form and structure to the AOA and only refers to dates of incidents on four occasions: 31(a) April 2013 when high quality red soils were pushed down the hill around KP243 towards KP242; 31(h) October 2013, underbore material from the road deposited between the western boundary of lot 3 (Mulawa) and KP244; 31(e) prior to June 2013, rock deposited on Mulawa (lot 3) between KP244 and KP245, 40 (a repeat of 31(a); 44 (a replica of 31(e); 47 a replica of 31(h) and 51 (15.7.2014 – clay deposited in pipeline trench on Inala east and west of KP241. The outline does not specifically state whether the alleged breaches are historical or are continuing, and it does not refer to either s 430 or s 430 of the EPA.
- [122] By the time of his oral submissions, Mr Litster seemed able to particularise dates e.g. in relation to D11, and the dumping of the road underbore material, he submitted that the commencement date was the completion date, and the offence was continuing. He submitted that it was not the dumping of the roadbore material that constituted the offence, it was the failure (continuing he submits) to remove it. He was unsure whether that constituted a s 430 or a s 431 offence but seemed to settle on s 430 (see T 6-87, line 36 to 46). As I have noted Santos’s case has always been that the orders sought in paragraphs 2 and 3 of the AOA are incompetent.
- [123] Swan’s ultimate position is encapsulated in paragraphs 297 to 302 of Mr Litster’s trial submission:
- “297. For the reasons that have been identified above (that will be supplemented orally), the court would be satisfied that there

had been contraventions of conditions of the environmental authorities and that a proper exercise of the discretion warrants intervention by the court.

298. Plainly the orders to be made will be informed by findings made leading to a decision to invoke s 505, and for that reason should be framed in detail at that time.
299. Given Brier's statement that no further capital works are presently planned, Swan does not press for an order restraining further work on the RoW, but reserves his right to apply should circumstances dictate that such relief is appropriate.
300. An order requiring the completion of fencing of the ROW to secure the reestablishment of pasture until self-sustaining will be required regardless of what other orders are made.
301. Given the existence of some very obvious aspects that require remedial works, including the dumping of road underbore and burying of rock on Mulawa, the translocation of red soils, the use of clay in the RoW, near surface compaction and the reinstatement of berms and temporary tracks, it would be appropriate to appoint an independent expert (at Santos' cost) to determine the spatial extent of those contraventions and the measures that should be adopted to remedy those matters and to contemporaneously secure the establishment of the specified pasture within the ROW (e.g. surface treatment, organics etc.).
302. Orders should then be considered to secure compliance with those identified measures including a regime of independent supervision (all at Santos' cost) together with controlled access."

As can be noted 301 is subtly different from the terminology expressed in paragraph 2 of the prayer for relief in that it appears that Swan has made an attempt to meet the arguments brought against him by confining the expert's task to determining "the spatial extent of those contraventions and the measures that should be adopted to remedy those matters".

[124] When pressed to identify the basis on which he submitted that these orders as framed in the AOA were competent as a matter of law, ultimately (at T6-91, line 24) Mr Litster submitted that the court could (in what is a claim for injunctive relief), ultimately rely upon the catch-all in the prayer for relief in paragraph 4. Mr Litster said at transcript 6-91, line 30:

“The nature of the relief will be informed by what findings your Honour makes in the course of determining that an offence has been committed. Your Honour may not consider certain of the matters amount to an offence. In those circumstances the relief will have to be drafted to exclude those matters. That’s the difficulty in my submission and it is not uncommon in those sorts of matters for the courts to determine whether or not there has been an offence and then work out what remedial orders should be made.”

[125] On page 6-92 of the transcript after Mr Litster (in response to my request for some authority for that proposition) referred to general enforcement proceedings, and without reference to a particular authority said that the enforcement orders “may be cast after the determination”. When I asked whether that could be done contrary to the pleadings he then referred to paragraph 4 of the prayer for relief.

[126] It is important also to note that during this exchange, with what appeared to be some reluctance, Mr Litster appeared to confirm that he was not asking the court to draw any adverse inference against Santos for its failure to call witnesses such as Dean Salter. His ultimate position was that the evidence in his client’s case is “as it is”.

[127] He did call up in support of his argument a decision of the Court of Appeal in New South Wales *F Hannan Pty Ltd v Electricity Commission of New South Wales* [No. 3] (1985) 66 LGRA 306. In particular he relied upon some statements of Street CJ at page 310 and page 312 to 313. Mr Litster took me to passages relating to the legislation under consideration in that case, namely the *Environmental Planning and Assessment Act 1979* and the *Land and Environment Court Act 1979*. At 312 the Chief Justice observed (unremarkably) that these Acts place upon the Land and Environment Court “a wide ranging responsibility for the protection of the environment. Commensurate with that wide ranging responsibility is a wide ranging jurisdiction designed to give to that court exclusive control to determine

how, in the public interest and in the interests of the parties and other affected or interested persons, particular dispute situations should be resolved.”

[128] His Honour also observed at 313:

“Likewise it is apparent that the court enjoys a wide discretionary range within which to consider the formulation of orders or to remedy or restrain breaches of the planning legislation. It by no means follows that the mere demonstration of a right that a party would be entitled to expect to have enforced by the ordinary civil courts will be afforded equivalent enforcement by the Land and Environment Court,”

And;

“The precise manner in which the court will frame its orders and the context of particular disputes is ultimately the discretionary province of the court to determine in the light of all of the factors falling within the purview of the dispute.”

[129] Although the case at first glance appears to have some similarities to the case in hand, that is not borne out by careful reading of the decision. The fundamental issue at hand in that case was whether the decision by the respondent to the appeal, the Electricity Commission of New South Wales, to resume an easement over the appellant’s land for the purposes of an electricity transmission line that (I infer), was to be constructed over a distance of 13.5 kilometres, was lawful. It was not a case such as this where having agreed and granted an easement, and the pipeline having been constructed, the land owner was then complaining about breaches of environmental authorities. The case says nothing about the need for an applicant, who is seeking injunctive relief pursuant to statutory powers to make declarations and orders, to carefully identify the case upon which it relies, particularly when it is alleging, as a mandated prerequisite to the exercise of discretion, the commission of offences.

[130] I have earlier referred to the prayer for relief and to the relevant provisions of s 505 of the EPA.

- [131] It is conceded that order 1 now lacks utility but, ultimately, Swan seems to wish to reserve his rights in relation to that order.
- [132] I agree that orders 2 and 3 impermissibly seek to have this court concede jurisdiction to a lay person (an expert) to identify offences and measures to remedy the contraventions, i.e. offences.
- [133] Swan's case as presented now in terms of his outline delivered 17 August, and Mr Litster's oral submission on 18 August 2016, is that the evidence establishes very obvious contraventions that require remediation works (see paragraph 301 of his written outline above); and, as I have noted, the case now seems to have subtlety shifted from what is sought in 2 and 3 of the AOA, but to still seek the appointment of "an independent expert", "to determine the spatial extent of those contraventions".
- [134] It appears Swan's position now is that if I accept the argument of Santos, that orders 2 and 3 are beyond jurisdiction of the court, nevertheless, I can make similar orders (confined as submitted in 301 of Mr Litster's trial submission) under the catch-all provisions in paragraph 4 of the prayer for relief.
- [135] The relief sought (whether it be pursuant to orders 2 or 3, or 4) lacks sufficient certainty. It also calls for court supervision, which may be appropriate for some species of litigation but not in the circumstances here where on all the evidence before me, I am satisfied that Swan will only ever be satisfied if an independent expert is controlled by him, inevitably leading to difficulties (again) about access, and returns to the court to resolve disputes about the way in which the orders are to be implemented.
- [136] Both parties acquiesced in the court not determining the strike-out application, and both parties have put on evidence. Although I accept that as a matter of principle, a no case submission can be made by a party that has gone into evidence: *Rasomen Pty Ltd v Shell Company of Australia Ltd* (1997) 75 FCR 216, despite the legal difficulties in the prayer for relief; I intend to proceed to determine the application on its merits in case I am wrong in my conclusions set out above.

Has the applicant established any offences under ss 430 or 431?

- [137] Despite the difficulties identified above in identifying the nature of the case against it, Santos has nevertheless done its best to address the alleged contraventions in its written trial submissions (CD59).

Construction of the EA conditions

- [138] In dealing with what are essentially civil proceedings, with significant potential detriment to Santos e.g. the finding of criminal conduct albeit in a civil proceeding; it is essential that the Court construe those conditions said to be contravened in accordance with established principles of statutory construction.
- [139] Environmental Authorities (EAs) are statutory instruments, pursuant to the *Statutory Instruments Act 1992* (ss 6, 7(2)(c), 7(3)); and by s 14 and Sch 1 of that act, s 14A(1), s 14B(1) and s 35C of the *Acts Interpretation Act 1954* applies so that:
- (a) the interpretation is to be preferred that best achieves the purposes of the EA;
 - (b) regard may be had to extrinsic material, provided certain circumstances exist; and
 - (c) any heading to a provision of the EA forms part of that provision.
- [140] Planning schemes are also statutory instruments and, in accordance with well-known principles, are to be construed purposefully, in a practical and common sense way, and broadly rather than pedantically or narrowly. In its written outline, Santos relies upon statements of principle that suggest (as indeed most of the authorities dealing with planning schemes suggest), that a practical common sense approach is appropriate to construction of statutory instruments “rather than by meticulous comparison of the language of their various provisions, such as might be appropriate in construing sections of an act of Parliament...”: *Gill v Donald Humberstone & Co Ltd* [1963] 3 All ER 180 at [183]. Mr Litster makes no contrary submissions; indeed, he adopted my observation that principles relating to the Court construction of planning schemes apply in construing the environmental authorities in this case.

A detailed consideration of the alleged breaches

Condition D11 (2011 EA) and AD11 (2015 EA).

[141] For purposes of simplicity, I will quote the terms of AD11 only which is in similar terms to D11:

“(AD11) Upon completion of construction of the pipeline, on any land identified as being good quality agricultural land (GQAL), the holder of the environmental authority must:

- (a) Remove temporary access tracks, unless otherwise agreed in writing with the affected land holder;
- (b) Lightly rip disturbed areas, replace topsoil and return the surface to a land use condition that serves the pre-construction use; and
- (c) Implement and maintain land management and erosion control measures.”

[142] As I have noted, it is conceded by Santos that the land is GQAL. It is submitted that as a matter of construction, the condition does not give a time by which the steps set out in (a) to (c) are to be implemented. It does in the sense that it refers to the mandatory requirement to do these things “upon completion”, but it does not, in the sense that it does not give a time by which the steps are to be completed. This can be contrasted with H4 (2011 EA) and AH4 (2015 EA) to which reference is made below. Much attention was given in the evidence and in Swan’s written outline to AD11(b). The use of the term “surface” is important, particularly in the context of an allegation of criminal conduct. Leaving aside the issues of subsidence, which on the evidence relate to the surface of the RoW over the pipeline trench, the evidence does suggest that Sutherland’s efforts after the 12 November order are in the process of returning the surface of the land to a condition that serves the pre-construction use of grazing. “Implement and maintain”, suggests an ongoing responsibility, that Santos, particularly since the 12 November 2015 order, has shown itself willing to undertake at its own cost, as it must pursuant to the rehabilitation plan which is referred to below in relation to allegations of the contraventions of conditions AH3 and H3.

[143] The evidence establishes that as a result of Sutherland’s work, there was reasonable ground cover recovery along the ROW which had deteriorated to some extent by the time of the June 2016 hearing. Weather conditions may have contributed to this and there is the evidence that cattle were allowed to move across the rehabilitated area during the rehabilitation process.

- [144] Sutherland's opinion is that his measures (which Santos adopt) will take at least two seasons to fully take effect and to result in "the surface (of the land) use condition on the RoW" being returned to a condition that "serves the pre-construction use".
- [145] I agree with Santos that the test in this condition is not one of perfection, bearing in mind the inevitable concession made by the experts in their JER that no soil rehabilitation exercise will result in a replication of the undisturbed soil profiles, after such significant disturbance as was occasioned by the construction of the pipeline under the RoW.
- [146] As to (a), it can be accepted that some "temporary access tracks" remain on the RoW. The difficulty then in concluding to the standard required that Santos therefore has committed an offence by not removing those tracks is demonstrated by reference to the Grant of Easement given to Santos in relation to each property. The Easement was granted for consideration of \$64,900 in relation to Inala (Lot 12), and \$84,700 in relation to Mulawa (Lot 3), and is perpetual.
- [147] Clause 1(a) of the Schedule to the Deed of Option for Easement in relation to Inala dated 21 June 2011 permits Santos "full and free right... through the Easement Area...to...maintain, inspect, test...and/or repair" the pipeline; and 1(h) gives Santos "the right to build roads over the Easement Area to enable (it) to exercise any right available to it under the Easement". There are similar provisions in the Mulawa Deed.
- [148] In those circumstances, it could not possibly be said that by not removing temporary access roads, Santos has contravened a condition of its Environmental Authorities.
- [149] I have referred above to the issue over fencing along the RoW. Perhaps as a demonstration of the confusion in Swan's case; in his submissions alleging contravention of these conditions, Mr Litster seems to submit (at 102-110) that because (for what I have concluded were legally sound reasons), Santos did not secure the areas for rehabilitation after the 12 November order, by the construction of fences, this is evidence of contravention of these conditions. It is paradoxical, that if Swan's evidence that the pipeline construction had not been completed was accepted (which it is not) these conditions would not have effect and no contravention could be proved.

Conditions H3 (2011 EA) and AH3 (2015 EA)

[150] Condition AH3 in the 2015 EA is in these terms:

“(AH3) the holder of this Environmental Authority must implement the Rehabilitation Plan”.

[151] Mr Litster deals with his client’s case on these conditions at 28-33 of his trial outline. The AOA (at 23) refers to these two conditions. The written submissions (at 179) alleges as well a breach of condition H3 of EA which commenced in October 2014. Indeed there is a 2014 Environmental Authority which commenced in October 2014, the 2011 EA having apparently expired at the same time.

[152] At no stage does Swan in his AOA allege a breach of any conditions of the 2014 EA. Given the conclusions I have reached it matters little, but it is again an example of a confused case to ask this court to infer (as Mr Litster does in footnote 162 on page 28 of his trial submissions) that there was at all material times, a condition similar to H3, and to conclude that Santos had contravened it and committed an offence.

[153] Swan alleges contraventions of H3 and AH3 by reference to what he alleges are failures by Santos to comply with various provisions of the Land Rehabilitation/ Reinstatement Management Plan dated 7.1.2013 (the Rehabilitation Plan).

[154] In circumstances in which this court is dealing with alleged criminal offences, Swan is confronted with insurmountable problems in establishing such offences because of the proper construction of the terms of the provisions in the Rehabilitation Plan that he says have been contravened.

[155] Firstly, the condition requires Santos to “implement” the plan. “Implement” means “put into effect”. The first section alleged to constitute some failure is 7.3.2:

- (a) The aim of rehabilitation of pasture land is to restore the pre-disturbed production potential of affected land;
- (b) Applicable performance criteria for GQAL include:
 - (i) minimise disturbance to agricultural activities;
 - (ii) reinstate disturbed areas to pre-construction condition.

- [156] The very terminology of this section e.g. “the aim”, and indeed of the Plan itself, which is said to provide “a preliminary guide on where specific rehabilitation measures are expected to be applied”, and “the measures detailed in (the Plan) are a guide only”; suggests that a practical approach, rather than a pedantic approach to construing these provisions is called for.
- [157] My conclusions earlier to the effect that since Santos have, by order of the 12 November 2015, undertaken the rehabilitation proposed by Sutherland; they have commenced to implement the Rehabilitation Plan, mitigate strongly against any breach which is not specified in any event as to time; and probably could not be because of the wording of the condition and the Plan itself.
- [158] I prefer Sutherland’s evidence that the proper practical test for rehabilitation is to be measured in terms of ground cover and not by scientific testing of soil samples along the whole of the RoW for sodicity as suggested by Dudgeon; and that, in accordance with his opinion, is a work in progress that may require two seasons to effect.
- [159] In relation to 7.4 of the plan which is to do with Santos’ commitments in relation to the Line Lists, on the evidence, I am unable to conclude that Santos has committed any breach of condition H3, as the matters complained of at (192) of Swan’s trial submission, and for the reasons given earlier, I am satisfied that Santos (once permitted to enter the properties after the 12 November 2015 order), has demonstrated good faith in engaging Sutherland and accepting all the recommendations, many of which are ongoing. It is simply not correct to say that Santos will not take any further action to implement the plan unless ordered to by the court as (a) it has the ongoing obligations of the Plan; and (b) subject to Swan’s consent, it seems committed to seeing through Sutherland’s recommendations to comply with its obligations to implement the Plan.
- [160] Swan alleges various breaches of AH3 (and H3) by reference to various other sections of the Rehabilitation Plan. Mr Litster deals with these alleged breaches from 191-214 of his trial submission. As can be seen from those paragraphs, the factual basis for alleged breaches is frequently the same as for alleged breaches of other conditions of the EA’s. The Rehabilitation Plan is a comprehensive document and (I infer) is the Plan applying to all land owners affected by the pipeline with 7.4

containing reference to specific site rehabilitation actions by reference to relevant Line Lists.

- [161] A copy of the Plan is annexed to Mr Manning's affidavit filed 21 August 2015 (CD19) and contains 527 pages. Swan alleges breaches of the specific provisions of the Plan without having regard to the document as a whole.
- [162] In relation to 7.4 (C191-192 of Mr Litster's outline, and para 23 of the AOA) by way of example, which deals with issues such as rehabilitation of vegetation and disturbed soils; the commitments of Santos with respect to the Line List for Inala and Mulawa in relation to these issues, are to "be actioned within the relevant land tenures prior to transferring the commissioned areas to land holders". The very wording of this provision, said by Swan to have not been complied with, therefore contravening AH3 and/or H3, demonstrates the difficulty confronting him in proving a breach; particularly in light of Santos' commitment to follow through with the Sutherland recommendations over a number of seasons. The complexity of the Rehabilitation Plan also demonstrates why much more specificity was required by Swan in his allegations of commission of offences by Santos.
- [163] The same general observations apply to those other sections of the Rehabilitation Plan referred to in Swan's trial submission i.e. 8.1.1, 8.1.4, 8.2.1, 8.2.5, 8.3, 8.3.2, Attachment A, 5.4.3, 5.4.6 and 5.6. Not surprisingly, the Rehabilitation Plan when read as a whole focuses on goals and methods and not absolutes. By selecting individual sections, read in isolation from the whole, and then failing to properly particularise, Swan has misconstrued the Plan, and the nature of relief contemplated by s505 of the *EPA*. Indeed, the wording of AH2 strongly suggests that the focus is on strategies for determining rehabilitation goals, and methods to achieve those goals and, relevantly, in (c) "timeframes for commencing rehabilitation of significantly disturbed areas... not greater than three (3) months for the rehabilitation of buried pipelines and not greater than nine (9) months for any other disturbed areas...". (My emphasis).

Conditions H4 and AH4

- [164] AH4 is in these terms:

“Pipeline trenches must be backfilled immediately after pipeline laying and rehabilitated as soon as practicable but no longer than three (3) months after completion”.

- [165] The evidence relied upon by Swan is referred to above. Mr Litster argues that the condition must be construed as applying to the whole of the RoW, but on its terms it applies only to “pipeline trenches”.
- [166] Given the agreed evidence of the experts (see [79] and [80]; particularly [26] from the JER referred to above), it can be seen how it would be wrong to adopt the strict and pedantic approach to construction favoured by Mr Litster. AH4 cannot be read in isolation from (for example) AH5 which is an indicator as to what “rehabilitated” means in AH4.
- [167] As a discussion of the expert evidence above indicates, the soil horizons in areas surrounding the pipeline trench can vary naturally along the whole RoW, often within a few metres. When read purposefully, the condition does not require Santos to replicate soil horizons as they were prior to the pipeline. I am comfortably satisfied that the methods adopted by Sutherland appropriately satisfy these conditions. No breach has been proved.

Conditions AH5 and H5

- [168] AH5 is in these terms:
- “During backfilling of trenches, soils must be replaced so that soil horizons are consistent with the soil horizons of the immediately surrounding area.”
- [169] As with AH4, this condition should be read as requiring achievement of the pre-construction use of the land, which is the overarching purpose which the EA’s seek to achieve in relation to individual land owners. Such a purposive approach again accords with the agreements of the experts recorded at [80] and [81] above. Once again, it is the undisputed and historical evidence of the interference with red soils on Inala in 2013, the placing of rock on Mulawa in April 2013, and the dumping of road underbore on Mulawa in October 2013 that is relied upon by Swan as establishing alleged ongoing breaches of these conditions. Consistent with the evidence of the experts, the same soil horizons could never be achieved after such

significant disturbance. Once again, once Santos was given the chance to take action to achieve consistency through Sutherland's work, it acted in good faith to progress those works.

- [170] Paragraph 225 of Mr Litster's trial submission seems to hint at a breach of this condition by the failure to pay "careful attention" to backfilling at the time that this was occurring, but this is not a clearly particularised or related to any particular section of the EPA.

Conditions H6 and HA6

- [171] These conditions deal with backfilled and rehabilitated trenches. Again, Swan errs in construing the conditions in isolation and in a strict and pedantic manner. Both experts acknowledged that with such a significant infrastructure project, disturbance of land form, soil horizons and pre-construction vegetation was inevitable. Without actually particularising as such, paragraph 231 of Mr Litster's trial submission seems to allege breaches prior to Sutherland's work commencing. The list of offences (CD58) confines the alleged breach to failure to achieve a stable land form and no subsidence. Once again, Swan has misconstrued the condition. In CD58, breaches are also alleged of conditions H9 and AH9 which are set out at [63] of CD58. Although these conditions relate to "all significantly disturbed land" and not specifically to the pipeline trenches, nevertheless they deal with similar issues. Swan has abandoned any reliance on breaches of H9 and AH9. This seems to be a tacit acceptance of Santos' argument that AH9 applies when the pipeline is decommissioned.

Conditions D39 (2011 EA) and AD39 (2015 EA)

- [172] These conditions require Santos to "develop and implement a pest and weed control program...." Once again, Swan has found it difficult to particularise what offence and/or offences have been committed. There is no doubt that his evidence and that of Mr Hotz in particular and also the experts, is to the effect that the pipeline construction has led to weed issues along the RoW. Santos have developed a Plan. It is annexed to Mr Manning's affidavit (CD19) and comprises 79 pages. I am satisfied that Sutherland's work, which is ongoing, is implementing this Plan. There is no breach of these conditions.

- [173] As a consequence of Sutherland’s work, eight cubic metres of weeds were removed in the 2015-2016 period, again demonstrating Santos’ good faith in complying with these conditions. An example of the pedantic approach adopted by Swan on this issue relates to the introduced weed species *Parthenium*. The evidence establishes that a Weed Survey of both properties in 2010 identified infestations, albeit small, on both properties of this particular weed species. Sutherland appropriately noted extensive areas of this weed and other weeds along the RoW in his initial report; but his recommendations and later implementation of those recommendations, in my opinion, clearly demonstrate compliance with these conditions. The Weed Management Plan imposes ongoing obligations on Santos which I am satisfied will be met if proper access is given by Swan.

Conditions C1 and AC1

- [174] These conditions require Santos to “develop and implement a Waste Management Plan.” A plan has been developed and is annexed to Mr Manning’s affidavit (CD19) and contains 75 pages. Again, the approach of Swan ignores the ongoing nature of the obligation to “implement” such a plan, alleging that every example of waste left on the properties after completion comprises an offence. There was waste left on the land by Saipem and its contractors during the course of construction of the pipeline. This is not surprising given Mr Brier’s uncontested evidence that at any given time during that period some 200-300 subcontractors were working on Swan’s land. Much of that rubbish was gathered up and removed in the emu-bob conducted as a consequence of Sutherland’s recommendation.
- [175] It can be accepted that there are still items of waste on the RoW, e.g. the remnants of blasting and some metal; and Santos has the ongoing responsibility of implementing the Waste Management Plan accordingly. Mr Litster seemed to be unenthusiastic about this aspect of his client’s case in his final oral argument, for good reason in my opinion, as it is based on an erroneous construction of the conditions as the foundation of general allegations of breaches of the Plan.
- [176] It follows that in relation to the various conditions that Swan alleges have been breached, for the legal and evidentiary reasons set out above, none have been proved, and the application should be dismissed on that basis alone. Nonetheless, I

am required to deal with the remaining issues in case I am found to be in error in this part of my reasons.

Section 431(4) of the EPA

[177] Mr Brier gave evidence for Santos, directed primarily at three areas:

- (a) historical details concerning the pipeline project;
- (b) discretionary matters; and
- (c) section 431(4) considerations.

[178] To some extent, his evidence relating to the issues the subject of Swan's evidence has been overtaken by the involvement of Sutherland. His primary affidavit (CD29) was sworn prior to the filing of Sutherland's first report. In relation to the issue of post-completion rehabilitation, he says this at para 45-46 of CD29:

“45. The subsidence and insufficient vegetation on the applicant's land are similar to what occurred on other parcels of land that the (pipeline) passes through. Since July 2015, (Santos') contractors had been progressing along the (pipeline) and attending to subsidence, erosion, land stability and vegetation issues where they have arose (sic). The contractors are trying to get as much of the rehabilitation and rectification works done as possible prior to the wet season (during which undertaking the necessary works is not practical, economical or safe). Contractors have attended to and rehabilitated more than 60 per cent of properties that the (pipeline) passes through. A third party, Ausecology, is monitoring the works that are being undertaken.

46. In the absence of this proceeding, (Santos') contractors would have been in a position to undertake rectification of any erosion and/or subsidence on the applicant's land by mid-September 2015. However, due to the current proceeding and the applicant's stated wish that his land not be entered, (Santos') contractors have proceeded to other properties along

the (pipeline). In the event that the applicant gave notice that he wished (Santos') contractors to attend to the rectification of issues on his land, the necessary works can be undertaken relatively quickly (subject to the wet season)."

- [179] His affidavit filed 13 April 2016 (CD42), essentially confirms Santos's commitment to carry out the works recommended by Sutherland.
- [180] It is really not disputed that Saipem were responsible for the incidents which underpin most of the allegations made by Swan. Saipem was responsible for moving high quality red earth soil from the area in Inala around KP243 which was pushed downhill towards KP242 to an area with a completely different soil profile which was mixed with other soil and rock and used to backfill the excavation between KP242 and KP243. It was also responsible for depositing rock in Mulawa between KP244 and KP245 sometime prior to June 2013; and was also responsible for using rock and material excavated from under the Theodore-Barrallaba road in October 2013 for depositing on Mulawa between the western boundary and KP244. Saipem was also responsible for depositing clay in the pipeline trench in Inala both east and west of KP241 sometime prior to 15 July 2014.
- [181] Mr Brier himself became aware of the red soil issue and the gravel and rock deposited on Mulawa almost immediately. His undisputed evidence was that Santos attempted to have Saipem remove it when he became aware of its presence. In relation to the under-bore material, his evidence was that Santos became aware of that occurring approximately 2-3 weeks after the event at a time when the rock had been buried.
- [182] Given the way in which Swan has conducted his case, it is not possible to say if an offence or offences were committed by Saipem in relation to these specific incidents, and I do not understand Mr Litster to suggest otherwise.
- [183] If I had found that Saipem had committed offences, Santos argues that it can then rely on s 431(4) as "a defence". Certainly, on the evidence placed before this court, there is no basis for finding that Santos had any prior knowledge of Saipem's intention to do these things which were of such concern to Swan at the time.

[184] Mr Litster submits that s 431(4) is not available to Santos as a matter of law. His submission is that the “defence” is only available to a party when that party is prosecuted for an offence under s 431. I do not accept that argument. For the purposes of s 505(5), no “offence” exists if Santos proves (to the civil standard) all three matters referred to in ss 431(4)(a), (b) and (c). Mr Brier’s oral evidence was largely directed at the relationship between Santos and Saipem. His evidence (as accurately summarised at para 7 of Santos’ outline in relation to s 431(4)) is as follows:

- “(a) Saipem was engaged under an EPC contract – an engineering, procure and construct contract. In effect, Saipem was to design, engineer, procure, construct, rehabilitate and manage the building of the (pipeline);
- (b) The (pipeline) passes through the land at 114 Landholders. At various times in construction, there were up to 56 work fronts across the (pipeline). At its peak, there were 2000-3000 subcontractors working along the (pipeline);
- (c) In the period leading up to April 2013, Mr Brier lead 20-30 meetings and briefings with Saipem, which were ‘specifically aimed at getting them to adhere to their compliance obligations, making sure they understood the regulatory framework in which they are operating and the consequences of non-compliance, both in a legal sense...but also from a social license to operate and reputational sense as well’;
- (d) Many of the meetings were with Saipem’s key management staff and personnel. At times, external experts in areas like aquatic ecology, ecology and landform stability were brought in to assist;
- (e) The consistent attendees (from a Saipem perspective) were Giuseppe Tassinari, Alessio Testa and Daniel Rapidi;

- (f) He had personally warned Saipem representatives in at least five of six of the meetings of the importance of not importing material onto site;
- (g) There was a real focus on ensuring Saipem understood the obligations from the beginning because once construction started, methods of ensuring compliance were limited.”

[185] Earlier reference was made to the meeting between Swan, Alison and her brother with Greg Jones on 23 July 2014 at a café in Moura. The invoices contained in Exhibit 11 (and explained in detail in para 15 of Mr Brier’s October 2015 affidavit), indicate a real willingness on the part of Santos to respond to concerns expressed by Swan about the actions of Saipem, and particularly the actions of most concern referred to above.

[186] From April-December 2014, Santos paid Swan for fencing, DNA testing of his cattle after a gate was left open, considerable work on the dam on Mulawa which had been seriously damaged as a result of actions by Saipem; and work on contour banks and berms, and provision of seeds. As noted earlier, many of these invoices included an administration fee and/or payments to Swan and/or Alison for their labour.

[187] At that meeting on 23 July 2014, Alison’s notes record in clear terms that Swan’s anger was directed towards Saipem and its representative. He apparently acknowledged at that time that Santos was endeavouring to respond appropriately by indicating to Jones that he was not happy to work with Saipem but happy to work with Santos.

[188] The response of Santos to the problems raised by Swan after the July meeting does show that it was trying to solve problems, even if it was too late to undo the actions of Saipem that had led to these problems.

[189] On the evidence before this court it should be accepted that Santos did what it reasonably could to ensure that Saipem complied with the regulatory framework underpinning the pipeline project. There is no evidence that Santos was aware that Saipem was acting in relation to the four matters referred to above prior to those

actions having occurred. This seems to be acknowledged by Swan in his outline of offences.

The exercise of discretion

- [190] In circumstances in which the applicant has not proved the commission of offences so as to enliven the discretion in s.505(5), it is still necessary to express my view, based on the evidence, on matters which in my opinion, would have been relevant to the discretionary power.

The access issue

- [191] Santos' position is that in 2015 Swan unreasonably denied access to its contractors to effect rehabilitation and address a lot of the issues raised in the OA, until forced to do so as consequence of the November 2015 court order. On 18 September 2015, Mr Manning wrote to Carter Newell (Santos' solicitors) as a result of his client being told that "work crews" were moving along the pipeline "to conduct rehabilitation works".
- [192] By then Swan was disenchanted with Santos as well as Saipem. That letter sought to place conditions on any entry in accordance with Exhibit 10 which is Swan's Position Statement prepared consequent upon an order of this court made on 11 June 2015. The statement provided very proscriptive conditions for entry and undertaking remedial works, including condition 12:

"12. Powers of O2 Environment + Engineering

The powers of O2 Environmental + Engineering will be:

- 12.1. To monitor and inspect all aspects of the Remedial Works, other works and access.
- 12.2. To require Santos to stand down such workers who have shown a continuing lawful disregard for the EA, Easement Terms and Deed.
- 12.3. To require work to cease on site where there is not an insubstantial non-compliance with the EA, Easement Terms and Deed."

- [193] Not surprisingly, Santos would not accept such a condition. It is common ground that in June 2015, Swan denied access to Ausecology, described in Exhibit 18 as a

third party monitoring rehabilitation works undertaken by Santos' contractor along the pipeline. By then Dudgeon, a principal of O2 Environment + Engineering had been notified as an expert on behalf of Swan.

[194] At the review on 12 November 2015, Swan argued strongly for a highly proscriptive order which I did not accept for reasons published that day. It was not until the order was made on that day that Santos had the ability to progress its obligation under the EAs and the Deeds relating to Swan's land.

[195] Both experts inferentially acknowledged the need to implement rehabilitation programs sooner rather than later after such major disturbance, and this need was frustrated by Swan's entrenched position. It is a factor that is relevant to the exercise of the discretion.

Mr Sutherland's work

[196] For the reasons stated earlier, I am satisfied that Sutherland's rehabilitation work conducted on behalf of Santos and at its cost has, to a significant extent, met the requirements of the relief sought in paragraphs 2 and 3 of Swan's AOA. Santos accepts that the obligation is ongoing, but of course, absent any court order, Sutherland would have no further part to play unless Swan agrees.

[197] Santos' actions since 30 October 2015 when it obtained Sutherland's first report, has shown good faith and a willingness to comply with its legal obligations. As at the date of his evidence in June 2016, Sutherland was due to again revisit the properties to assess vegetation cover. If he is still involved in the future, and if better methods can be applied in particular situations, he said in evidence that he will recommend the adoption of those methods.

Other Issues

[198] The issue relating to the legal responsibility for maintaining the temporary fencing of the southern side of the RoW, which on the evidence is in a poor state, is also relevant to the exercise of the discretion.

[199] Santos submit that Exhibit 12, when considered in light of the evidence of Swan, also has relevance to discretionary matters.

[200] Exhibit 12 contains exchanges of correspondence and other documents relating to a 320 cubic metre stockpile of soil on Inala which came from the construction of the Meridian Interconnector. As I have noted, there was litigation in the Supreme Court between the parties over the Interconnector site and access to construct it which was resolved on a commercial basis.

[201] Although the AOA (amended at a time when construction of the Interconnector was underway) alleges potential breaches of AH9 from intermingling of soils excavated from the Interconnector site, from Mr Litster's trial submission, I do not understand his client to be pressing for any conclusions that breaches of the 2015 EA occurred as a result of what occurred on that site.

[202] In his trial affidavit (CD22), Swan refers to this issue from para 22-136. He agreed that the stockpile he was talking about in his affidavit is the same soil referred to in the documents in Exhibit 12. At trial, he was insisting that he did not want the stockpile on his land and he wanted it removed. Swan was closely cross-examined about Exhibit 12 in light of what he had said in trial affidavit. I adopt as a summary of his evidence on this issue when read with the contents of Exhibit 12 what is written as at [133] of Santos' closing submissions (CD59):

- “a. Santos wanted, on 11 June 2015, to remove the soil from Swan's property;
- b. Swan (on 12 June 2015) advised that he was not willing to have the material removed, unless Santos paid \$9.00 per cubic meter for it to be stored on his property (provided it was clean-fill);
- c. On 17 June 2015, Swan advised that any removal of soil from his land would be treated as conversion of his property and that he would take steps to protect his interests;
- d. On 17 June 2015, Swan advised that he had denied Ausecology (a contractor engaged by Santos to undertake rehabilitation works) access to his property. Swan said that this was because legal proceedings were on foot;
- e. On 17 June 2015, Santos again sought confirmation as to what Swan wanted done with the soil (which Santos had found was clean-fill);

- f. On 18 June 2015, Santos was told by Swan's solicitors that 'the excavated material is to remain on our client's property and is to remain in the area of the Meridian Interconnect works';
- g. On or about 1 July 2015, the independent supervisor identified and approved a site for the removal of the stockpile because Santos could not leave it in the working area and still undertake construction works;
- h. on or about 1 July 2015, Swan complained to the police about the removal of soil from his land. Santos therefore instructed its contractor to not remove the soil;
- i. On 1 July 2015, Swan's solicitors advised Santos' solicitor that 'your client does not have a clear right to remove excavated material from our client's property and your client is constrained to do those works within the area identified within the agreement reached and no other area. In the event that your client considers the area is not sufficient that is a matter that your client ought to have addressed at the time of entering into the agreement that was reached';
- j. On 2 July 2015, Santos confirmed its intention to store the soil offsite so as not to hinder the workspace. Santos advised that it would return the soil as soon as possible;
- k. On 2 July 2015, Swan's solicitor advised that if Santos proceeded to remove the excavated material 'we will refer the matter to the constabulary';
- l. On 29 July 2015, Santos asked Swan to explain why he had contacted the police;
- m. On 3 September 2015, Santos advised that it would shortly be in a position to return the soil to Swan's property. Santos also asked Swan whether he would like the soil placed elsewhere (instead of the working area) or disposed of altogether;
- n. On 11 September 2015, Santos (having received no response to its letter of 3 September 2015) advised that unless it received response from Swan by 5.00pm on 18 September

2015, the stockpile soil would be returned to its original stockpile location. It later returned the soil.”

- [203] I agree with Santos’ submission made at [134] that these events give considerable insight into how difficult Swan was to deal with at this stage. I agree with Santos that the dispute over the soil was unnecessary and a result only of Swan’s stubbornness and inability to work through matters constructively and simply.
- [204] Swan’s attitude to this issue is consistent with his approach generally to issues such as access for rehabilitation purposes, particularly since commencing these proceedings. Given the problems he had had with Saipem historically, and the fact that by 11 June 2015 these proceedings were underway, his attitude is perhaps understandable, but entirely unhelpful to any reasonable resolution of a fairly straightforward problem. His attitude feeds into the issue of monies already received by Swan from Santos.

Monies paid by Santos to Swan Interests

- [205] It is not in contest that as a result of the various agreements between Santos and Swan (see para 7 of Mr Brier’s affidavit CE29), Santos paid a total amount of \$856,924.29 in relation to 16 invoices issued for and on behalf of Swan interests. This includes option fees, upfront compensation and fencing. It also includes an amount of \$76,367.50 paid to Swan interests to enable Swan to repair the Mulawa dam on an invoice dated 21 November 2014. Many of these invoices include administration fees and hourly rates and amounts paid to Swan and/or Ms Hotz. The details of the invoices are in para 15 of Mr Brier’s affidavit referred to above.
- [206] Swan argues that the compensation paid is of little or no relevance to the issue of discretion. In particular, he argues that the \$462,981.20 received by him to settle the Interconnect litigation is irrelevant to these proceedings.
- [207] The Originating Application (commenced by Santos) against Swan to give it access to the 3000 m² approximately, required on Inala to construct the Interconnector, and the Deed of Settlement of that litigation, is part of Swan’s case, (CD19, p 1258-1265). The Inala Deed of Option for Easement – Upfront Compensation is annexed to Swan’s affidavit (CD22 at p 23). Swan agreed in cross-examination, by

reference to the total amount paid to him for the Inala easement, that a pro rata sum for the 3000 m² Interconnect site was approximately \$700.

- [208] In my opinion, when one has regard to those documents and Swan's evidence concerning this issue, this amount is a relevant factor in the exercise of the discretion. The sum paid included \$187,350 for the easement (altered to include the Interconnect site) and \$147,042 in "further compensation" being an extra amount not under any defined head. The agreement to settle includes an agreement by Santos to pay for an "independent professional expert" to supervise the works, with powers similar to those contained in cl. 12 of Exhibit 10. It is clear that such an expert was appointed and no evidence was called by Swan to suggest that Santos did not comply with any of the relevant binding legal documents or authorities to which it is and was a party relevant to the Interconnect site.

Conclusion

- [209] For these reasons, the application is dismissed. I will hear the parties in relation to the issue of costs.

SUPREME COURT OF QUEENSLAND

CITATION: *Swan v Santos GLNG Pty Ltd & Ors* [2019] QCA 6

PARTIES: **STEVEN JOHN SWAN**
(applicant)
v
SANTOS GLNG PTY LTD
ACN 131 271 648
(first respondent)
PAPL (DOWNSTREAM) PTY LTD
ACN 147 649 205
(second respondent)
TOTAL GLNG AUSTRALIA
ARBN 146 680 524
(third respondent)
THE CHIEF EXECUTIVE ADMINISTERING THE ENVIRONMENTAL PROTECTION ACT 1994
(fourth respondent)

FILE NO/S: Appeal No 2779 of 2017
Appeal No 4367 of 2017
DC No 80 of 2015

DIVISION: Court of Appeal

PROCEEDING: Miscellaneous Applications – Civil

ORIGINATING COURT: District Court at Maroochydore – [2017] QPEC 2; [2017] QPEC 17 (Robertson DCJ)

DELIVERED ON: 1 February 2019

DELIVERED AT: Brisbane

HEARING DATE: 24 November 2017

JUDGES: Fraser and McMurdo JJA and Henry J

ORDERS: **In CA 2779/17**
1. Refuse the application for leave to appeal, with costs.
In CA 4367/17
1. Grant the application for leave to appeal.
2. Allow the appeal with costs.
3. Set aside the costs order made in the Planning & Environment Court on 24 March 2017, and instead order that the applicant pay the costs incurred by the respondents after 16 June 2016.

CATCHWORDS: PLANNING AND ENVIRONMENT – ENVIRONMENTAL LAW – where part of the respondent’s [Santos’] gas pipeline

was built on the applicant's properties – where Environmental Authorities were granted to Santos – where the applicant filed an originating application applying for declarations under s 505 of the *Environmental Protection Act* 1994 (Qld) that Santos was in breach of various conditions of the Environmental Authorities – where the applicant sought the appointment of an independent expert to report to the court on the extent of the breaches and the rehabilitations required – where the primary judge found that the orders sought at trial were beyond power – where Santos' expert believed that all recommended rehabilitation had been undertaken except those obligations that required ongoing maintenance – where Santos undertook to continue that ongoing maintenance

ENVIRONMENT AND PLANNING – COURTS AND TRIBUNALS WITH ENVIRONMENT JURISDICTION – QUEENSLAND – PLANNING AND ENVIRONMENT COURT AND ITS PREDECESSORS – COSTS – GENERALLY – where the applicant was wholly unsuccessful in the proceeding below – where the primary judge ordered the applicant to pay the respondents' costs of the proceedings on the standard basis or as agreed – where s 457(1) of the *Sustainable Planning Act* 2009 (Qld) provides that the costs of the proceeding are in the discretion of the Planning and Environment Court – where it was accepted that the general rule that costs follow the event did not apply and instead the non-exhaustive list of considerations in s 457(2) should be considered – where the primary judge observed that the court never ruled against the no case submission – where the court did in fact rule against the no case submission – where the primary judge considered the factor in s 457(2)(d) of whether a party commenced or participated in the proceeding without reasonable prospects of success in light of this error – whether the primary judge erred in ordering the applicant to pay the respondents' costs of the proceeding on the standard basis

Environmental Protection Act 1994 (Qld), s 505

Sustainable Planning Act 2009 (Qld), s 457(1), s 457(2)

Cox v Brisbane City Council (No 2) [2014] QPELR 92; [2013] QPEC 78, approved

COUNSEL:	K Barlow QC, with T Jackson, for the applicant J M Horton QC, with D M Favell and A Hellewell, for the respondents
SOLICITORS:	P&E Law for the applicant Carter Newell for the respondent

[1] **FRASER JA:** The applicant seeks leave to appeal from two decisions of the Planning and Environment Court:

- (a) A decision after a trial dismissing his application for an injunction under s 505 of the *Environmental Protection Act 1994* (Qld) (“EPA”) against three companies collectively described in these reasons as “Santos”; and
 - (b) The trial judge’s subsequent order that the applicant pay Santos’ costs of the proceedings.
- [2] The grounds of the proposed appeals to this Court are confined to error in law.¹ I will first discuss the application for leave to appeal against the substantive judgment.

Background

- [3] Santos built a 420 kilometre gas pipeline between the Surat and Bowen Basins and Curtis Island near Gladstone. Environmental Authorities (“EA”) were granted to Santos in November 2011 and March 2015 approving the construction of the pipeline under a petroleum licence (“PPL 166”) subject to numerous conditions. The relevant conditions are identical or materially identical, so it is necessary to refer only to terms of the EA granted in 2015. The pipeline was designed, supplied, constructed and commissioned by Santos’ contractor Saipem Australia Pty Ltd (“Saipem”). The applicant owns two properties near Moura known as Inala (Lot 12) and Mulawa (Lot 3), as well as other properties nearby. He uses the properties for grazing beef cattle and operating a cattle stud. Part of the pipeline was built on the applicant’s properties. By deeds dated 21 June 2011,² the applicant’s father (who then owned the properties) covenanted to grant easements over both properties to Santos to allow for the construction and maintenance of the pipeline (the right of way, “RoW”).³ The RoW is 30 metres wide together with an adjacent “Working Space” ten metres wide.⁴
- [4] Construction of the Pipeline over Inala and Mulawa commenced in March or April 2013⁵ and was completed by 8 September 2014 at the latest.⁶ The applicant alleged that during the work there were contraventions of conditions of the EA, many of which were not rectified despite his complaints to Saipem and Santos.
- [5] Section 430 of the EPA applies to a person who is the holder of an EA or to a person who is acting under an EA. It is an offence for a person to contravene a condition of an EA: s 430(3). The holder of an EA (in this case, Santos) must ensure that everybody acting under it complies with its conditions: s 431(1). If “another person” (that is, someone other than the holder – in this case, Saipem) acting under an EA commits an offence against s 430, the holder commits the offence of failing to ensure the other person complies with the conditions: s 431(2). Section 431(4) provides that it is a defence for the holder to prove that the holder issued appropriate instructions and used all reasonable precautions to ensure compliance with the conditions, and the offence was committed without the holder’s knowledge, and the holder could not by the exercise of reasonable diligence have stopped the commission of the offence.
- [6] Section 505(1) of the EPA provides that proceedings may be brought in the Planning and Environment Court for an order to remedy or restrain an offence against the Act,

¹ *Sustainable Planning Act 2009* (Qld) s 498(1)(a).

² Deeds of Option for Easement with the attached easement documents over Inala (Ex SJS-1 at 23-82) and Mulawa (Ex SJS-1 at 83-144).

³ Reasons [17], [18].

⁴ Reasons [18].

⁵ Reasons [13].

⁶ Reasons [102].

or a threatened or anticipated offence against the Act, by (amongst others) a person whose interests are affected by the subject matter of the proceeding. The applicant is such a person in relation to the alleged contraventions of the conditions of the EAs. Section 505(5) empowers the Court to make orders it considers appropriate to remedy or restrain an offence if the court is satisfied that an offence against the Act has been committed or will be committed unless restrained.

- [7] In May 2015, the applicant filed an originating application in the Planning and Environment Court applying for declarations under s 505 of the EPA that Santos was in breach of various conditions of the 2015 EA over Inala and it was anticipated that Santos would further breach those conditions, an order under s 505 that Santos cease work until measures could be put in place to ensure future compliance with the EA, and further orders under s 505 to which I will refer. In an amended originating application filed in August 2015 the claim was extended to Mulawa.
- [8] The parties obtained expert reports. The reports and other evidence identify locations on Inala and Mulawa by reference to “Kilometre Point” or “KP” numbers. The length of the RoW over Inala and Mulawa is about nine kilometres. Farm Plans for those properties⁷ assign KP numbers to points on the RoW representing distances from the western point of the pipeline. KP240 is west of the western boundary of Inala, KP241-243 are within Inala, KP244-248 are within Mulawa, and KP249 is north-east of the eastern boundary of Mulawa.
- [9] The applicant’s solicitors retained an expert, Mr Dudgeon, to undertake a preliminary review of the Pipeline through Inala and Mulawa. Dudgeon drove the length of the RoW through those properties, concentrating on some of the applicant’s areas of concern, and prepared a report dated 18 August 2015.⁸ Dudgeon’s August 2015 report discusses five areas. The discussion may be briefly summarised as follows:
- (a) Area 1, around KP241: the applicant stated that the pipe trenches were backfilled with sodic subsoil clay from a dam. Dudgeon noted hard setting surface crusts which are characteristics of subsurface sodic soils, not evident in other local areas, and unexpected in the top soil horizon. The crusts can inhibit seed germination and crop growth, increase surface runoff and erosion, and decrease water infiltration rates.
 - (b) Areas 2 and 3, east of KP242 and west and east of KP243 on Inala, an area known as Red Hill South: this area has the highest quality Red Earth soils on the farm. The applicant had concerns that lower quality sodic soils and rock from other areas had been mixed in, modifying the soil profile and land capacity. Dudgeon observed that a pit dug within the RoW had a shallow Red Earth A horizon less than 250 mm, overlaying a rocky sodic heavy clay layer B horizon, whereas the soil profile outside the RoW had deeper clay loams to one metre plus.
 - (c) Area 4, West of KP244 on Mulawa: the applicant stated that subsoils and rock from other areas were backfilled in the pipeline trench for about 300 metres from the road east along the RoW. Two soil inspection pits were dug and Dudgeon made an observation to the same effect as that concerning areas 2 and 3. He also observed a large blue rock in the pit in the RoW, which was inconsistent with the soil profile.

⁷ Exhibits 7 and 8.

⁸ AB 752.

- (d) Area 5, East of KP244: two soil inspection pits were dug and Dudgeon made observations to similar effect to those in Areas 2 and 3.
- [10] Under the heading “Other Issues”, Dudgeon observed that there was subsidence every 250 m with an average depth of 0.5 m, there was “swell” or overburden in some locations, there were more weeds in the RoW compared with the remainder of the land, and there was a marked visual difference between plants in the RoW and the remainder of the farm.
- [11] Dudgeon concluded that there was observed evidence of:
- “subsidence (refer EA condition H6 and H9);
 - the surface not being returned to a condition that serves the preconstruction use (refer EA condition H4, H5, H6, H8, H9, and D11);
 - pipeline trenches have not been rehabilitated (refer EA condition H3 and H4);
 - soil horizons that are inconsistent with those nearby (refer EA condition H5 and H8 and H9);
 - profiles at levels inconsistent with surrounding soils (refer EA H6 and H9);
 - profiles inconsistent with surrounding land features (refer EA condition H6 and H9);
 - top horizons of soil profile not reinstated (refer EA condition H5 and H8);
 - the land not being reinstated to the pre-disturbance soil suitability class (refer EA condition D11 and H9); and
 - change in pasture including weed infestation (refer EA condition D39, H3 and H4).”
- [12] Dudgeon recommended that a revised rehabilitation plan should be produced from a detailed survey of: the soil profile and condition within the RoW compared with native adjacent soils profiles and classifications; weeds; rehabilitation species compared with the current farming pastures species; and subsidence. He recommended that the survey and consequential remediation be undertaken under the supervision of an environmental consultant or consultants selected by the Court.
- [13] Santos’ solicitor engaged an expert, Mr Sutherland, to prepare a preliminary report. Sutherland inspected the RoW on 1 October 2015 in the presence of a representative from Dudgeon’s company. The applicant was present during part of that inspection and expressed some of his concerns. Sutherland’s October 2015 report assessed soils and vegetation cover at 12 locations in six transects along the pipeline. At each transect there was one sampling point within the RoW and another sampling point in an undisturbed area outside the RoW. The selection of the transects was largely informed by areas identified in Dudgeon’s August 2015 report. Sutherland’s conclusions may be summarised as follows:⁹
- (a) There was little overall difference in ground cover between the RoW and the undisturbed areas but there were areas of bare soil surface and minor erosion in the RoW.
 - (b) There was an observable difference in vegetation composition within a 10 metre radius at transects 3 and 4, particularly undesirable weeds in the RoW adjacent to transect 4. There was a general trend towards taller vegetation within the undisturbed areas compared with the RoW.

⁹ Sutherland October 2015 report at [5.3] (AB 1968- 970); Reasons [59]-[62].

- (c) Surface coarse fragments were found only at transect 1 within the RoW. Soil texture as between the RoW and undisturbed areas differed markedly only at transects 2 and 3. Soil structure was reasonably consistent except at transects 2 and 4. Coarse fragments were present in higher proportions within the RoW at transects 1 and 2 compared with the undisturbed areas, the fragments being likely to reflect at least in part blast product.
 - (d) Soil profile had not been reinstated to its pre-disturbance condition within the RoW soils at transects 1, 2, 4 and 5. Soil moisture was predominantly higher in the undisturbed areas except at transects 2 and 4.
 - (e) Areas of subsidence were evident throughout the RoW relative to the land surfaces on either side. Introduced weed species were prevalent in areas along the RoW, especially in lower lying portions of Mulawa near transect 4, indicating at least in part deficient weed management practices by the contractor and poor pasture re-establishment.
- [14] In relation to issues raised in the August 2015 Dudgeon report about EA conditions, Sutherland's discussion may be briefly summarised as follows:
- Multiple areas of subsidence, exposed subsoils and poor soil structure likely to have resulted from disturbance noted along the RoW indicated that some parts of it had not been restored to a "land use condition that serves the pre-construction use", but the restoration of large parts of the RoW did meet the required condition (Condition D11(b)).
 - There were significant differences in soil horizons between the RoW and undisturbed areas in transects 1, 2, 4 and 5, including evidence of mixed soil and different soil texture and/or structure (EA conditions H5, H8 and H9).
 - There were introduced weeds in the RoW adjacent to transect 4 and in other areas where soil disturbances had occurred (EA condition 39).
 - There were examples of subsidence along the RoW (EA condition H6).
 - Parts of the RoW required rectification with regard to soils, land surface and weed management.
 - Sutherland's understanding was that the Land Rehabilitation Reinstatement Management Plan prepared by Saipem was implemented and rehabilitation works were carried out as soon as practicable within the three month time period following backfilling of the trench. Further rehabilitation within the RoW was needed but the rehabilitation plan was implemented over significant portions of the RoW (EA conditions H3 and H4).
- [15] Sutherland made recommendations about the appropriate assessment and rehabilitation of the soil and pasture in the RoW which differed from Dudgeon's recommendations. Sutherland's recommended forms of rehabilitation varied according to a characterisation of the RoW disturbance as "major" (disturbance across the entire width of the RoW, irrespective of its length along the RoW), "medium" (the area of disturbance being greater than 150 m² but less than the RoW width), and "minor" (the RoW disturbance being less than 150 m²). Sutherland produced a table which summarised what he described as a "simple three-step process of assessment, rehabilitation and monitoring to ensure the rehabilitation has succeeded" and observed that the process was "based on the well-established grassland management strategy of replacement, renovation or retention".¹⁰

¹⁰ Sutherland October 2015 report, s 8 pp 25-26 (AB 1978).

- [16] The applicant swore a lengthy affidavit on 24 August 2015 in which he made numerous contentions about matters concerning the construction of the pipelines and failures to rehabilitate the RoW, and about the absence of meaningful or effective action in response to complaints he had made to Saipem and Santos. The applicant's partner, Ms Hotz, swore an affidavit on 24 August 2015 which supported many of the applicant's contentions and referred to other matters.
- [17] An employee of Santos, Mr Brier, swore affidavits on 29 September 2015¹¹ and 12 November 2015.¹² In the first affidavit, Brier referred to Dudgeon's August 2015 report and the affidavits of the applicant and Ms Hotz. Brier disputed some of the applicant's contentions and acknowledged the accuracy of others. In the second affidavit, which Brier deposed he was authorised to swear on behalf of Santos, he deposed that: Santos was willing to undertake all of the rehabilitation works recommended in Sutherland's October 2015 report; because of the current proceeding and a stated wish by the applicant that his land not be entered by Santos' contractors, those contractors were not able to carry out the works similar to those recommended by Sutherland which otherwise would have been carried out by mid-September 2015; and by using contractors other than Saipem, with whom the applicant had indicated he was dissatisfied, Brier anticipated that subject to the availability of those contractors the work should be able to start within two weeks of Santos being given permission to enter the applicant's land.
- [18] At a review hearing before the trial judge on 12 November 2015, which was about seven months before the trial commenced in June 2016, Santos proposed interlocutory orders which would require it to carry out the rehabilitation work recommended by Sutherland by the end of January 2016. The applicant opposed those orders, contending that those works were insufficiently defined and additional work was required to rehabilitate the applicant's land. After hearing argument on 12 November 2015, the trial judge ordered that Santos carry out forthwith the works recommended in Sutherland's October 2015 report and complete such works by the end of January 2016,¹³ with both parties having liberty to apply upon 48 hours notice.
- [19] Subsequently Sutherland swore an affidavit on 21 January 2016, in which he deposed that, based upon photographs taken by colleagues on 18 and 19 January 2016 and discussions with them, he believed that his recommendations, except those which would involve ongoing watering, monitoring and repair, had been properly undertaken to a satisfactory standard. In an affidavit sworn on 8 April 2016 he referred to an inspection of the applicant's property. He observed that the state of the property had generally improved since his visit on 1-2 October 2015, there were limited areas suffering from subsidence, and there had been a reasonable strike rate (germination of seed) and grass cover. He recommended the application of additional gypsum to a relatively small area in which further erosion had become evident. He referred to an area of subsidence repair where there had been very little strike, which he stated was most likely due to cattle trampling on the soil in wet conditions, and recommended that the area be left without cattle, harrowed and reseeded as soil moisture conditions allowed. Sutherland confirmed that the recommendations in his 30 October 2015 report had been implemented by Santos to the extent possible and stated that the results had to an extent been curtailed by the lack of recent rain, the

¹¹ AB 1401.

¹² AB 1461.

¹³ The form of the order in the Appeal Book (AB 2582) refers to January 2015 but that is obviously incorrect.

presence of cattle on the property, and some further subsidence. He made recommendations about ongoing remediation. For Santos, Brier swore affidavits on 20 January and 12 April 2016 to the effect that Santos had completed the works recommended by Sutherland other than the recommended ongoing work and activity, and Santos would carry out the ongoing work and activity, consult with Sutherland, and comply with its obligations under the EAs.¹⁴

- [20] Dudgeon assessed the rehabilitation and soil condition at the properties in a report dated 20 April 2016 with reference to investigations undertaken in late February of that year. He concluded that, despite the recent rehabilitation work, areas of the properties had not yet been appropriately rehabilitated; there was evidence of “the surface not being returned to its pre-disturbance condition that serves the pre-construction use (refer EA condition H4, H5, H6, H8, H9 and D11); soil horizons that are inconsistent with those nearby (refer EA condition H5 and H9); the land not being reinstated to the pre-disturbance soil suitability class (refer EA condition D11 and H9)”. Dudgeon recommended:

“A detailed site survey should be undertaken to assess soil profile conditions within the RoW. This should be compared to native adjacent soil profiles and classifications and undertaken at a maximum scale of 1:10000 ... from this survey a revised rehabilitation plan for the properties of Inala and Mulawa should be produced and implemented. It is recommended that all survey and consequent remediation be undertaken by an independent environmental consultant/s selected by the Court and remediation subject to supervision by that expert. This recommendation for independent detailed surveys is made to ensure that the extent and level of the impact is fully identified so as to provide enough details to enable an accurate revised rehabilitation plan. Without that plan it is not possible to determine resources required and the level of rehabilitation achievable (i.e. potential to return the land to the pre-disturbed land condition).”

- [21] In an affidavit sworn on 12 May 2016, Dudgeon referred to his inspection on 29 January 2016 along the entire length of the RoW and made various criticisms of the nature and effectiveness of rehabilitation work done by Santos in purported compliance with Sutherland’s recommendations, as a result of which Dudgeon had prepared his 20 April 2016 report.
- [22] Pursuant to directions made in May 2016, Dudgeon and Sutherland met and prepared a joint expert report in which various points were agreed, including that “[n]o soil rehabilitation exercise will result in a replica of the undisturbed soil profile”,¹⁵ “[t]he success of the rehabilitation is measured by ground cover, area of subsidence and pasture availability”,¹⁶ and “[t]he monitoring and ongoing repair provisions detailed in the [Sutherland] report should continue as prescribed”.¹⁷
- [23] Affidavits and oral evidence at the subsequent trial by the applicant, Ms Hotz, and Mr Hotz (an employee of the applicant) suggested that Saipem had committed numerous breaches of the EAs, some of which had enduring and substantial significance

¹⁴ AB 1466-1467 and 1507-1509.

¹⁵ Joint expert report 6 June 2016 at [24].

¹⁶ Joint expert report 6 June 2016 at [35].

¹⁷ Joint expert report 6 June 2016 at [36].

for the applicant's use of his properties, Santos did not prevent or promptly remediate the breaches upon becoming aware of them (in some cases by virtue of the applicant's complaints), and there were significant deficiencies in the rehabilitation work recommended by Sutherland and in the work actually carried out by Santos.

- [24] A great deal of evidence and argument at the trial was directed to the question whether the applicant had proved to the required standard that Santos had contravened conditions of the EAs. The trial judge concluded that the applicant had not fulfilled that onus.
- [25] Much attention at the trial was also directed to a conflict in the expert's opinions about the appropriate method of rehabilitation. The parties' final positions at the trial reflected that conflict: on the basis of Dudgeon's expert evidence that Santos' rehabilitation work had not been as successful as he had initially thought¹⁸ and it was necessary to conduct scientific testing of soil samples along the whole of the RoW, the applicant contended that much more investigation needed to be done to establish the extent of the environmental harm along the RoW; whereas Santos contended that the work it undertook under Sutherland's supervision since 12 November 2015 had essentially provided what the applicant sought in orders (2) and (3),¹⁹ and Sutherland's opinion was that the measures he recommended, and which Santos had adopted, would (after at least two seasons) result in the land use condition of the RoW being returned to a condition that served the pre-construction use.²⁰
- [26] The trial judge held that:
- (a) Sutherland's evidence about the appropriate remedial measures for the alleged contraventions should be preferred to Dudgeon's evidence.²¹
 - (b) There was reasonable ground cover recovery along the RoW; it had deteriorated to some extent by the time of the June 2016 hearing, but that might have been contributed to by weather conditions, as well as by cattle being allowed to move across the rehabilitated area during the rehabilitation process.²² (The trial judge found that the applicant had incorrectly proceeded upon the footing that it was Santos', rather than the applicant's, legal responsibility to fence the RoW.²³)
 - (c) Once Santos was permitted to enter the properties after the 12 November 2015 order, it had "demonstrated good faith in engaging Sutherland and accepting all the recommendations, many of which are ongoing".²⁴ After making similar findings specifically in relation to Santos' conduct in implementing particular aspects of the rehabilitation measures recommended by Sutherland,²⁵ the trial judge concluded that "Santos' actions since 30 October 2015 when it obtained Sutherland's first report, has shown good faith and a willingness to comply with its legal obligations".²⁶

¹⁸ Reasons [89].

¹⁹ Reasons [38].

²⁰ Reasons [89], [144]-[145], [158].

²¹ Reasons [82]-[95], [158].

²² Reasons [143].

²³ Reasons [94]-[95], [99], [113]-[118].

²⁴ Reasons [159].

²⁵ Reasons [159] (last sentence), [162], [167], [169], [172], [173].

²⁶ Reasons [197].

- [27] In the amended originating application upon which the applicant went to trial, the applicant sought four orders under section 505. Order (1) is that Santos cause all works on the applicant's land to cease until measures have been put in place to secure compliance with the EAs for PPL166. That order lacked utility, Santos having earlier completed the pipeline construction, and it was not pursued in final submissions at the trial. The remaining orders are:
- (a) Order (2) – that Santos “cause an independent investigation to be undertaken at their cost, by an expert appointed by the Court, to identify all respects in which the [EAs for PPL 166] have been contravened on the Applicant's Land and the measures to be taken to remedy those contraventions”.
 - (b) Order (3) – that Santos “cause the contraventions to be remedied by the measures identified by the independent investigation”.
 - (c) Order (4) – “Such further or other orders as to the Court may seem just to remedy the contraventions” of the EAs for PPL166 on the Applicant's Land.
- [28] The trial judge declined to grant any of the orders sought by the applicant, essentially upon three main grounds:
- (a) Orders (2), (3) and (4) (under which, in final submissions at the trial, the applicant sought an order appointing an independent expert to determine the “spatial extent” of contraventions and the required remediation works²⁷) lack sufficient certainty and are beyond the jurisdiction of the Planning and Environment Court because they impermissibly seek to have the Court concede jurisdiction to a lay person (an expert) to identify offences and measures to remedy the alleged offence.²⁸
 - (b) Orders (2), (3) and (4) should be refused in the exercise of the discretion because those orders required court supervision, which although appropriate for some litigation, was not appropriate “in the circumstances here where on all the evidence before me, I am satisfied that Swan will only ever be satisfied if an independent expert is controlled by him, inevitably leading to difficulties (again) about access, and returns to the court to resolve disputes about the way in which the orders are to be implemented”,²⁹ and for other reasons.³⁰
 - (c) The applicant had not established any of the alleged offences under s 430 or s 431 of the EPA.³¹

The application for leave to appeal

- [29] The applicant contends that each of those grounds for the decision involves an error of law. His draft notice of appeal seeks the following orders:

“(2) That the First, Second and Third Respondents are enjoined to remove any temporary access tracks remaining on the right of way area save and except any such tracks which are presently required for rehabilitation purposes or for the purposes of

²⁷ Under order (4) the applicant also sought an order requiring Santos to complete fencing of the RoW to secure the re-establishment of pasture, but the applicant does not challenge the trial judge's finding that the applicant was legally responsible for this fencing.

²⁸ Reasons [132]-[135].

²⁹ Reasons [135].

³⁰ Reasons [190]-[208].

³¹ Reasons [137]-[176] and, in relation to s 431(4) as a “defence”, [183]-[189].

maintaining, inspecting, testing and/or repairing the pipeline in the right of way area;

- (3) That the First, Second and Third Respondents replace topsoil and return the surface of the right of way area to a condition that serves the preconstruction use and implement and maintain land management and erosion control measures in respect of the right of way area;
- (4) That the First, Second and Third Respondents implement the *GLNG Gas Transmission Pipeline Landscape Rehabilitation Management Plan* approved June 2011 in respect of the right of way area;
- (5) That the First, Second and Third Respondents rehabilitate the area of the backfilled pipeline trenches in the area of the right of way, including to ensure a stable landform, the avoidance of subsidence and erosion gullies in the life of the operational pipeline and profiling of the backfilled areas to a level consistent with the surrounding soils;³²
- (6) That, in carrying out the measures required by orders 2, 3, 4 and 5, above, the First, Second and Third Respondents have regard to the report of Mr. Neil Sutherland dated 30 October 2015; the affidavit of Mr. Sutherland sworn on 8 April 2016; and Mr. Sutherland's evidence contained in the Joint Experts' Report and in Mr. Sutherland's oral testimony."

[30] Santos contended in its first outline of submissions,³³ that those orders should not be made for many reasons: relief of that kind was not sought at the trial, the proposed orders are uncertain (because, for example, in carrying out each of orders (2) – (5) Santos is to "have regard" to Sutherland's evidence, there is no identification of what access tracks "are presently required for access and rehabilitation purposes", and there is no identification of what topsoil ought to be removed and in what locations), Sutherland did not recommend that the work described in the orders should be done, and the trial judge accepted Sutherland's evidence that the only additional remedial work that was required involved ongoing watering, monitoring and repair.

[31] In an outline of argument in reply, the applicant made concessions that are important for the disposition of his application for leave to appeal. The applicant:

- (a) accepted the correctness of Santos' argument that mandatory injunctions must state exactly what is required to be done;³⁴
- (b) disclaimed any challenge to "Sutherland's prescriptions for remediation" and sought orders on appeal only for the implementation of those recommendations made by Sutherland which had not been completely fulfilled by the time of the

³² The applicant abandoned pursuit of the struck through words for the expressed reason that the effect of Sutherland's evidence, as accepted by the trial judge, is that work to achieve compliance with condition AH(5) to the extent that soil profiles are made consistent with those of nearby areas was not recommended.

³³ Outline of submissions on behalf of Santos filed 4 September 2017 at [1(a)], [13].

³⁴ Santos cited *Morris v Redland Bricks Ltd* [1970] AC 652 at 666 and *ICI Australia Operations Pty Ltd v Trade Practices Commission* (1992) 38 FCR 248 at 259-260.

trial and which (the applicant contended, but Santos denied) were found to be necessary for Santos to comply with its legal obligations;³⁵ and

- (c) annexed to the outline of argument a draft order which was submitted to be the “type” of order that would be appropriate, and argued that the matter might be remitted to the Planning and Environment Court for that Court to settle the final terms of the order after hearing argument.³⁶

[32] That draft order seeks the following substantive orders to give effect to Sutherland’s expert opinion about the appropriate method of rehabilitation:

- “(3) That the First, Second and Third Respondents, within two weeks of the date of these orders, retain Mr. Neil Sutherland, or a soils remediation expert with comparable skills to Mr. Sutherland who is acceptable to the Applicant;
- (4) That the First, Second and Third Respondents cause Mr. Sutherland, or the other soils remediation expert, to carry out further remediation works on the Applicant’s right of way area so as to return the surface of the right of way area to a condition that serves the preconstruction use, namely, grazing of cattle, by:
 - (a) Achieving a 75% ground cover of the sward of grasses in the designated seed mix;
 - (b) Providing ongoing weed management;
 - (c) Where necessary, supplementing the seed bank;
 - (d) Taking steps to remedy any bare areas;
 - (e) Ensuring that surface soils are regenerated into topsoil;
 - (f) Repairing, reinstating, compacting, treating with gypsum and grassing contour banks that have been damaged as part of the reinstatement rehabilitation works carried out to date;
 - (g) Repairing areas of further subsidence as become evident;
 - (h) Removing any temporary access tracks remaining on the right of way area save and except any such tracks which are presently required for rehabilitation purposes;
 - (i) Provide ongoing monthly monitoring of the sward of grasses in the designated seed mix until they achieve the 75% ground cover;
 - (j) Preparing fenced off sites both in the Right-of-Way and analogue sites outside of it for the purpose of ongoing monitoring.
- (5) That, in the event that 75% groundcover of the sward of grasses in the designated seed mix is not achieved by the end of November 2017, the First Second and Third Respondents cause

³⁵ Amended outline of argument in reply at [8], [11]-[22].

³⁶ Amended outline of argument in reply at [39].

Mr. Sutherland, or the other soils remediation expert, to provide a report to the Planning and Environment Court by 31 December 2017 which reassesses the steps necessary to be taken to achieve that outcome as at the date of the report;

- (6) That, in any event, upon completion of the remediation works, the First, Second and Third Respondents cause Mr. Sutherland, or the other soils remediation expert, to provide a report to that effect to the Planning and Environment Court within 31 days of such completion;

...

- (8) That the matter be remitted to the Planning and Environment Court;
- (9) That the parties have liberty to apply to the Planning and Environment Court.”

[33] Santos argues that leave to appeal should be refused for three reasons:

- (a) The only substantive relief sought at trial was that a technical expert be appointed to identify what contraventions had occurred and what should be done to remedy them, and the trial judge correctly held that the claimed relief should not be granted.
- (b) The relief claimed by the applicant in the proposed appeal was not sought in the Planning and Environment Court, raises fresh factual issues, and is uncertain.
- (c) The effect of the evidence of Santos’ agricultural expert, Mr Sutherland, was that there was nothing to which injunctive orders might usefully be directed and the applicant now accepts his evidence, thereby reversing its opposition to it at the trial.

[34] In relation to the third ground of the trial judge’s decision, Santos submits that leave should be refused because it succeeded in the Planning and Environment Court on the statutory defence in s 431(4) and the draft notice of appeal does not seek to challenge that defence. In response to this argument, the applicant applied for leave to amend the draft notice of appeal by adding a new ground 4A, which contends that the Planning and Environment Court erred in law in finding that Santos had established a defence under s 431(4) and, in the alternative, that in any event Santos breached the EAs by failing to rectify the actions of Saipem once Santos had become aware of them.

[35] Santos also submits that if leave to appeal is granted the appeal should be dismissed, substantially for the same reasons submitted to justify the rejection of leave and because the trial judge did not err in law in finding that the applicant had not established the alleged offences or in finding that Santos had established the statutory defence.

The first main ground for the decision: the orders sought at trial are beyond power

[36] The applicant’s draft notice of appeal does not contain any ground that challenges the first main ground for the trial judge’s decision. However in a supplementary submission dated 29 November 2017 the applicant sought to rely upon a new ground of appeal which challenges that ground for the decision:

“That the trial judge erred in law:

- (a) in concluding at [132] of his reasons for judgment that orders 2 and 3 sought in the Amended Originating Application sought to have the Court concede its jurisdiction to a lay person in the respects identified by his Honour;
- (b) in concluding at [135] of his reasons for judgment that orders 2, 3 and 4 sought in the Amended Originating Application lacked sufficient certainty and that court supervision was not appropriate in the circumstances described by his Honour;³⁷ and
- (c) in concluding consequently that the application did not succeed because the relief sought was either beyond the Court's jurisdiction or uncertain;

in that his Honour

- (d) failed to take into account:
 - (i) the orders that the applicant in fact sought at trial;
 - (ii) the applicant's explanation of the intent of the orders sought;
 - (iii) the applicant's submission as to the Court's jurisdiction, and the appropriateness of the orders sought (as explained and sought at trial); and
 - (iv) the manner by which the applicant submitted the proceeding ought continue and orders ought be made if the Court found that the respondents had breached s 430 or 431 and therefore the Court's discretion under s 505 of the Environment Protection Act 1994 had arisen;
- (e) consequently denied the applicant procedural fairness in not considering the case put to the Court by the applicant."

[37] The denial of procedural fairness contended for in (e) depends upon acceptance of the contention that the trial judge erred in the way described in (d). Appropriately, the parties' arguments focussed upon the alleged failure to take into account submissions made by the applicant's counsel of the kind described in (d).

[38] The applicant relied upon s 505(5) of the EPA as the source of power to make the orders it sought at the trial:

"505 Restraint of contraventions of Act etc.

- (5) If the Court is satisfied—
 - (a) an offence against this Act has been committed (whether or not it has been prosecuted); or

³⁷ The reference to court supervision not being appropriate concerns the applicant's challenge to the second main ground for the decision.

- (b) an offence against this Act will be committed unless restrained;

the Court may make the orders it considers appropriate to remedy or restrain the offence.”

- [39] The applicant does not now argue that s 505 empowered the trial judge upon the conclusion of the trial to make orders (2) and (3). Rather, the applicant’s argument involves two related contentions: the trial judge should have construed the claimed relief as though it contemplated a delay between the making of orders (2) and (3) and the applicant foreshadowed seeking orders that materially differed from orders (2) and (3) after the trial judge had made findings upon the alleged contraventions.
- [40] The applicant submits that having regard to the nature of the litigation and his counsel’s final submissions, orders (2) and (3) should have been understood by the trial judge as orders appointing an independent expert to report about what had been done, whether in the expert’s opinion what had been done complied with the requirements of the EA, and, if not, what measures were required to obtain compliance, after which the Court would use the report to assist it in making findings and orders about what had been done and what remedy was appropriate.³⁸ The applicant submits that the orders it sought were to the same effect as orders that had been made in the Land and Environment Court of New South Wales, which provided for a “stepped” approach, including for further investigations and the preparation of an action plan followed by a court determination of the appropriate remedial orders.³⁹
- [41] The applicant also submits that the fact that such relief was not claimed in its originating application did not prevent the Planning & Environment Court from being empowered to grant it.⁴⁰ He submits that s 441 of the *Sustainable Planning Act* 2009 empowered the trial judge to grant that relief.⁴¹ Santos submits in response that such relief would not have been appropriate because it would have been inconsistent with the way in which the applicant had litigated the case by seeking to prove the alleged contraventions and their spatial extent, so that the trial judge’s discretion not to grant such relief did not miscarry.⁴² Santos submits that the only basis upon which relief of the character now described by the applicant might have been granted was by the appointment of a referee, no such relief was sought, and it would have been inappropriate to grant it.
- [42] The only question raised by the proposed new ground of appeal is whether the trial judge erred in law by failing to take into account the matters in (d) of the proposed new ground of appeal. But to put that question into context it is necessary first to

³⁸ Applicant’s supplementary submission 29 November 2017 at [2]; Transcript 24 November 2017 at T1-39.

³⁹ Applicant’s amended outline of argument in reply 1 September 2017 at 40-46, citing *Great Lakes Council v Lani* (2007) 158 LGERA 1, *Director-General, Department of the Environment, Climate Change and Water (No 1) v Venn* (2011) 210 LGERA 300. *Director-General, Department of Environment, Climate Change and Water (No 2) v Venn* [2011] NSWLEC 232, and the paper delivered by Preston, Chief Judge of the Land and Environment Court of New South Wales, *Injunctions in Planning and Environmental Cases*, Australasian Conference of Planning and Environment Courts and Tribunals, 30 August 2012.

⁴⁰ See *Warwick v Tankey* [2004] QSC 274 at [19]; *Coppo v Banalasta Oil Plantation Ltd* [2005] QCA 96.

⁴¹ That section empowered the Planning & Environment Court to “make an order, give leave or do anything else it is authorised to do on the terms the court considers appropriate”. The applicant’s submissions did not elaborate upon the contention that this was a relevant source of power.

⁴² See *Mark Bain Constructions Pty Ltd v Avis* [2012] QCA 100 at [108], [119].

focus upon orders (2) and (3) in the applicant's amended originating application. Those orders are not open to the construction for which the applicant contends. They unambiguously require (order (2)) a person appointed by the court to identify both any contraventions and the appropriate remedy for those contraventions identified by that person and (order (3)) the implementation of that remedy. Orders (2) and (3) do not refer at all to an expert report of the kind now described by the applicant, to any period of delay between order (2) and order (3) (or between the two tasks required of the appointee by order (2)), or to a post-trial hearing and further judicial decision about the alleged contraventions and their appropriate remedy. In any event, the amended originating application would naturally be understood as seeking that both orders be made at the same time upon the trial judge giving the judgment after the trial unless the applicant gave notice that different orders were sought.

- [43] In opening the case at trial the applicant's counsel described the principal relief he sought as "an investigation at GLNG's cost and implementation of the recommendations of that investigation".⁴³ That did not flag orders that differed from orders (2) and (3), and the applicant's counsel's following submission, that "the order that we seek is actually one that involves an ascertaining by somebody completely independent ... and then a requirement that those works be undertaken",⁴⁴ is consistent with orders (2) and (3).
- [44] During a no case submission on the fourth day of the six day trial, Santos foreshadowed its argument ultimately accepted by the trial judge that orders (2) and (3) were beyond power.⁴⁵ In oral argument the point was forcefully made that the relief sought "an injunction that someone else do the court's job".⁴⁶ The applicant's counsel's response was that order (2) might be amended by replacing "all respects in which" with "the extent to which".⁴⁷ Despite the submission made for Santos and the trial judge's indication that the foreshadowed modification would not make any difference,⁴⁸ the applicant did not seek to amend the claimed relief or foreshadow different orders that would omit the problematic requirements for an expert to identify the contraventions and the appropriate remedy. The applicant's counsel did not foreshadow that the orders might provide for an expert report or post-trial hearing and decision about the contraventions and appropriate remedy. To the contrary, the applicant's counsel submitted that the powers conferred upon the court were extremely broad and if the court found a contravention, the court "would appoint an expert to identify the extent of the contravention ... and the remedy".⁴⁹ In that context, the applicant's counsel's submission that if the court was satisfied that there had been an offence there might be a further hearing at which the trial judge might craft the appropriate remedial orders⁵⁰ did not flag any departure from the substance of orders (2) and (3), especially where the applicant's counsel persisted in seeking the appointment of an individual to determine how to remedy any offence⁵¹ and submitted in terms that "it's quite an appropriate use of the power under this section to appoint somebody to determine what it is that out [sic: ought] to be done to remedy that offence".⁵²

⁴³ Transcript 13 June 2016 at T1-5.

⁴⁴ Transcript 13 June 2016 at T1-40. Emphasis added.

⁴⁵ No Case Submission 16 June 2016 at [9].

⁴⁶ Transcript 16 June 2016 at T3-92 l 28.

⁴⁷ Transcript 16 June 2016 at T4-15 l 40.

⁴⁸ Transcript 16 June 2016 at T4-16 l 24.

⁴⁹ Transcript 16 June 2016 at T4-16 l 30, T4-18 ll 42-44.

⁵⁰ Transcript 16 June 2016 at T4-20 ll 17-20, T4-26 ll 1-5.

⁵¹ Transcript 16 June 2016 at T4-20 ll 25-30, T4-26 ll 10-17.

⁵² Transcript 16 June 2016 at T4-26 ll 15-17.

- [45] Primacy should be given to the closing submissions for the applicant as representing his final position about the relief he sought. In considering what those submissions conveyed, it would be wrong to start with an assumption that the applicant wanted to obtain relief of the kind which he now describes; such relief would have the potential to prolong the litigation and make it more expensive, by imposing upon the expert a requirement to report that person's opinions both about the contraventions (or their "spatial extent") and about the appropriate rehabilitation, by the necessity for a hearing in which the parties might make competing submissions about the decisions the trial judge should make about those matters, by such a decision being reserved, and by disputes requiring judicial resolution about matters of detail during the work. Nor should weight be given to the hindsight that the trial judge has since ruled that the claimed relief was inconsistent with s 505 of the EPA. It is necessary to consider what was in fact conveyed by the applicant's counsel's submissions in the context in which they were made, which includes the orders sought in the amended originating application.
- [46] The applicant's counsel delivered written submissions towards the end of the trial⁵³ and elaborated upon them in his final address.⁵⁴ Early in the written submissions it was explained that orders (2) and (3) were sought on instructions: the applicant was "dissatisfied with the way in which the RoW has been left" and "wants orders that will secure the reinstatement and rehabilitation contemplated by the conditions of the environmental authorities under independent supervision and control".⁵⁵
- [47] Importantly, paragraph 301 of the written submissions anticipated findings of contraventions and, as had been foreshadowed during the no case submission, sought orders for the appointment of an independent expert "to determine the spatial extent of those contraventions and the measures that should be adopted to remedy those matters and to contemporaneously secure the establishment of the specified pasture [within the RoW]". That maintained the claim for the problematic aspects of orders (2) and (3). And in oral submissions the applicant's counsel again argued that it "would be appropriate – middle of paragraph 301 [of the final written submissions] – to appoint an independent expert at GLNG's [Santos'] cost to determine the spatial extent of those contraventions and the measures that should be adopted to remedy those matters". The applicant's counsel also submitted that it was not necessary to amend orders (2) and (3), because of the claim for further or other orders (order (4)) and the nature of the relief sought in the written submission but he indicated a preparedness to amend "in terms of paragraph 301".
- [48] The applicant's written submissions also argued that the orders should be framed after delivery of the reasons containing findings of contraventions, but at the same time he made it clear that the claimed orders were to secure compliance with the measures identified by the independent expert.⁵⁶ And the applicant's counsel subsequently explained the purpose of deferring the framing of relief in a way that was also consistent with the applicant continuing to insist upon the appointment of an expert to determine at least the "spatial extent" of contraventions and the appropriate remedy; the relief should be drafted to **exclude** matters the trial judge found did not amount to an offence⁵⁷ and "for there to be precision the relief for which we contend is the appropriate relief, that is, let's wait until we understand what findings your

⁵³ Applicant's outline 17 August 2016.

⁵⁴ Transcript 18 August 2016.

⁵⁵ Applicant's outline 17 August 2016 at [14].

⁵⁶ Applicant's outline 17 August 2016 at [297]-[299], [302].

⁵⁷ See Transcript 18 August 2016 at T6-91 ll 33-34.

Honour has made about fences and then make orders that an appropriately qualified person identify what needs to be done to cure it”.⁵⁸ At no stage did counsel suggest that the purpose of suggesting that the framing of orders be deferred was that, depending upon the trial judge’s findings, the applicant might wish to claim “stepped” relief of the kind now described.

- [49] Accordingly, as the trial judge mentioned, the orders claimed by the applicant had subtly shifted⁵⁹ from orders (2) and (3). The applicant now sought under order (4) the appointment of an independent expert to determine both the “spatial extent” of any contraventions identified by the trial judge and the appropriate remedy for those contravention. The “spatial extent” of a contravention is one aspect of the contravention which would inform the Court’s decision about the appropriate remedial order under s 505(5), yet under the modified orders it is the expert who determines both the extent of the contraventions and the appropriate remedy for them. For present purposes there is no material distinction between orders (2) and (3) in the amended originating application and the proposed modified order under order (4). Each such order is beyond the power conferred by s 505(5) of the EPA.
- [50] In these circumstances, the fact that the trial judge did not adopt the applicant’s submission that the framing of the orders might be deferred for consideration after the publication of reasons does not mean that the trial judge did not consider that submission.
- [51] My conclusion is that the trial judge did not make the errors of law for which the applicant contends. I would accept Santos’ argument that leave to appeal should be refused on the ground that the only substantive relief sought at trial was that a technical expert be appointed both to identify, or at least define the extent of, what contraventions had occurred and what should be done to remedy any such contraventions so identified or defined, and the trial judge correctly held that such relief should not be granted.

The second main ground for the decision: refusal of orders in the exercise of the Court’s discretion under s 505(5) of the EPA.

- [52] Section 505(5) confers upon the Planning & Environment Court a broad discretionary power to make the orders it considers appropriate to remedy or restrain an offence which the court is satisfied has been committed or will be committed unless restrained. Sections 505(7) and (8) provide that the Court’s power to make an order to ((7)) stop an activity or ((8)) do anything may be exercised whether or not –
- (a) it appears to the Court the person against whom the order is made intends to ((7)) engage, or to continue to engage, in the activity or ((8)) fail, or to continue to fail, to do the thing; or
 - (b) the person has previously ((7)) engaged in an activity of that kind or ((8)) failed to do a thing of that kind; or
 - (c) there is a danger of substantial damage to the environment if the person ((7)) engages, or continues to engage, in the activity or ((8)) fails, or continues to fail, to do the thing.

⁵⁸ Transcript 18 August 2016 at T6-99 ll 12-18.
⁵⁹ Reasons [133]-[134].

- [53] The trial judge decided that even if the applicant established the alleged offences, it was not appropriate to exercise the discretion to grant relief under s 505(5) of the EPA. It is convenient here to refer to some relevant findings by the trial judge. The trial judge: referred to the applicant's ultimate position that, on the basis of Dudgeon's evidence, much more investigation needed to be done to establish the extent of the environmental harm along the RoW and to Santos' argument that its work after 12 November 2015 under Sutherland's supervision essentially provided what the applicant sought in orders (2) and (3);⁶⁰ discussed expert evidence obtained by the parties by the time of the 12 November 2015 review; referred to his preliminary observations at that review that the applicant had no faith in Santos' ability to rehabilitate the applicant's land unless forced to do so by strict orders and Santos had complained that the applicant had been obstructive and non-compliant in allowing Santos to enter the applicant's land to carry out its legal obligations; and concluded that some of those preliminary observations were borne out upon an assessment of the whole of the evidence.⁶¹
- [54] The trial judge went on to discuss expert and other evidence about the rehabilitation work done by Santos under Sutherland's supervision and aspects of the evidence relating to the alleged contraventions of the EAs. In the course of that discussion, the trial judge found that, at a time before the commencement of litigation, the applicant "was completely disenchanted with Saipem, and had adopted an attitude that any rectification work would be controlled by him at Santos' expense" and had "made it very clear that access to his property by Santos or Saipem would not be allowed unless on terms agreed by him". The trial judge concluded that, "since the commencement of these proceedings, [the applicant] has been obstructive and unreasonable in the face of attempts by Santos' lawyers to address his concerns".⁶²
- [55] The trial judge referred to the applicant's criticism of Santos for not properly fencing the RoW to protect the rehabilitation works undertaken under Sutherland's direction, which the applicant's counsel had described as being "a simple, and obvious, land management measure ... to secure the areas to be remediated to facilitate successful remediation".⁶³ After referring to the provisions of a deed (the "Inala deed") which provided that the ownership and responsibility for maintenance of the relevant fencing would pass to the owner on the completion of the construction of the pipeline, the trial judge found that the applicant had incorrectly been adamant that completion of construction had not occurred in order to avoid his obligations under that provision of the deed.⁶⁴
- [56] The trial judge went on to observe that the relief sought by the applicant lacked sufficient certainty and "also calls for court supervision, which may be appropriate for some species of litigation but not in the circumstances here where on all the evidence before me, I am satisfied that Swan will only ever be satisfied if an independent expert is controlled by him, inevitably leading to difficulties (again) about access, and returns to the court to resolve disputes about the way in which the orders are to be implemented".⁶⁵ The trial judge concluded that section of his reasons by stating that he intended to proceed to determine the application on its merits in

⁶⁰ Reasons [38].

⁶¹ Reasons [68].

⁶² Reasons [111].

⁶³ Reasons [113].

⁶⁴ Reasons [118].

⁶⁵ Reasons [135].

case he was wrong in the conclusions he had set out.⁶⁶ After giving extensive reasons for his conclusion that the applicant had not established the offences under ss 430 and 431 of the EPA which he alleged,⁶⁷ the trial judge identified various matters which would have been relevant to the exercise to the discretion to grant relief under s 505(5) of the EPA if the applicant had instead established the alleged offences.

- [57] That exercise of discretion is challenged in (b) of the proposed new ground of appeal set out in [36] of these reasons and in grounds 6 – 10 of the draft notice of appeal. The applicant’s argument upon the proposed new ground focused upon the legal error asserted in (a) rather than upon the exercise of discretion the subject of (b). If, contrary to my view, the applicant’s argument under (a) were correct, the orders sought by the applicant might have complicated and prolonged the parties’ disputes (see [44] of these reasons), thereby adding weight to the trial judge’s exercise of discretion not to grant the relief. It is necessary then to focus upon appeal grounds 6-10.

Appeal grounds 1 – 6: failure to find contraventions.

- [58] Appeal ground 6 contends that in the premises of the preceding paragraphs, the Planning and Environment Court committed an error of law in failing to find that the discretion bestowed upon the Planning and Environment Court by s 505(5) of the EPA to make orders requiring the First, Second and Third Respondents to remedy or restrain offences against s 430 EPA had arisen in the proceeding. Appeal ground 5 contends that in the premises of grounds 1 – 4 the Planning and Environment Court erred in law by failing to find that Santos had committed offences against s 430(3) by contravening conditions of the EAs.
- [59] Accordingly, the particular errors for which the applicant contends in this respect are to be found in appeal grounds 1 – 4. Those grounds assert that the Planning and Environment Court erred in law in failing to find specified contraventions of conditions of the EAs. Those contraventions are described as alleged failures:
- (1) to remove access tracks from the right of way area being access tracks not presently required for rehabilitation purposes or for the purposes of maintaining, inspecting, testing and/or repairing the pipeline in the right of way area;
 - (2) during the period from September 2014 to September 2015, to replace topsoil; return the surface of the right of way area to a condition that serves the preconstruction use; and implement and maintain land management and erosion control measures;
 - (3) during the period from September 2014 to September 2015, to take steps to implement the *GLNG Gas Transmission Pipeline Rehabilitation Management Plan* approved in June 2011 in respect of the right of way area;
 - (4) during the backfilling of pipeline trenches or at any other time, to replace soils so that the soil horizons are consistent with the soil horizons of the immediately surrounding areas and, during the period from September 2014 to September 2015, failing to take steps to rehabilitate the area of the backfilled pipeline trenches in the area of the right of way, including to ensure a stable landform, the avoidance of subsidence and erosion gullies in the life of the operational pipeline and profiling the area of the trenches to a level consistent with the surrounding soils.

⁶⁶ Reasons [136].

⁶⁷ Reasons [137]-[189].

- [60] The effect of appeal grounds 1 – 6 is that the trial judge erred in law by failing to take into account in the exercise of the discretion under s 505(5) of the EPA that Santos had committed four of the offences alleged against it. The applicant argued that the trial judge’s exercise of the discretion was irremediably affected by his conclusion that no such offence had been committed and by the suggested errors which led to that conclusion. In oral argument, it was also submitted for the applicant that even if there were no offences committed by Santos, s 505 empowered the making of orders against Santos to remedy offences committed by Saipem.⁶⁸ That argument appears not to have been put to or addressed by the trial judge. For that reason, in addition to the following reason, it is not necessary to consider it in this application.
- [61] It will be evident from the reasons already given that in holding that the discretion should be exercised against granting the claimed relief the trial judge assumed in the applicant’s favour, contrary to findings which the trial judge went on to make, that the applicant established the offences he alleged.

Appeal grounds 7 – 10: the Planning and Environment Court took irrelevant considerations into account.

- [62] Grounds 7 – 10 challenge the exercise of the discretion to withhold relief under s 505(5). In the way in which this part of the application was argued, it is governed by the well-known principles applicable in an appeal against the exercise of statutory discretion:

“It is not enough that the judges composing the appellate court consider that, if they had been in the position of the primary judge, they would have taken a different course. It must appear that some error has been made in exercising the discretion. If the judge acts upon a wrong principle, if he allows extraneous or irrelevant matters to guide or affect him, if he mistakes the facts, if he does not take into account some material consideration, then his determination should be reviewed and the appellate court may exercise its own discretion in substitution for his if it has the materials for doing so. It may not appear how the primary judge had reached the result embodied in his order, but, if upon the facts it is unreasonable or plainly unjust, the appellate court may infer that in some way there has been a failure properly to exercise the discretion which the law reposes in the court of first instance.”⁶⁹

- [63] The question for the appellate court is not whether it thinks the exercise of the discretion was correct. The applicant does not contend that the case is one in which the trial judge’s exercise of discretion was “unreasonable or plainly unjust”, so as to justify an inference that there had been a failure properly to exercise the statutory discretion. The effect of these grounds of appeal is only that the trial judge took into account matters which were not relevant to the exercise of the discretion.

Appeal ground 7: that the Planning and Environment Court committed an error of law, when considering a notional exercise of discretion pursuant to s. 505(5) EPA, by placing weight on a partial refusal of access to the right of way areas by the Appellant, between 18 September and 12 November 2015, in circumstances where, from September, 2014, the First, Second and Third Respondents had

⁶⁸ Transcript 24 November 2017 at T1-45.

⁶⁹ *House v The King* (1936) 55 CLR 499 at 504-505 (Dixon, Evatt and McTiernan JJ).

signaled a complete rejection of, and refusal to comply with, its obligations pursuant to the conditions of the environment authorities referred to in grounds 1 to 4, above, and only desisted from that rejection and refusal after the proceeding, below, had been commenced and the Appellant had served the First, Second and Third Respondents with the report of Mr. Dudgeon in that proceeding.

[64] Ground 7 is based upon the following passage in the trial judge's reasons:

“[191] Santos' position is that in 2015 Swan unreasonably denied access to its contractors to effect rehabilitation and address a lot of the issues raised in the OA, until forced to do so as consequence of the November 2015 court order. On 18 September 2015, Mr Manning wrote to Carter Newell (Santos' solicitors) as a result of his client being told that ‘work crews’ were moving along the pipeline ‘to conduct rehabilitation works’.

[192] By then Swan was disenchanted with Santos as well as Saipem. That letter sought to place conditions on any entry in accordance with Exhibit 10 which is Swan's Position Statement prepared consequent upon an order of this court made on 11 June 2015. The statement provided very prescriptive conditions for entry and undertaking remedial works, including condition 12:

‘12. Powers of O2 Environment + Engineering

The powers of O2 Environmental + Engineering will be:

- 12.1. To monitor and inspect all aspects of the Remedial Works, other works and access.
- 12.2. To require Santos to stand down such workers who have shown a continuing lawful disregard for the EA, Easement Terms and Deed.
- 12.3. To require work to cease on site where there is not an insubstantial non-compliance with the EA, Easement Terms and Deed.’

[193] Not surprisingly, Santos would not accept such a condition. It is common ground that in June 2015, Swan denied access to Ausecology, described in Exhibit 18 as a third party monitoring rehabilitation works undertaken by Santos' contractor along the pipeline. By then Dudgeon, a principal of O2 Environment + Engineering, had been notified as an expert on behalf of Swan.

[194] At the review on 12 November 2015, Swan argued strongly for a highly proscriptive order which I did not accept for reasons published that day. It was not until the order was made on that day that Santos had the ability to progress its obligation under the EAs and the Deeds relating to Swan's land.

[195] Both experts inferentially acknowledged the need to implement rehabilitation programs sooner rather than later after such major disturbance, and this need was frustrated by Swan's entrenched position. It is a factor that is relevant to the exercise of the discretion.”

- [65] The applicant argued that the trial judge wrongly took into account that at the review on 12 November 2015 the applicant sought a highly prescriptive order which was not accepted. In fact, the trial judge found that the applicant unreasonably denied access to Santos' contractors to rehabilitate the properties, thereby frustrating Santos in fulfilling the need to implement rehabilitation sooner rather than later. This finding supported the trial judge's conclusion that the applicant would only ever be satisfied if an independent expert was controlled by him, which would lead to further difficulties about access and return to the Court to resolve disputed issues. That was a relevant consideration which the trial judge could take into account in the exercise of the discretion to refuse relief.
- [66] The applicant argued that the applicant's lack of cooperation was "of little weight", having regard to Santos' failure to address the concerns of which the applicant had complained, and Santos had acknowledged as valid, as early as July 2014, and where Santos took no action to address those concerns until after the applicant commenced proceedings in May 2015.⁷⁰ That argument implicitly acknowledges that the factor the trial judge took into account was a relevant consideration, even if its weight was limited.
- [67] In the same paragraph of the outline the applicant argued that his concerns were very understandable in the light of the history and the applicant did not refuse access absolutely but instead sought to impose conditions to ensure the work was appropriately directed to rehabilitation. That is not a basis for impugning the trial judge's relevant finding that the applicant would only ever be satisfied if an independent expert were controlled by him, which inevitably would lead to further difficulties about access.

Appeal ground 8: that the Planning and Environment Court committed an error of law, when considering a notional exercise of discretion pursuant to s. 505(5) EPA, by placing weight on actions by the First, Second and Third Respondents to engage Mr. Sutherland to carry out work in partial performance of their obligations to rehabilitate the right of way areas in circumstances where such work was carried out pursuant to a court order and after a long period of rejecting, and refusing to carry out, those obligations.

- [68] The finding described in appeal ground 8 is one aspect of the trial judge's findings that: Sutherland's rehabilitation work conducted at Santos' cost had to a significant extent provided the relief sought in orders (2) and (3), Santos accepted that the obligation was ongoing and Sutherland would have no further part to play unless the applicant agreed, and Santos' actions since it obtained Sutherland's first report on 30 October 2015 had showed Santos' good faith and willingness to comply with its legal obligations.⁷¹ This was also reflected in the trial judge's finding concerning a condition of the EAs that the holder must implement a specified Rehabilitation Plan; the trial judge found that, subject to the applicant's consent, Santos seemed committed to following Sutherland's recommendation to comply with the Plan.⁷² Those findings are plainly relevant to the exercise of the discretion whether or not to make an order under s 505(5). Contrary to the applicant's argument upon this point,⁷³ the circumstance that s 505(8) of the EPA allows for injunctive relief whether or not the Court finds that the respondent intends in the future to breach its obligations does not render this consideration irrelevant to the exercise of the discretion.

⁷⁰ Appellant's outline of argument 22 June 2017, as amended and filed on 18 September 2017 at [173]; Transcript 24 November 2017 at T1-46.

⁷¹ Reasons [196], [197].

⁷² Reasons [159].

⁷³ Applicant's amended outline of argument [177].

- [69] The applicant also referred to the extent of the remediation work, or possible remediation work depending upon the final assessment of the rehabilitation process requiring stated percentages of productive grasses, and the long periods of time during which Santos failed to fulfil its obligations to rehabilitate the land despite many requests by the applicant and until after the commencement of proceedings and submitted that, the appropriate exercise of discretion was to order the continuation and completion of the work recommended by Sutherland.⁷⁴ Those arguments do not deny the relevance to the exercise of the discretion of the trial judge's findings about Santos' commitment to complete the same work of rehabilitation which the applicant now contends should be enforced by court order.

Appeal ground 9: that the Planning and Environment Court committed an error of law, when considering a notional exercise of discretion pursuant to s. 505(5) EPA, by placing weight on actions by the Appellant in the course of an unrelated dispute about a stockpile of soil by the First, Second and Third Respondents on the Appellant's land.

- [70] Appeal ground 9 concerns the conduct of the applicant in the course of a dispute with Santos about a stockpile of soil on Inala resulting from the construction of the "Meridian Interconnector" adjacent to the intersection of the RoW and a road, which connected the pipeline over the applicant's land to other pipelines. The trial judge observed that this only had "some relevance" to the subject proceedings⁷⁵ but accepted Santos' submission that the communications between the applicant and Santos upon this issue were relevant to the exercise of the discretion to grant relief.
- [71] At the trial the applicant insisted that he wanted the stockpile removed from his land. The following summary of the evidence was adopted by the trial judge:
- "a. Santos wanted, on 11 June 2015, to remove the soil from Swan's property;
 - b. Swan (on 12 June 2015) advised that he was not willing to have the material removed, unless Santos paid \$9.00 per cubic meter for it to be stored on his property (provided it was clean-fill);
 - c. On 17 June 2015, Swan advised that any removal of soil from his land would be treated as conversion of his property and that he would take steps to protect his interests;
 - d. On 17 June 2015, Swan advised that he had denied Ausecology (a contractor engaged by Santos to undertake rehabilitation works) access to his property. Swan said that this was because legal proceedings were on foot;
 - e. On 17 June 2015, Santos again sought confirmation as to what Swan wanted done with the soil (which Santos had found was clean-fill);
 - f. On 18 June 2015, Santos was told by Swan's solicitors that 'the excavated material is to remain on our client's property and is to remain in the area of the Meridian Interconnect works';

⁷⁴ Amended outline of argument in reply 1 September 2017 at [13]-[22]; Transcript 24 November 2017 at T1-48.

⁷⁵ Reasons [19].

- g. On or about 1 July 2015, the independent supervisor identified and approved a site for the removal of the stockpile because Santos could not leave it in the working area and still undertake construction works;
- h. On or about 1 July 2015, Swan complained to the police about the removal of soil from his land. Santos therefore instructed its contractor to not remove the soil;
- i. On 1 July 2015, Swan's solicitors advised Santos' solicitor that 'your client does not have a clear right to remove excavated material from our client's property and your client is constrained to do those works within the area identified within the agreement reached and no other area. In the event that your client considers the area is not sufficient that is a matter that your client ought to have addressed at the time of entering into the agreement that was reached';
- j. On 2 July 2015, Santos confirmed its intention to store the soil offsite so as not to hinder the workspace. Santos advised that it would return the soil as soon as possible;
- k. On 2 July 2015, Swan's solicitor advised that if Santos proceeded to remove the excavated material 'we will refer the matter to the constabulary';
- l. On 29 July 2015, Santos asked Swan to explain why he had contacted the police;
- m. On 3 September 2015, Santos advised that it would shortly be in a position to return the soil to Swan's property. Santos also asked Swan whether he would like the soil placed elsewhere (instead of the working area) or disposed of altogether;
- n. On 11 September 2015, Santos (having received no response to its letter of 3 September 2015) advised that unless it received response from Swan by 5.00pm on 18 September 2015, the stockpile soil would be returned to its original stockpile location. It later returned the soil."⁷⁶

[72] The trial judge considered that that those events gave considerable insight into the difficulty Santos had in dealing with the applicant and that the dispute about the soil was unnecessary and resulted only from the applicant's "stubbornness and inability to work through matters constructively and simply".⁷⁷ The applicant's attitude to that issue was found to be consistent with his approach generally to issues including access for rehabilitation purposes, particularly after the commencement of the proceedings; that attitude was perhaps understandable but the trial judge concluded that it was unhelpful to the reasonable resolution of the problem.⁷⁸ Those findings also supplied support for the trial judge's conclusion that the applicant would only ever be satisfied if an independent expert were controlled by him, which would inevitably lead to further difficulties about access and returns to the Court to resolve

⁷⁶ Reasons [202].

⁷⁷ Reasons [203].

⁷⁸ Reasons [204].

disputed questions about implementation of any orders. Accordingly they were relevant to the exercise of the discretion whether to grant relief of the kind claimed by the applicant.

- [73] The applicant argues that the trial judge erred in relying upon the dispute because the dispute occurred after the applicant had commenced proceedings and long after the applicant had yet again made Santos aware of the need for rehabilitation, the dispute did not prevent Santos from undertaking rehabilitation work, the trial judge's findings indicate that there were issues properly in dispute about the soil, and the trial judge found that the applicant's attitude was understandable given the history of his treatment by Saipem.⁷⁹ Those arguments raised relevant considerations but they did not deny the relevance of the considerations taken into account by the trial judge.

Appeal ground 10: that the Planning and Environment Court committed an error of law, when considering a notional exercise of discretion pursuant to s. 505(5) EPA, by placing weight on sums of money paid by the First, Second and Third Respondents to the Appellant in respect of matters unrelated to the issues in the proceeding, below.

- [74] Appeal ground 10 concerns findings relating to compensation paid by Santos to the applicant under a settlement, which included a payment for the settlement of unrelated litigation about the Meridian Interconnector as well as for option fees, compensation in advance, fencing, and the repair of a dam. The applicant argued that the payment was irrelevant because it concerned a dispute that was unrelated to the subject proceeding.
- [75] In the applicant's amended originating application, the applicant contended that a condition of the EAs was likely to have been contravened in relation to the construction of the Meridian Interconnector⁸⁰ and the applicant adduced the settlement deed as evidence in his case.⁸¹ In evidence to which the trial judge referred, the applicant appeared to accept that, although he was only legally entitled to approximately \$700 as compensation for access to about 3,000 square metres of land required for the construction of the connector, under the settlement Santos paid him \$187,830 on that account together with \$147,042 which was not related to any identified head of compensation, and Santos also agreed to pay an independent expert to supervise its works on the land.⁸² After referring to the settlement arrangements and the amount of approximately \$700,⁸³ the trial judge observed that "when one has regard to those documents and [the applicant's] evidence concerning this issue, this amount is a relevant factor in the exercise of the discretion", that the expert referred to in the deed was appointed, and it was not suggested that Santos did not comply with its obligations relating to this land.⁸⁴
- [76] The effect of the findings is that, shortly after the applicant commenced the proceedings and in order to resolve a dispute with the applicant, Santos assumed and thereafter complied with a variety of obligations to the applicant, including obligations to pay a substantial amount of money to which the applicant otherwise

⁷⁹ Applicant's amended outline of argument 18 September 2017, at [179]-[185].

⁸⁰ Amended originating application, Grounds, at [10(i)(iv)], [10(j)], [15], [16], [32] ("soils excavated for the Meridian Interconnector have been intermingled ... [and] intermingled with road base ... [and] the intermingled soils are unsuitable for use to reinstate the pre-disturbed soil suitability class and if used would modify the soil profile and would be likely to subside").

⁸¹ Reasons [207].

⁸² Transcript 14 June 2016 at T2-27.

⁸³ Reasons [207].

⁸⁴ Reasons [208].

had no apparent entitlement and to appoint an independent person to supervise Santos' works. That could reasonably be regarded as supplying additional support for the trial judge's confidence that Santos would fulfil its commitment to continue to rehabilitate the applicant's land to the extent required by Sutherland. The fact that the settlement was of an unrelated dispute may have affected the weight that might be attributed to this consideration, but it did not render it entirely irrelevant in the exercise of the discretion to refuse relief.

Disposition and order

[77] The applicant has not demonstrated that there is any error of law in either of the first and second main grounds for the trial judge's decision, each of which is of itself a sufficient reason for refusing leave to appeal. For that reason, and because the proposed appeal involves a substantial departure from the way in which the applicant litigated the case in the Planning & Environment Court, it is unnecessary to consider the merits of the third main ground for the trial judge's decision.

[78] In relation to the last point, the applicant argued that the relief sought in the appeal (see [32] of these reasons) is within the relief sought in the amending originating application and consistent with the case at trial, even though the relief is "adjusted for a finding of fact which is not being appealed".⁸⁵ Order (4) is expressed in such broad terms as to be capable of comprehending the relief now claimed, and many other forms of relief. But at the trial the applicant articulated the nature of the orders he sought in terms that excluded relief of the kind now sought. The relief the applicant sought throughout, including in final submissions, was based upon the trial judge accepting Dudgeon's evidence about the appropriate remediation, which substantially differed from the remediation recommended by Sutherland; and the applicant sought only the appointment of an expert to define contraventions, or their extent, and to determine the appropriate remedy. Having lost his challenge to Sutherland's evidence about how the land should be remediated and the argument about whether the orders he claimed could or should be granted - which formed a central plank of the applicant's case at trial - the applicant now seeks leave to appeal from the decision that Santos did not commit the alleged offences merely so that he can construct a very different form of relief on appeal. I would not grant leave to appeal for that purpose.

[79] In CA 2779/17, I would refuse the application for leave to appeal, with costs.

Proposed costs appeal

[80] The trial judge ordered the applicant to pay Santos' costs of the proceedings in the Planning & Environment Court to be assessed on the standard basis or as agreed. The applicant seeks leave to appeal from that order.

[81] The first ground of the proposed costs appeal is that the cost order should be reconsidered in light of the result of the application for leave to appeal against the substantive judgment. That ground is unnecessary and need not be considered.

[82] It is not in issue that the costs of the proceeding were governed by s 457 of the *Sustainable Planning Act 2009 (Qld)*.⁸⁶ Section 457(1) provided that the costs of

⁸⁵ Amended outline of argument in reply 1 September 2017 at [9].

⁸⁶ The then current form of s 457 was introduced by the *Sustainable Planning and Other Legislation Amendment Act (No 2) 2012 (Qld)*, which commenced on 22 November 2012. The *Local Government Electoral (Transparency and Accountability in Local Government) and Other Legislation Amendment Act 2017 (Qld)* replaced s 457(1) with a provision that, subject to some exceptions, "each party to a proceeding must bear the party's own costs for the proceeding". That provision commenced on 19 May 2017, after this matter was determined.

a proceeding are in the discretion of the Planning and Environment Court. That is subject to various qualifications in following subsections. In this case it is only some paragraphs of s 457(2) that are submitted to be relevant.

[83] In *Cox v Brisbane City Council (No 2)*⁸⁷ Rackemann DCJ held that the discretion s 457(1) conferred was “an open one” which, unlike the general rule in other courts dealing with ordinary civil litigation, was not to be approached on the basis that there is a presumption that costs follow the event; the generally expressed discretion was to be exercised judicially with regard to the non-exhaustive list of considerations s 457(2) and the relevant circumstances of the particular case. The trial judge applied those principles and neither party puts them in issue in this application.

[84] Before the trial judge, Santos relied upon the following parts of s 457(2):

“457 Costs

(2) In making an order for costs, the court may have regard to any of the following matters—

(a) the relative success of the parties in the proceeding;

...

(c) whether a party commenced or participated in the proceeding for an improper purpose;

(d) whether a party commenced or participated in the proceeding without reasonable prospects of success;

...

(i) whether a party has acted unreasonably in the conduct of the proceeding, including, for example—

(i) by not giving another party reasonable notice of the party's intention to apply for an adjournment of the proceeding; or

(ii) by causing an adjournment of the proceeding because of the conduct of the party;

...

(l) whether a party has incurred costs because another party has defaulted in the court's procedural requirements;”

[85] The trial judge's costs decision was mainly based upon his conclusion that paragraphs (a) and (d) were relevant considerations.

[86] With reference to paragraph (a), the trial judge observed that the applicant was wholly unsuccessful in his serious allegations that Santos has breached conditions of the EAs, and that resulted from a construction of the conditions of the EAs and a conclusion that the applicant had not satisfied the onus of proving the alleged breaches, rather than from credibility findings. That is not contentious.

[87] With reference to paragraph (d), the trial judge observed that the applicant resisted attempts by Santos and the court to properly particularise his case under s 505(5) of

⁸⁷ [2014] QPELR 92 at [2]; see also *LMRM Pty Ltd v Brisbane City Council* (2017) 222 LGERA 99 at [2], in which Rackemann DCJ made similar observations.

the EPA. In this respect, the trial judge noted that: on 22 April 2016 Santos' application to strike out the proceeding on the basis that it disclosed no properly identified cause of action was heard but adjourned to the trial for the evidence to be tested; on 8 May 2016 the trial judge ordered the applicant to deliver to Santos a list of issues contended to be actionable under s 505 and still affecting his land; the list delivered on 31 May 2016 did not identify the section or sections relied upon by the applicant as amounting to an offence under the Act; although the trial judge made that clear to counsel for the applicant on the fifth day of the trial (17 June 2016), it was not until the applicant's outline was delivered on 17 August 2016 that a real attempt was made to particularise the offences by reference to ss 430 or 431 of the EPA. The trial judge stated that his reasons for dismissing the applicant's application "establish that Mr Swan never did properly particularise his case;⁸⁸ the principal orders sought in 2 and 3 of his AOA impermissibly sought to have the court concede jurisdiction to a lay person".⁸⁹ The applicant persisted with the trial even after Sutherland had undertaken the works subsequent to the 12 November 2015 order. Taking the evidence to the highest, it did not establish any breach of the EAs, and the combination of those matters meant that the applicant never did have any reasonable prospects of succeeding in the proceeding.

- [88] In the course of rejecting the applicant's arguments to the contrary, the trial judge observed:

"The court never did rule against the no case submission as [the applicant] suggests. It was deferred and put off to the trial which, by then, was less than seven weeks away."⁹⁰

- [89] The second and third grounds of the proposed costs appeal contend that the trial judge misdirected himself that he had not ruled against Santos' no case submission and Santos did not insist upon a ruling on its no case submission, and that the trial judge confused the no case submission with the earlier application to strike out the amended originating application. Santos argues that the trial judge's reference to the no case submission was intended as a reference to the strike out application, which the trial judge had mentioned in a preceding paragraph of his reasons. This was submitted to be a slip of no consequence. The applicant also submitted that an application to strike out and a no case submission were closely related concepts.

- [90] An obstacle to acceptance of Santos' argument is that the applicant did in fact submit that the court had ruled against Santos' no case submission.⁹¹ It is uncontroversial that the submission was correct; the trial judge rejected the no case submission made by Santos on the fourth day of the trial.⁹² As the applicant argued, the trial judge must have inadvertently confused the no case submission with an earlier application by Santos to strike out the applicant's originating application, which was adjourned to the trial.

- [91] The finding that the no case submission had not been rejected was material for the trial judge's exercise of the costs discretion, notwithstanding that, as Santos argues, the trial judge relied upon other considerations as support for the costs order. The no

⁸⁸ [2017] QPEC 17 at [10]. The trial judge cited Reasons [135].

⁸⁹ [2017] QPEC 17 at [10]. The trial judge cited Reasons [132].

⁹⁰ [2017] QPEC 17 at [11].

⁹¹ That submission was made in the Applicant's outline of submissions on costs 16 February 2017 at [39].

⁹² Transcript 16 June 2016 at T4-27 l 43.

case submission was primarily based upon Santos' argument that the relief claim by the applicant should not be given because it was beyond power. The trial judge's rejection of the no case submission is not readily reconcilable with a conclusion that the claimed relief was so obviously unavailable as to justify a finding that the proceeding lacked reasonable prospects of success. And the fact that Santos acquiesced in the adjournment to the trial of its application to strike out the proceedings also tends against a view that the flaws found in the applicant's claim after a trial should have been apparent to him from the outset.

- [92] It follows that the trial judge's exercise of discretion miscarried: see [62] of these reasons. The error was an error of law, if only because it was inconsistent with the only evidence and submissions. I would grant leave to appeal because of the nature of the error. It follows that the discretion should be re-exercised afresh.
- [93] The applicant's outline of offences of 3 August 2016⁹³ appears on its face to supply a generally reasonable level of particularity of the alleged offences, although in some respects it may have been inadequate; in any case, as the applicant points out, although the trial judge referred to a failure by the applicant to provide proper particulars, the trial judge did accept that in the applicant's outline delivered on 17 August 2016 the applicant had made a real attempt to particularise the offences by reference to the relevant provisions of the EPA.⁹⁴ The applicant's case was explained in great detail in that outline. It is not immediately obvious that the delay in supplying that level of particularity resulted in any significant prejudice to Santos at the trial. Furthermore, the applicant was acquitted of any procedural defaults.
- [94] The applicant also argues that notwithstanding the trial judge's conclusion that the applicant continued with the proceeding in the face of insurmountable legal obstacles, the trial judge did accept that even Sutherland found inadequacies in the RoW.⁹⁵ The trial judge's characterisation of the inadequacies as falling outside the requirements of the conditions of the EAs is submitted to involve mixed questions of fact and law which required the application of technical legislation (including the EAs) to technical factual scenarios. The applicant also submits that Dudgeon's evidence supported his arguments that the rehabilitation done under Sutherland's supervision had been inadequate. Reference even to the relatively brief summary of evidence in [3]-[25] of these reasons suggests that there is substance in these arguments. Overall my strong impression is that the applicant did have a reasonably arguable case about the alleged contraventions, or at least those of them which were argued in this application.
- [95] Santos argues that the legal obstacles identified by the trial judge concerned the absence of power to grant orders (2) and (3) and the uncertainty of the relief described in order (4), "such further or other orders as the court may seem just to remedy the contraventions". That argument is weakened by the refusal of the no case submission. Although I agree with the trial judge's conclusion that orders (2) and (3), and the modified version of them sought under order (4), were beyond power, in my respectful opinion it does not follow that there was anything unreasonable about the applicant's pursuit of the litigation. If his arguments about the construction of the

⁹³ AB 2510.

⁹⁴ This is one of the arguments advanced in support of ground 4 of the proposed costs appeal, which contends that the trial judge misdirected himself in concluding that the applicant continued with his application in the face of insurmountable legal obstacles. In view of my acceptance of grounds 2 and 3, it is not necessary for me to separately consider any other ground.

⁹⁵ [2017] QPEC 17 at [11].

conditions of the EAs had been accepted and the trial judge had been more impressed with Dudgeon's evidence, the trial judge might have acceded to the applicant's request to make findings before framing the final relief. Although I have concluded that the trial judge did not err in law in failing to adopt that approach, it would have been open to him to do so.

- [96] In addition to the relevant consideration that Santos was wholly successful in the proceeding, the relevant matters under s 457(2) are that neither party commenced or participated in the proceeding for an improper purpose or without reasonable prospects of success, acted unreasonably in the conduct of the proceeding, or incurred costs because the other party had defaulted in the Court's procedural requirements. Other relevant considerations are that the decision to reject the applicant's claim in the exercise of a discretion was not readily predictable, there was no suggestion that Dudgeon, whose evidence supplied substantial support for important aspects of the applicant's case, was not a reputable expert in the field, the first reports of both experts appeared to supply support (albeit in varying degrees) for the applicant's concerns about Santos' compliance with the conditions of the EAs, substantial progress in rehabilitation of the land appears to have occurred only after the applicant issued proceedings against Santos, and Dudgeon's evidence supplied some support for the applicant's concern about the adequacy of the ongoing rehabilitation.
- [97] In deciding upon the appropriate order, I would take into account the matters already mentioned, including the result of the litigation, and also that Santos identified the defects in the relief sought by the applicant in very clear language on the fourth day of the trial (16 June 2016). Notwithstanding the refusal of the no case submission, it is a relevant consideration that the applicant thereafter persisted in claiming only orders (2) and (3), or the modified form of those orders. Even so, and bearing in mind that the familiar approach in much litigation that costs ordinarily follow the event does not apply in this case, I am not persuaded that the applicant should be ordered to pay all of Santos' costs of the proceedings at first instance. In my view the appropriate order is that the applicant pay the costs incurred by Santos after 16 June 2016.

Disposition and order

- [98] In CA4367/17, I would grant the application for leave to appeal and allow the appeal with costs, set aside the costs order made in the Planning & Environment Court on 24 March 2017, and instead order that the applicant pay the costs incurred by the respondents after 16 June 2016.
- [99] **McMURDO JA:** I agree with Fraser JA.
- [100] **HENRY J:** I have read the reasons of Fraser JA. I agree with those reasons and the orders proposed.

PLANNING AND ENVIRONMENT COURT OF QUEENSLAND

CITATION: *Swan v Santos GLNG Pty Ltd & Ors (No 2)* [2017] QPEC 17

PARTIES: **STEPHEN JOHN SWAN**
(applicant)

v

SANTOS GLNG PTY LTD ACN 131 271 648
(first respondent)

and

PAPL DOWNSTREAM PTY LTD ACN 147 649 205
(second respondent)

and

TOTAL GLNG AUSTRALIA ACN 146 680 524
(third respondent)

and

THE CHIEF EXECUTIVE ADMINISTERING *THE ENVIRONMENTAL PROTECTION ACT 1994*
(fourth respondent)

FILE NO/S: D80 of 2015

DIVISION: Planning & Environment Court

PROCEEDING: Application for costs

ORIGINATING COURT: Planning & Environment Court, Maroochydore

DELIVERED ON: 24.03.2017

DELIVERED AT: Planning & Environment Court, Maroochydore

HEARING DATE: On the papers. Submissions received until 16.2.17

JUDGE: Robertson DCJ

ORDER: **The applicant pay the costs of the proceeding of the first, second and third respondents, to be assessed on the standard basis or as agreed.**

CATCHWORDS: COSTS - PLANNING – ENVIRONMENT: where applicant wholly unsuccessful in application for orders pursuant to s 505 of the *Environmental Protection Act 1994*; whether applicant had any reasonable prospects of successfully obtaining such orders; where applicant had failed to properly particularise or relate evidence to alleged breaches of Environmental

Authorities, whether applicant had obstructed or delayed or acted unreasonably in the proceeding.

Legislation

Environmental Protection Act 1994 ss 430, 431, 505

Sustainable Planning Act 2009 s 457

Cases

Cox & Ors v Brisbane City Council & Anor (No 2) [2014] QPELR 92

LMRM Pty Ltd v Brisbane City Council [2017] QPEC 7

Caloundra City Council v McCreath [1998] QPELR 179

COUNSEL: R Litster QC of Counsel for the Applicant
J Horton QC and DM Favell of Counsel for the Respondent

SOLICITORS: P&E Law for the Applicant
Carter Newell for the 1st, 2nd and 3rd Respondents
Department of Environment and Heritage Protection for the Fourth Respondent

- [1] On 3 February 2017, I dismissed Mr Swan’s application for reasons published that day. The parties have each provided written submissions on the issue of costs.
- [2] Santos seeks an order that Mr Swan pay their costs of and incidental to the proceeding to be assessed on the standard basis, if not agreed. Mr Swan submits that there should be no order as to costs.
- [3] The court has a general discretion with respect to costs.¹ The discretion is broad, but should be exercised judicially. There is no presumption that costs should ordinarily follow the event, nor that parties have some qualified privilege against an adverse costs order. Section 457(2) sets out a non-exhaustive list of matters to which the court may have regard.² It is common ground that the discretion to order costs of a “proceeding” in s 457(1) extends to a proceeding such as this pursuant to s 505 of the *Environmental Protection Act 1994*.³
- [4] In its costs submissions Santos focuses on s 457(2)(a), (c), (d), (i) and (l):
 - “(2) In making an order for costs, the court may have regard to any of the following matters—
 - (a) the relative success of the parties in the proceeding;
 - ...
 - (c) whether a party commenced or participated in the proceeding for an improper purpose;

¹ Section 457 of the *Sustainable Planning Act 2009* (the SPA).

² *Cox & Ors v Brisbane City Council & Anor (No 2)* [2014] QPELR 92; *LMRM Pty Ltd v Brisbane City Council* [2017] QPEC 7 at [2].

³ See by analogy *Caloundra City Council v McCreath* [1998] QPELR 179.

- (d) whether a party commenced or participated in the proceeding without reasonable prospects of success;
- ...
- (h) (i) whether a party has acted unreasonably in the conduct of the proceeding, including, for example—
 - (i) by not giving another party reasonable notice of the party's intention to apply for an adjournment of the proceeding; or
 - (ii) by causing an adjournment of the proceeding because of the conduct of the party;
- ...
- (l) whether a party has incurred costs because another party has defaulted in the court's procedural requirements;”

Discussion

Section 457(2)(a)

- [5] At the heart of Mr Swan's application were serious allegations that Santos had breached conditions of various Environmental Authorities which it held over his land, and had therefore committed criminal offences pursuant to either ss 430 and/or 431 of the *Environmental Protection Act* 1994 (the EPA). In this he was entirely unsuccessful.⁴ My conclusions did not follow from credibility findings against Mr Swan or his witnesses; rather they followed from construing the environmental authority conditions, and concluding that Mr Swan had not satisfied the onus placed on him to satisfy the court that Santos had breached any of the conditions.⁵ His application failed, despite there being any real challenge to his evidence of what had occurred along the RoW,⁶ during and post construction of the pipeline.

Section 457(2)(c)

- [6] It was never directly suggested to Mr Swan that his purpose in commencing and/or participating in the proceeding was for an improper purpose, e.g. to force Santos to pay him compensation when none was due. As my reasons disclosed, he was not aware of the Environmental Authorities until after the pipeline was constructed over his land. It was not suggested that he continued with these proceedings after the Meridian Interconnector proceedings were compromised, for some improper purpose. This is not a factor that bears upon the exercise of the discretion in the circumstances of this case.

Section 457(2)(d)

- [7] As my reasons disclose, Mr Swan never came to grips with what he had to prove; and he resisted a number of attempts, both by his opponent and myself, to properly particularise his case pursuant to s 505(5) of the EPA. On 22 April 2016, Santos's application to strike out the proceeding on the basis that it disclosed no properly identified cause of action was heard, and ultimately it was put off to the trial when all the evidence could be tested. On 18 May 2016, I ordered Mr Swan deliver to Santos

⁴ See [141]-[176] of reasons for judgment (RJ).

⁵ Section 505(5) of the EPA.

⁶ Pipeline Right of Way easement over his properties.

his list of issues which he contended were actionable under s 505, and still affecting his land.

- [8] The list was delivered on 31 May 2016. As I noted in my reasons, the list did not identify, by reference to any offence under the Act, the section or sections relied upon by Mr Swan.⁷ I made it very clear to Mr Swan’s Counsel on 17 June 2016 (the fifth day of the trial) that I regarded this issue as a “threshold” question.⁸ It was not until his outline, delivered 17 August 2016, that Mr Litster QC made any real attempt to particularise offences by reference to either ss 430 or 431 of the EPA.⁹
- [9] Ultimately, Mr Swan’s position seemed to be that the court could ultimately rely on the “catch-all” order 4 sought in the prayer for relief, in effect leaving it to me (in the absence of proper particularisation) to decide if the evidence was sufficient to ground proof of alleged breaches of the EAs.
- [10] The reasons establish that Mr Swan never did properly particularise his case;¹⁰ the principal orders sought in 2 and 3 of his AOA impermissibly sought to have the court concede jurisdiction to a lay person.¹¹ He never did properly consider how the various conditions of the EAs should be construed as a matter of law having regard to s 505(5) of the EPA; he persisted with the trial even after Mr Sutherland had undertaken the works subsequent to the 12.11.15 order, with the results referred to in detail in my reasons; and even taking the evidence put on by him at its highest, it did not establish any breach of the EAs. In combination, these matters lead me to conclude that Mr Swan never did have any reasonable prospects of succeeding in the proceeding.
- [11] Mr Swan’s costs submission,¹² simply fails to come to grips with these matters. The court never did rule against the no case submission as Mr Litster suggests. It was deferred and put off to the trial which, by then, was less than seven weeks away. Santos did not insist that I make a ruling on its no case submission, and Mr Swan overlooks the fact that it was his proceeding and, as I determined, he continued with it in the face of insurmountable legal obstacles. That Mr Sutherland found inadequacies in the RoW is not to the point. Mr Swan’s case was that Santos had breached its EAs, which he completely failed to establish. Again, when Mr Litster refers on a number of occasions to a “legitimate contest between experts”, he misses the point that, for the legal reasons identified in the reasons, his client never did have any reasonable prospects of success.

Section 457(2)(i)

- [12] As I understand Santos’s submission on this discrete provision, it essentially relies upon its arguments advanced in relation to s 457(2)(a), (c) and (d). Once again, Mr Litster’s submissions, based on alleged failures by Santos to rehabilitate his client’s land prior to the commencement of these proceedings, is of no relevance, when one has regard to the nature of the relief sought in, and the ultimate fate of, the AOA.

Section 457(2)(l)

⁷ See RJ [30] and [121].

⁸ See RJ [31].

⁹ See RJ [122]-[123].

¹⁰ RJ [135].

¹¹ RJ [132].

¹² 16 February 2017, [34]-[40].

- [13] I do not think this provision is engaged in the circumstances of this case.
- [14] Mr Litster refers to s 505(10) of the EPA which provides that the court “must order a plaintiff to pay costs if the Court is satisfied the proceeding was brought for obstruction or delay”.
- [15] Certainly Santos submits that Mr Swan was obstructive and unreasonable in his conduct of the proceedings which I took to be a reference to s 457(2)(i) of the SPA, and not s 505(10) of the EPA. I do not agree that paragraphs [68] and [101] of my reasons amount to a conclusion that Mr Swan was acting unreasonably in the conduct of the proceeding, and it is certainly not supportive of any conclusion that the proceeding was brought for obstruction or delay. Santos does not refer to s 505(10) in its costs submission and it does not arise in this case.

Conclusion

- [16] For the reasons set out above, particularly in relation to s 457(2)(a) and (d), I order that the applicant pay the costs of the first, second and third respondents of and incidental to the proceeding to be assessed on the standard basis, if not agreed.

Appendix 4 – Barns judgment

PLANNING & ENVIRONMENT COURT OF QUEENSLAND

CITATION: *Barns and Barns v Maroochy Shire Council* [2010] QPEC 2

PARTIES: **James Thomas Barns and Lynette Joy Barns**
(Appellants)
v
Maroochy Shire Council
(Respondent)

FILE NO/S: 2434 of 1998

DIVISION: Planning and Environment

PROCEEDING: Appeal from Council decision rejecting claim for compensation for injurious affection resulting from introduction of new Strategic Plan

ORIGINATING COURT: Brisbane

DELIVERED ON: 3 February 2010

DELIVERED AT: Brisbane

HEARING DATE: 21 April - 1 May, 27 July - 31 July, 6 August - 7 August, 13 August - 19 August 2009, adjourned to 2 December for oral submissions.

JUDGE: Searles DCJ

ORDER: **APPEAL DISMISSED**

CATCHWORDS: PLANNING AND ENVIRONMENT – ASSESSMENT OF
COMPENSATION – ENVIRONMENT - GOOD QUALITY
AGRICULTURAL LAND – PLANNING NEED - COSTS OF
DEVELOPMENT – PREMATUREITY/LEAP FROGGING
FLOODING AND DRAINAGE – ACID SULPHATE SOILS –
TRAFFIC ENGINEERING – TOWN PLANNING
CONSIDERATIONS

Local Government (Planning and Environment) Act 1990

Local Government (Planning and Environment) Regulation 1991

Local Government Act 1936

Local Government Act 1985

Nature Conservation Act 1992

Environmental Protection Act 1994

Vegetation Management Act 1999

1985 Shire of Maroochy Planning Scheme

1985 Shire of Maroochy Strategic Plan

1966 Shire of Maroochy Strategic Plan

State Planning Policy 1/1992

COUNSEL: G. Gibson QC with M. Williamson – Appellant
C. Hughes SC with R. Litster SC and A. Skoien – Respondent

SOLICITORS: P&E Law - Appellant
Sunshine Coast Regional Council Legal Services – Respondent

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INTRODUCTION

- [1] This is an appeal against the decision of the Council rejecting the appellants' claim for compensation pursuant to s 3.4 of the *Local Government (Planning and Environment) Act 1990* (PEA). The hearing took place over a protracted period of 20 days commencing on 21 April 2009, from then to 1 May, 27 to 31 July, 6-7 August and 13 -19 August when it was adjourned for oral submissions on 2 December. Subsequently the parties delivered extensive [401 pages] written submissions. Shortly before 2 December it was agreed that oral submissions would not proceed on 2 December and would be set for a later date if thought necessary after I had read the written submissions. It was not necessary.
- [2] The appellants are the registered owners of Lot 31 on RP 858565 situated at Monak Road, Weyba Downs (the Land). The basis of the claim is that, as a consequence of the introduction of a new Strategic Plan on 10 May 1996 (Relevant Date), replacing the 1985 Strategic Plan, the Land was injuriously affected within the meaning of that term in s 3.5 of the PEA resulting in the reduction in its value.
- [3] The Council resists the claim on two bases: firstly, that there is a statutory exclusion of the claim under s 3.5(4)(d), s 3.5(5) and s 4.4(5A) of the PEA and, secondly, even if that exclusion does not operate to defeat the claim, the value of the Land was not injuriously affected by the introduction of the 1996 Strategic Plan so the appellants have suffered no loss.¹

AFFECT OF CHANGE IN STRATEGIC PLAN

- [4] Under the 1985 Plan the Land was zoned Rural A. Approximately 103.6 ha were included in the Urban Areas Preferred Dominant Land Uses (PDLU) designation and, the balance of approximately 51.4 ha was included in the Rural Areas PDLU designation. The land in the urban areas PDLU comprises most of the northern portion of the Land and a triangle of land on the eastern side of the southern portion. The Rural Areas PDLU land comprises an approximately 6 ha triangle on the western side of the northern portion adjacent to the Noosa National Park and a larger triangle in the western section of the southern portion.²

After the Relevant Date, upon introduction of the 1996 Strategic Plan, the Land remained in the Rural A zone under the Planning Scheme but its PDLU designation was changed in that:-

¹ Council's primary submissions paragraphs 20 and 155.

² See Plan Exhibit 1A p. 21.

- (a) most of the Land was designated Rural or Valued Habitat PDLU;
- (b) land in the north-east corner of the northern portion, the north-west portion of the southern portion and a drainage line running roughly north/south through the middle of the Land over both the northern and southern portions, was designated Conservation PDLU; and
- (c) a small area of land on the eastern end of the northern boundary of the northern portion of the Land was designated in the Agricultural Protection PDLU.³

The heavily vegetated parts of the Land were generally included in the Rural or Valued Habitat PDLU and Conservation PDLU by the 1996 Strategic Plan.

BACKGROUND FACTS

- [5] The Land, some 155 ha in area, was purchased by the appellants in 1975 as an investment with potential for future subdivision. Since its acquisition it has been used intermittently for forestry activities.⁴
- [6] The Land is divided by the Sunshine Motorway (Motorway) with the area to the north of the Motorway (Northern Severance) having an area of approximately 92.6 ha and the area to the south (Southern Severance) an area of approximately 62.4 ha.
- [7] The Land is, and was at the Relevant Date, heavily vegetated with a mixture of dryland vegetation communities (ie open Eucalypt forest) and wetland vegetation communities (ie heath⁵). The Land is traversed by a number of gully lines in which wetland flora and fauna communities are predominant. Those gully lines drain the Land from north to south generally away from Lake Weyba.
- [8] Murdering Creek Road forms the eastern boundary of the Land from Murdering Creek Road roundabout to its intersection with Monak Road, which latter Road then proceeds in a westerly direction upon most of the length of the Northern Severance, to its intersection with Lakewood Drive, which Road then proceeds off to the north towards Lake Weyba. The western end of the

³ See Plan Exhibit 1A p.22.

⁴ Statement James Barns [2] and [9].

Northern Severance, for practical purposes, adjoins the Noosa National Park separated only by the unformed road reserve of Monak Road.

- [9] From the north-west corner of the Land south of the Motorway, the western boundary of the Land runs in a roughly southerly direction from the Motorway to intersect with the southern boundary which, in turn, proceeds in an easterly direction back to Murdering Creek Road roundabout, but is stepped, about half the way along its length, thereby creating the two roughly triangular blocks that comprise the Southern Portion.

Land to the North

- [10] Between the Land and Lake Weyba to the north land in private ownership, excluding the Noosa National Park, is used for rural or rural residential purposes.

Land to the East

- [11] At the Relevant Date there were some rural and rural residential allotments to the east of the Land with the rural residential allotments fronting Murdering Creek Road directly opposite the Land. That land continues to be used for rural or rural residential purposes. Further to the east of the Land, a large swath of vegetated land, running from Marcus Beach to Peregrine Beach South, including Lake Weyba, now forms part of the Noosa National Park and separates the Land and its environs from the townships at Peregrine Beach, South Peregrine Beach and Marcus Beach on the Coast.

Land to the West and South

- [12] At the Relevant Date there were vegetated rural allotments to the west of the Land while allotments to the south of the Land then comprised a mixture of vegetated allotments and allotments under agricultural use (originally sugarcane). Nothing has changed in this regard since the Relevant Date.

Land to the South-East – Peregrine Springs and Coolumb Ridges

Peregrine Springs

- [13] By Council resolution of 24 October 1989 under the 1985 Planning Scheme the Council approved the rezoning of some 335 ha of land to the south-east of the Land from Rural A zone to Residential A⁶ (Peregrine Springs). That rezoning was gazetted almost four years later on 20 August 1993.⁷

⁵ See aerial photographs Exhibit 15 (1994), Exhibit 16 (2000), Exhibit 17 (2004), Exhibit 35A (larger version Exhibit 15), Exhibit 42 1996; Exhibit 1B Tab 22 flora experts joint statement.

⁶ Exhibit 1E Tab 85 p. 945; Tab 93.

Coolum Ridges

- [14] Further to the south-east of the Land and to the south of Peregian Springs, an area of 182 ha of land (Coolum Ridges Estate) was rezoned from Rural B to Residential A under the 1985 Planning Scheme pursuant to an order of the then Local Government Court dated 13 March 1991.⁸ As at the Relevant Date no development had commenced on either Peregian Springs or Coolum Ridges.

Extent of Nearby Urban Development

- [15] It is common ground that at the Relevant Date there was no urban development in the locality surrounding the Land. The closest such development was at Peregian Beach South, Peregian Beach, and Marcus Beach, with Coolum Beach, further south, also developing.

The Norfolk Estate Application

- [16] In November 1994, some 18 months before the 10 May 1996 Relevant Date, Norfolk Estates Pty Ltd (Norfolk Estates) contracted to buy the subject Land for \$9m with a deposit of \$10,000 and conditional upon the granting of rezoning and subdivisional approvals to authorise development and use of the Land for residential and commercial purposes.⁹ That application also included adjoining land being Lot 2 on RP 195990 (the ‘Cox land’).
- [17] On 13 January 1995 Norfolk Estates lodged an application for the rezoning of the Land from Rural A to Residential A.¹⁰ On 2 August 1995 Norfolk Estates lodged an appeal on the basis of deemed refusal by the Council but that appeal did not proceed, and was subsequently withdrawn on 13 October 1997.¹¹ More will be said of Peregian Springs, Coolum Ridges and the Norfolk Estates’ application when dealing with the substantive issues in this appeal.

APPROACH TO THE ASSESSMENT OF COMPENSATION

- [18] The section of the PEA dealing with the assessment of compensation is s 3.5(8) which relevantly provides:-

⁷ Exhibit 1E Tab 111.
⁸ Exhibit 1F pp. 1201 and 1241.
⁹ Exhibit 1D Tab 46.
¹⁰ Exhibit 1D p. 541.
¹¹ Exhibit 1D p. 925.

“(8) Subject to subsections, (2A) and (9), the following provisions are to have effect in assessing compensation in respect of a claim made under subsections (1)(a):-

(a) the amount of compensation is, subject to paragraphs (b), (c) and (d) to be an amount equal to the difference of the market value of the interest immediately after the time of the coming into operation of the provision of the Planning Scheme by virtue of the operation whereof the claim for compensation arose and what would have been the market value of that interest if the provision had not come into operation;

(b) ...

(c) ...

(d) ...”

[19] As to the determination of market value two statements of Griffiths CJ and Isaacs J from *Spencer v Commonwealth*¹² are instructive. Griffiths CJ said:-

“...In my judgment the test of the value of land is to be determined, not by enquiring what price a man desiring to sell could actually have obtained for it on a given day ie, whether there was in fact on that day a willing buyer, but by enquiring ‘what would a man desiring to buy the land have had to pay for it on that day to a vendor willing to sell if for a fair price but not desirous to sell?’ It is, no doubt, very difficult to answer such a question, and answer must be to some extent conjectural. The necessary mental process is to put yourself as far as possible in the position of persons conversant with the subject land at the relevant time, and from that point of view to ascertain what, according to the then current opinion of land values, a purchaser would have had to offer for the land to induce such a willing vendor to sell it, or, in other words, to enquire at what point a desirous purchaser and a not unwilling vendor would come together.”

¹² (1907) 5 CLR 418 at 432, 441.

[20] In the same case Isaacs J said:-

“To arrive at the value of the land at the date, we have, as I conceive, to suppose it sold then, not by means of a forced sale, but by voluntary bargaining between the plaintiff and the purchaser, willing to trade, but neither of them so anxious to do so that he would overlook any ordinary business considerations. We must further suppose both to be perfectly acquainted with the land, and cognisant of all circumstances which might affect its value, either advantageously or prejudicially, including its situation, character, quality, proximity to conveniences or its inconveniences, its surrounding features, the then present demand for land, and the likelihood, as then appearing to persons best capable of forming an opinion, of a rise or fall for what reason whatsoever in the amount in which one would be otherwise be willing to fix as the value of the property.”

[21] In a similar vein, in *Kettering v Noosa Shire Council*¹³ Robin QC DCJ said:-

“60. The question to be determined is not whether a particular development application would have been approved or refused. The question is whether, in the minds of a hypothetical vendor and purchaser there was potential for the additional development components identified by *Kettering*¹⁴ Cf. *Fastsigns Pty Ltd v Gladstone City Council* [2005] QPELR 711 at [61], [62], [68], and [71].

61. In that context, the hypothetical purchaser described in *Spencer* is not to be taken to be a dewy-eyed dreamer who will take the most optimistic view of all things, and nor is the purchaser to be regarded as a wilting lily who will proceed with such pessimism that each potential problem will be seen to result in failure: *Yalgan Investments Pty Ltd v Albert Shire Council* [1997] – [1998] 17 QLCR 331 at 341 – 342.

62. A related point is that where the highest and best use is not a use actually in existence, and planning approval has not been obtained at the relevant rate for that highest and best use, the vendor and purchaser must

¹³ [2007] QPELR 605 at 622.

¹⁴ *Kettering v Noosa Shire Council* [2007] QPELR 605.

necessarily engage in some prediction about the prospect of obtaining approvals. To do so they will not engage experts to work up a development application to a high degree of detail, but will undertake those investigations necessary to produce a state of satisfaction that the highest and best use is achievable: see *Yalgan* at 342 and *Pajares v State of Queensland* [2003] QLC 0044 at [74] – [80].

63. Given that the hypothetical prudent purchaser is not a dewy-eyed optimist or a wilting lily, he will accept some risk in realisation of the highest and best use. That risk will be reflected in the value: see *Fastsigns* at [68] – [69] and *Heavy Lex No. 64 Pty Ltd v Chief Executive Department of Transport* [1990] 20 QLCR 29 at 347.”

[22] It seems to me that the hypothetical prudent purchaser¹⁵ (purchaser) looking to purchase the subject Land would be one who, at the very least :-

- (a) was properly advised on all relevant issues by appropriate experts without necessarily getting detailed reports but, as is said above, with sufficient detail to properly inform;
- (b) had some experience in property development;
- (c) was accustomed to assuming risks to achieve rewards;
- (d) was accustomed to risk identification and assessment; and
- (e) would not take what would be seen as unacceptable risks involving too much uncertainty and/or too much financial exposure.

The Issue to be Determined

[23] The decision to be made in this matter involves the theoretical exercise of looking into the mind of a hypothetical purchaser on 10 May 1996, over 13 and a half years ago, in relation to the acquisition of the Land based on its potential for urban and associated development in accordance with the Covey

¹⁵ In referring to the purchaser, the use of the masculine gender includes the feminine

Plan¹⁶. The question for determination is not whether or not any such application would have been successful either by Council approval or appeal to this Court from its refusal. Rather, the question is what the purchaser, properly advised, would have paid for the Land at the Relevant Date as reflecting his assessment of the prospects of obtaining approval for the rezoning for Urban development as described.

- [24] That requires identifying the likely advice the purchaser would have received from experts on relevant issues identified by them as relevant to the application, the purchaser's assessment of that advice, and his decision as to the appropriate purchase price based upon that advice.
- [25] It is important to focus on the requirement that the purchaser be "properly" advised. Implicit in that concept is that any advisor would identify both the positive and negative aspects of any issue under advice. The purchaser is not one who makes decisions through rose coloured glasses. The positives and negatives of that hypothetical advice are reflected in the various opinions of the experts called by both parties. I proceed on the basis that on each of the issues the purchaser would have been advised in accordance with the opinion of each of those experts. To continue the imagery of this somewhat artificial exercise, one may envisage the hypothetical purchaser sitting in a boardroom with each of the experts, being advised by them issue by issue and, at the end of the discussion, making an assessment of the risk profile of each issue. The risk profile is the extent to which, in the mind of the purchaser, a particular issue may be seen to impact upon the prospects of approval of the subject application, both severally and jointly with other issues.
- [26] With all advice on board, discussed by the purchaser and the experts and assessed by the purchaser, the final decision will then be made by the purchaser as to the price he would be prepared to pay for the Land.

THE APPELLANTS' AFTER VALUATION CASE

- [27] It is common ground between the parties that the value of the Land after the coming into operation of the 1996 Strategic Plan is \$750,000.¹⁷

¹⁶ Exhibit 11.

¹⁷ Said variously to represent seven rural allotments of 20 ha each (Council's written submissions [477]; seven large lots in the northern severance and one lot in the southern severance (Appellants' submissions [50]; five rural lots (Henderson report Exhibit 64 p. 2 [4]) and seven lots (Slater report Exhibit 63 Annexure D3 p.2).

THE APPELLANTS' BEFORE VALUATION CASE

[28] The appellants' case is that the highest and best use of the Land immediately before the introduction of the 1996 Strategic Plan was the Urban Development depicted on Layout Plan 0802-CAL-SO1A prepared by Noel Covey & Associates and dated February 2008 (Covey Plan).¹⁸ That plan provided for a range of residential allotments and supporting land uses including¹⁹:-

- (a) 1,034 traditional Residential A Lots ranging in size from 633 m² to 1,655 m² with the majority between 700 m² and 1,000 m²;
- (b) 59 Residential B Lots of between 755 m² and 1,548 m² in size located adjoining the community facilities and primary school and in close proximity to commercial and retail uses. These lots are intended to accommodate higher density residential development;
- (c) nine commercial lots adjoining Murdering Creek Road, one of which is a large lot proposed for a convenience retail centre with the remaining eight smaller lots to accommodate other commercial and retail activities;
- (d) 10 light industrial lots;
- (e) land identified for a primary school, community uses and Churches in close proximity to the commercial and industrial precinct and the higher density Residential B Lots; and
- (f) 27.885 ha of parkland including a large area identified for ovals and active recreation adjoining the primary school and a series of parks and reserves.

[29] The appellants' valuer, Mr Henderson, has assessed the value of the Land in the before case at \$4.740m²⁰ based upon three assumptions:-

- (a) that the prudent purchaser would agree a price for the Land on the basis that an application to rezone the Land to achieve the development in the Covey Plan was achievable²¹;
- (b) that the cost of development depicted in the Covey Plan equated to \$35,740,880²²; and

¹⁸ Schomburgk Report Exhibit 2 p. 44; Exhibit 11

¹⁹ Exhibit 2 [4.1.2] and [4.1.4].

²⁰ Exhibit 64A.

²¹ Exhibit 64 p. 12.

²² Exhibit 64 p. 14.

- (c) that land suitable for residential development throughout the Sunshine Coast at the relevant time was in limited supply.²³

[30] As an alternative to the value of \$4.740m the appellants argue that there are two other possible alternative valuations which involve a more limited development in the event that the Court concluded that it was unlikely that a prudent purchaser would agree a price for the Land on the basis of the development in accordance with the Covey Plan.

[31] Two further options are reflected in those alternative valuations, namely, the development of the Northern Severance and, as a further alternative, the development of that Northern Severance restricted to the dryland sections only and with provisions for parkland and 40m buffers to nearby wetlands.²⁴

[32] With those two alternatives and the original Covey Plan development it is said that the alternative valuations are²⁵:-

Description	Covey Plan	Northern Severance Drylands only with 40m Buffers	Northern Severance only
Before case valuation	\$4,740,000 ²⁶	\$3,909,000 ²⁷ + agreed value of southern portion \$325,000 ²⁸	\$1,714,000 ²⁹
Less after case valuation	\$750,000	\$750,000	\$750,000
Compensation claimed	\$3,990,000	\$3,159,000	\$964,000

²³ Exhibit 64 p. 11.

²⁴ Exhibit 83.

²⁵ Appellants' Submissions [51].

²⁶ Exhibit 64A.

²⁷ Exhibit 84.

²⁸ Transcript 18.35.45 – 55.

²⁹ Exhibit 64 p. 17.

PLANNING CONTROLS

Local Government Act 1936 - 1985

- [33] This legislation governed the rezoning approvals of Peregrine Springs and Coolumb Ridges. Relevant provisions are:-

“32A. Environmental Impact.

- (1) Without derogating from any of its powers under this Act or any other Act, a Local Authority, when considering an application for its approval, consent, permission or authority for the implementation of a proposal under this Act or any other Act, shall take into consideration whether any deleterious effect on the environment would be occasioned by the implementation of the proposal, the subject of the application.
- (2) A Local Authority may, from time to time, adopt by resolution a policy statement prescribing that an application for its approval, consent, permission or authority for the implementation of a proposal of a type specified in such policy statement shall be accompanied by an environmental impact study report and statement of impact and the matters and things which shall be dealt with in such report and statement.
- (3) A copy of any policy statement adopted by a Local Authority under subsection (2) shall be open to inspection and shall be available for purchase at the office of the Local Authority upon payment of such sum as it may fix by resolution, but not exceeding the cost of printing or otherwise reproducing such copy.
- (4) Upon the adoption by a Local Authority of a policy statement under subsection (2), every applicant to the Local Authority for approval, consent, permission or authority in respect of a proposal of a type specified in such policy statement shall accompany this application with an environmental impact study report and statement of impact setting out the matters and things prescribed by such policy statement as being relevant to that type of proposal.

- (5) Where an application is made to a Local Authority for its approval, consent, permission or authority for the implementation of a proposal of a type in respect of which it has not adopted a policy statement under subsection (2) and the Local Authority is of the opinion that the implementation of such proposal may have a deleterious effect on the environment, it may cause the applicant, at his expense, to submit an environmental impact study report and statement of impact in respect of his application and in that event shall specify the matters and things which shall be dealt with in such report and statement.
- (6) In any case where the Local Authority makes application for the approval by the Minister or the Governor in Council of any proposal in accordance with this Act or any other Act the Minister may require submission to him of an environmental impact study report and statement of impact in respect of such proposal.
- (7) For the purpose of complying with a request from the Minister in accordance with subsection (6)-
- (a) the Local Authority may submit to the Minister, a copy of an environmental impact study report and statement of impact already supplied to the Council in respect of the proposal the subject of the application referred to in the said subsection (6); or
 - (b) if no report and statement have been required by and supplied to the Local Authority, the Local Authority may and is hereby authorized to require the person who applied for its approval, consent, permission or authority in the first instance in respect of the proposal to submit without cost to the Local Authority the environmental impact study report and statement of impact as required by the Minister.

- (8) For the purpose of this subsection the term “Local Authority” shall include Brisbane City Council.”

...

Section 33(1) included this definition:-

“Strategic plan”

“A plan that specifies in general terms future preferred dominant land uses for the town planning scheme area for the progressive development of lands within such area during the period for which the scheme³⁰ has force and effect”.

...

Section 33(2D) described the Composition of a Strategic Plan as:-

“Strategic plan”

“A strategic plan referred to in subsection (2A) shall consist of-

- (a) a map or series of maps identifying preferred dominant land uses;
- (b) a statement of objectives of the Local Authority in relation to preferred dominant land uses together with other criteria for determining the type, scale or distribution of other uses required as an integral component to service the preferred dominant land uses;
- (ba) copies of writings for the implementation of that plan;
- (c) copies of writings containing supporting information used or in connexion with for the preparation of that plan”.

³⁰

That section also includes a definition of “Town planning scheme” or “scheme” – scheme for town planning; “Town planning scheme area” – the area included within a town planning scheme.

- [34] Section 33(6A)(d) dealt with applications for rezoning the matters to which regard was required to be had in making a decision to either approve, refuse approval or approve subject to reasonable and relevant conditions.

Those matters were identified in section 33(6A)(e) and included:-

- “(i) whether the proposal, if permitted, or buildings erected in conformity with the proposal, or both the proposal, if permitted, and the buildings so erected would-
 - (A) create a traffic problem or increase an existing traffic problem;
 - (B) detrimentally affect the amenity of the neighbourhood;
 - (C) create a need for increased facilities such as schools, shops or other normal service provisions;
- (ii) the balance of zones in the town planning scheme area as a whole or that section of that area within which the land is situated;
- (iii) whether the inclusion of the land in the zone in which the land is proposed to be included would be in accord with, or conflict with, the strategic plan (if any) or any development control plan;
- (iv) whether the land or any part thereof is so low-lying or so subject to flooding as to be unsuitable for use for all or any of the uses permitted with or without the consent of the Local Authority in the zone from which the land is proposed to be excluded and in the zone in which the land is proposed to be included;
- (v) whether having regard to the permitted uses with or without the consent of the Local Authority of land in the zone in which the land is proposed to be included and the potential of the subdivision if the land is included in the zone in which it is proposed to be included-

- (A) water, gas, electricity, sewerage and other essential services should be made available to the land and to each the separate parcel thereof if the land were subsequently subdivided;
- (B) the provisions of section 32A of this Act should be applied;
- (vi) the situation, suitability and amenity of land in relation to neighbouring localities.”

1985 Planning Scheme

[35] The 1985 Planning Scheme was prepared pursuant to the 1936 LGA and comprised the following³¹:-

- (a) the Schedule to the Town Planning Scheme;
- (b) by-laws; and
- (c) the Strategic Plan, comprising Part A, Part B and the Strategic Plan map.

[36] For the purpose of the Schedule to the 1985 Scheme the subject Land was included in the Rural zone.³² The Statement of Intent for the Rural zone provided³³:-

“The intent of this Zone is to identify and to protect significant areas for a wide range of rural activity. Minimal subdivision requirements are set down in Chapter 36 Subdivision of Land by-laws with the intention of facilitating this range of rural activities and providing the maximum flexibility to preserve viability of established farming.”

[37] The Table of Zones for the Rural zone identified the permitted, permissible and prohibited uses on the land within that zone.³⁴ As of right, uses able to be commenced without consent of the Council included:-

- (a) agriculture;

³¹ Exhibit 1C Tab 37 p. 333.

³² Exhibit 2 [3.1.3]; p. 52 [5].

³³ Exhibit 1C Tab 37 p.341.

³⁴ Exhibit 1C Tab 37 p.349.

- (b) animal husbandry;
- (c) dwelling houses; and
- (d) farm machinery sheds.

[38] Prohibited uses in the Rural zone included commercial premises, educational establishments, local services, and medical or dental centres.

[39] The subdivision of land by-law in Chapter 36 of the Planning Scheme envisaged that land in the Rural zone could be subdivided into 20 ha allotments where the land had less than a 10% slope over 70% of its area.³⁵ Chapter 48 of the Scheme containing the Preservation of Trees by-law³⁶ relevantly provided:-

“(1) The ring-barking, cutting down, topping, lopping, removing, poisoning, injuring or wilful destruction of any tree or trees of fifty (50) cms or more in girth measured at the base of the tree or of any tree or trees as the Council may specify by resolution from time to time is prohibited save and except in the following circumstances that is to say:

...

- (h) where the land on which the tree is growing is included in the Rural A zone under any Town-Planning Scheme.

1985 Strategic Plan

[40] The Strategic Plan comprises³⁷:-

- “(a) a map identifying the Preferred Dominant Land Uses for the Shire of Maroochy;
- (b) a statement of objectives of the Maroochy Shire Council in relation to the Preferred Dominant Land Uses for the management and progressive development of lands within the Shire – Part A; and
- (c) a supporting information document containing the background and supporting data used in the preparation of the Strategic Plan – Part B.”

³⁵ Exhibit 1C Tab 37 p. 385.

³⁶ Exhibit 1C Tab 37 p. 393.

- [41] Part A of the Strategic Plan comprises a number of elements,³⁸ relevantly the Explanatory Outline and Statement of Objectives for the Urban and Rural Areas PDLU. Those Objectives and the PDLU's were determined in relation to the Principal Strategic Plan goal which was expressed as³⁹:-

“To enhance and safeguard, the health, safety, convenience and the economic, social and general welfare of the residents and amenities of the Shire in order to achieve the best possible balance between development, including tourist orientated development, in the Shire and conservation of the natural environment and the cultural heritage whilst, at the same time, promoting confidence through consistent development control of the Shire and the proper management of the Shire resources.”

The Strategic Plan provided that that broad goal would be achieved by the implementation of the Strategic Plan and Statement of Objectives against the background and by way of the Town Planning Scheme.

Local Government (Planning and Environment) Act 1990 – PEA

- [42] The Local Government (Planning and Environment) Act 1990 (PEA) came into force in April 1991. As at the Relevant Date, in relation to the assessment of an application to rezone land, the PEA provided⁴⁰:-

“Assessment of proposed planning scheme amendment

4.4(1) Upon receipt of a statutory declaration referred to in section 4.3(10) and being satisfied that public notice has been given in accordance with section 4.3(4) and (4A), the local government is to consider the relevant application to amend a planning scheme or the conditions attached to an amendment of a planning scheme and any objections duly made in respect of the application.

...

³⁷ Exhibit 1C Tab 37 pp. 360-361.

³⁸ Exhibit 1C Tab 37 p. 360.

³⁹ Exhibit 1C Tab 37 p. 361 left-hand column.

- (3) In considering an application to amend a planning scheme or the conditions attached to an amendment of a planning scheme a local government is to assess each of the following matters to the extent they are relevant to the application –
- (a) whether the proposal, if approved, or buildings erected in conformity with the proposal, or both the proposal, if approved, and the buildings so erected would –
 - (i) create a traffic problem, increase an existing traffic problem or detrimentally affect the efficiency of the existing road network;
 - (ii) detrimentally affect the amenity of the neighbourhood;
 - (iii) create a need for increased facilities;
 - (b) the balance of zones in the planning scheme area as a whole or that part of that area within which the relevant land is situated and the need for the proposed planning scheme amendment;

There is no sub-paragraph (c).

- (d) whether the land or any part thereof is so low-lying or so subject to inundation as to be unsuitable for use for all or any of the uses permitted or permissible in the zone in which the land is proposed to be included;
- (e) whether, having regard to the permitted or permissible uses of the land and the potential for subdivision in the zone in which it is proposed to be included water, gas, electricity, sewerage and other essential services should be made available to the land and to each separate allotment thereof if the land were subsequently subdivided;
- (f) the impact of the proposal on the environment (whether or not an environmental impact statement has been prepared);

⁴⁰ Part 1A, s 4.4(3A) and 5(A) were later introduced by Act No. 37 of 1992 which commenced on 23 July 1992.

- (g) the situation, suitability and amenity of the land in relation to neighbouring localities;

There is no sub-paragraph (h).

- (i) the advice given by it, in respect of any consideration in principle concerning the relevant land pursuant to section 4.2;
- (j) whether any plan of development attaching to the application pursuant to a requirement of the planning scheme should be altered;
- (k) where the land is land prescribed pursuant to section 8.3A, the site contamination report in respect of the land;
- (l) such other matters, having regard to the nature of the application, as are relevant.

- (3A) The local government must have regard to relevant State planning policies in making its decision on the application.

...

- (5) In deciding an application made to it pursuant to section 4.3 a local government is to –

- (a) approve the application; or
- (b) approve the application, subject to conditions; or
- (c) refuse to approve the application.

- (5A) The local government must refuse to approve the application if –

- (a) the application conflicts with any relevant strategic plan or development control plan; and
- (b) there are not sufficient planning grounds to justify approving the application despite the conflict.

- (7) Upon the local government making a decision on an application in accordance with subsection (5) the chief executive officer is, within 10 days of the date of the decision, to notify the applicant and every principal objector of the decision.
- (8) The applicant or any person who has duly objected may appeal to the Court pursuant to section 7.1 against the decision of the local government.

...

Environmental Impact

8.2(1) Without derogating from any of its powers under this Act or any other Act, a local government, when considering an application for its approval, consent, permission or authority for the implementation of a proposal under this Act or any other Act, is to take into consideration whether any deleterious effect on the environment would be occasioned by the implementation of the proposal, the subject of the application.

- (2) If a person intends to apply to a local government for –
 - (a) an approval, consent, permission or authority in relation to a planning scheme for a designated development; or
 - (b) an approval, consent, permission or authority in relation to an interim development control provision for a designated development;

the person must, in accordance with the regulations, request the chief executive of the department to tell the person if an environmental impact statement is necessary and, if it is necessary, its terms of reference.

- (3) The chief executive must, as soon as possible after receiving the request –

- (a) give a written acknowledgment to the applicant of its receipt; and
 - (b) decide if an environmental impact statement is necessary; and
 - (c) if the chief executive decides that an environmental impact statement is necessary – decide its terms of reference.
- (4) The chief executive may decide that an environmental impact statement in relation to a designated development is not necessary if –
- (a) a relevant study, that is not outdated, was prepared and, in the chief executive’s opinion, there are no significant environmental issues that were not covered in the relevant study; or
 - (b) the chief executive is satisfied that a referral agency has made a study that included environmental issues for the area the subject of the development and it is not outdated; or
 - (c) in the chief executive’s opinion, the consequence of the approval, consent, permission or authority in relation to the designated development is minor.
- (5) The chief executive must consult with all the referral agencies in relation to –
- (a) whether an environmental impact statement is necessary; and
 - (b) if a statement is necessary – its terms of reference.
- ...
- (11D) When it decides an application to which subsection (2) applies, the local government must have regard to the Environmental Impact Statement

submitted with the application as well as any other matters relevant to the application.

...

(12) Where an application is made to a local government for a proposal which is not a designated development and the local government is of the opinion that the implementation of the proposal may have deleterious effect on the environment, it is to –

- (a) require the applicant to submit an environmental impact statement in respect of the proposal, the subject of the application; and
- (b) specify the matters and things which are to be dealt with in that statement.

(13) In any case where the local government makes application for the approval by the Governor in Council of any proposal not being a designated development in accordance with this Act or any other Act, the chief executive may require the submission of an environmental impact statement of the proposal.

...

(15) In this section –

“designated development” means –

- (a) a proposal prescribed by regulation for the purposes of this section;
- or

...

“referral agency”, in relation to an environmental impact statement for a designated development, includes –

- (a) the chief executive of the department that is responsible for the administration of Acts for the protection of the environment; and
- (b) any local government in whose area the development is proposed; and
- (c) the chief executive of any other department or statutory body that the chief executive of the department considers must be consulted.

...”

Local Government (Planning and Environment) Regulation 1991

[43] Section 16 of the *Local Government (Planning and Environment) Regulation 1991* relevantly provided:-

“Environmental impact – designated developments

- 16. The following types of proposals (other than proposals which the Local Authority regards as of a minor or ancillary nature) are prescribed for the purposes of Section 8.2 of the Act:-

...

- (b) a proposal relating to a development (other than a dwelling-house, out-building or farm building) on land located in or having a common boundary with, an area referred to in Schedule 2.”

For the purpose of s 16(b) of the *Local Government (Planning and Environment) Regulation 1991*, Schedule 2 prescribed as the tenth of the areas to which s 16(b) applied:-

- “10. Wetland, whether fresh, brackish or marine, including coral reefs, mangrove areas, mudflats, sand flats, sandy beaches, seagrass beds, and tidal marshes.”

State Planning Policy 1 of 1992

- [44] State Planning Policy 1 of 1992 was introduced in December 1992 subsequent to the introduction of s 4.4(3A) of the PEA on 23 July 1992 which required a local government to give consideration to any relevant state planning policies in assessing an application to rezone land. The policy (SPP1/92) dealt with the protection of 'Good Quality Agricultural Land' (GQAL) which will be discussed in more detail later.

Urban Areas PDLU

- [45] The relevant Implementation Objectives for the Urban Areas designation are⁴¹:-

“Urban Areas

3.-

(1) Objective-

To direct future urban growth so as to secure the orderly and proper development of urban centres in a manner consistent with the existing urban structure of the Shire.

- a) The urban areas shown as preferred dominant land use on the Strategic Plan may be progressively converted to urban use by way of rezonings. Contiguous areas may also be considered where the Council is satisfied that orderly and economic growth will occur. These additional urban areas have generally been zoned rural on the scheme maps so that before urban development can be achieved, rezonings will be necessary and financial contributions may be obtained so that the new areas can be efficiently serviced.
- b) The rezonings necessary to achieve urban development will be determined on their merits, and where they exist, by a series of

⁴¹ Exhibit 1C Tab 37 p.362.

development control plans indicating the preferred zone for the particular property or locality.

- c) Rezoning for the urban purposes will only be permitted within the areas mentioned in (a) above, with the exception of certain tourist type developments and special facility uses.
- d) The inclusion of areas within the preferred dominant land use as urban areas does not mean that all such properties may be rezoned and developed for urban purposes. Many areas, because of their physical characteristics, including aesthetic aspects, steeply sloping terrain, areas with instabilities because of slope and areas subject to flooding, will be retained in their natural state. This will also apply to areas abutting major roads and watercourses required as buffer space.
- e) A planning report will be required as part of the procedure to enable the Council to consider rezoning for urban purposes.
- f) The Council will encourage future administration centres, including Government centres, intended to serve the region, to be established in Nambour.

(2) Objective-

To develop upon and consolidate urban areas

- a) The existing urban areas have generally been indicated by some form of positive urban zoning on the town planning scheme maps so that, rezonings will not be necessary in order to achieve consolidation of these existing areas. Development will, however, have to accord with any development control plan requirements to ensure the proper and orderly growth of these areas.

- b) The consolidation of existing urban areas will be a matter to be considered by the Council in determining rezoning for new urban growth.

(3) Objective-

To ensure that the future expansion of urban areas and development of new urban centres occurs in locations capable of being adequately serviced with public utilities having at the same time regard to the orderly extension of such public utility services.

- a) The principal areas indicated as urban areas on the Strategic Plan have been selected as areas which can be serviced with public utilities provided new urban development takes place on a progressive basis, so that all public utility services and access to the new areas can be economically provided. This aspect is an important one which will be considered by the Council in determining rezoning applications, not only in accordance with development control plans but on their merits prior to the introduction of such development control plans.
- b) Certain areas indicated as urban areas on the Strategic Plan relate to the small towns including but not limited to, Woombye, Palmwoods, Mapleton, Montville, Eumundi and Eudlo where the Council sewerage schemes do not exist in determining rezoning applications within such urban areas the Council will, among other matters, require the provision of sewerage reticulation or effluent disposal satisfactory to the Council.

(4) Objective-

To ensure that new urban growth does not conflict with environmentally sensitive and/or conservation areas and does not include land which has flooding, slope instability or other engineering problems which cannot be satisfactorily overcome.

a) In considering rezoning applications within the new urban areas and development applications in accordance with the indicated preferred dominant land use on the Strategic Plan, the Council will take into consideration all the relevant planning aspects including:-

- (i) The effect of the development which will follow the rezoning or the particular development proposal upon the environment. In order to [do] this the Council will require the applicant to supply a planning report giving an assessment of the proposal;
- (ii) In considering rezonings and development proposals within the new urban areas and within existing urban areas, the Council will have regard to flood areas, engineering and access constraints, together with areas of slope instability, in accordance with reports and maps contained in Part B.”

Rural Areas PDLU

[46] The explanatory outline for this designation states⁴²:-

“These areas are shown on the Strategic Plan in light brown. They include valuable sugarcane land and valuable horticultural land which are to be protected as such. These areas are identified on Queensland Department of Primary Industries maps contained in Part B.

The rural areas also cover the balance areas of the Shire not required for other preferred dominant land uses and may include rural residential developments.”

[47] Two objectives relevant to the Rural Areas PDLU Designation are⁴³:-

“RURAL AREAS

7.-

⁴² Exhibit 1C Tab 37 p.361 Right-hand column.

(1) Objective-

To protect the Shire's prime agricultural land including valuable cane land from unnecessary and undesirable intrusions by other land use activities.

- a) The rural areas shown as a preferred dominant land use on the Strategic Plan have been supported by Rural A and Rural B zoning on the town planning scheme maps. These rural zones will be maintained, with rezonings for other than rural purposes limited so that they respect this objective.
- b) Areas of valuable cane land have been indicated on plans supplied by the Queensland Department of Primary Industries included in Part B. These valuable cane areas will be protected generally by Rural A zoning, with some Rural B zoning. Where valuable cane land is included in a Rural A zoning the Council will not permit rezonings to Rural B for horticultural purposes where this involves unnecessary loss of valuable cane land. Further, the Council will not consent to the establishment of extractive industries in areas of valuable cane land.
- c) Valuable horticultural land has been indicated on a plan supplied by the Queensland Department of Primary Industries as included in Part B. These areas will be protected by both Rural B and some Rural A zoning.
- d) The rural areas will be further protected by the structure of the Rural A and Rural B zones whereby undesirable uses are prohibited.

(2) Objective-

To provide sufficient land in suitable attractive rural locations within the Shire to meet the demands for the rural residential living, whilst ensuring that their location is not prejudicial to existing and traditional viable rural land use activities.

- a) Provision of an adequate supply of land to satisfy this demand shall be made by way of rezonings generally within the areas shown as rural preferred dominant land use. Specific identification of preferred rural residential areas have not been made.
- b) The rezonings necessary to achieve rural residential development will be determined on their merits and upon reference to the criteria specified in the relevant section of the Local Government Act together with any other matters which the Council considers are relevant, including but not limited to the following:-
 - (i) Whether the proposal will be compatible with the predominant land use of the locality or prejudice the viability of traditional rural land use, urban land use or extractive industry use or potential;
 - (ii) Whether the proposal will constrain the orderly development of urban areas;
 - (iii) Its effect upon environmental matters including conservation of the established amenity, existing landscape, escarpments, tree lines, view lines, bushland, open space, tourist value and scenic quality in general;
 - (iv) Whether the proposal will conform to any relevant Policy or Statement adopted by the Council.
 - (v) The proximity of the land to existing urban centres.
- c) The keeping of animals of a domestic kind within the Rural Residential Zone will be controlled under the provisions of Chapter 31 of the Council's by-laws and not under the provisions of the town planning scheme. The keeping of animals on a commercial basis will be controlled in accordance with Division III – Table of Zones of Part II – Zoning of the Schedule to the scheme.”

Strategic Plan Part B – Supporting Information

[48] The following extracts from Part B⁴⁴ are relevant:-

Page 14:

“Urban Areas

The urban areas shown as a preferred dominant land use on the Strategic Plan were determined by a long process involving an assessment of the following factors:-

- (1) Existing and long term capacity to provide all public utility services necessary to serve new urban development. This involved use of Master Plan information supplied by the Shire Engineer in relation to water supply, sewerage, drainage and transportation.
- (2) The philosophy of securing orderly development throughout the Shire including the expansion and consolidation of existing principal centres and towns throughout the Shire.
- (3) The physical characteristics, suitability of the bulk of the terrain included in the urban areas as being suitable for such development.
- (4) Existing and future capacity to service the areas by road.
- (5) The extent and location of areas zoned for urban development as contained within the old Town Planning Scheme.
- (6) ...”

Page 17:

⁴⁴ Exhibit 62

- “(b) The main characteristics of nature and resource conservation areas and reserves are summarised in Table V1-3 (Tagged p. 332AK). Conventional standards for the provision of these reserves (eg area/population) should not be used, instead, the criteria of viable ecosystems and representative habitats and species should be expertly determined and applied. Resource conservation areas and reserves should again be expertly identified and evaluated and used for the protection of resources such as sugar cane and horticultural production lands, forestry and minerals.”

Nature and Resource Conservation

Data has been collected relating to all the elements relating to conservation, comprising national parks, environmental parks and public and private open space, and these have been incorporated directly and fully into the Strategic Plan as a preferred dominant land use. ...”

Page 27:

“Constraints

- 1) In Part A reference has been made to the various constraints which have, to a large extent, determined the preferred dominant land uses indicated on the Strategic Plan. As stated in the Introduction, the selection of the preferred dominant land uses was not simply a theoretical town planning exercise, but also involved an assessment of the relevant values of the various resources. ...”

Page 31:

“...The Strategic Plan indicating the preferred dominant land uses has consciously been constructed so that its application will be indicative rather than definitive. Its Shire wide implications will be to provide a guide to the future as envisaged by the Council rather than be inflexible and precise about what is after all an indefinite matter.”

1996 Strategic Plan – Effective from 10 May 1996

- [49] This Plan consisted of various elements, namely, the vision, key issues, the strategies, the preferred dominant land uses, objectives and implementation criteria and the Strategic Plan map.

Vision

- [50] The following statement is to be found in the vision dealing with environmental and aesthetic values⁴⁵:-

“The environmental and aesthetic vision for the Shire is one which values, protects and promotes significant habitats and the processes for ecological sustainability, protecting the current high level of bio-diversity which exists in the Shire. Ensuring a high standard of environmental and aesthetic amenity is important, not only to the local residents, but also underpins the tourism industry within the State.

Given the continuing high rates of population growth and continuing expansion of tourism within the Shire, it is essential that the natural resources are identified, assessed and captured in a manner appropriate to their ecological and aesthetic value, ensuring their attention in perpetuity.

Certainly the traditional approach to conservation, consisting of the development of a system of a National Parks and other Government controlled land, is clearly unable to protect all significant habitats and ecological processes. There is a need for the protection for a much wider pool of resources on land in private ownership, as well as publicly owned land, and there is a need to develop a range of land use solutions which satisfactorily ensures protection for the environment and aesthetic resources of the Shire.

Within this environmental framework will be the creation of a townscape exhibiting a strong sense of place and a high standard of urban design, appropriate to the lifestyle and character of the Sunshine Coast and adapting to the changing needs of the community.”

PDLU's Objectives and Implementation Provisions

- [51] As stated above, the Land under the 1996 Strategic Plan is designated in three PDLU's, namely, Agricultural Protection, Conservation and Rural or Valued Habitat. The vast majority of the Land was included in the last of these.

Agricultural Protection

- [52] There are two small areas in the north-eastern and south-western corners of the Land within this designation.⁴⁶ In relation to this designation the 1996 Strategic Plan provides⁴⁷:-

“The Agricultural Protection designation identifies good quality agricultural land apart from land determined to be required for other purposes and land which contains vegetation worthy of preservation and significant vegetation as determined by the Turnbull and Olsen Report (1992). The principal intention of this designation is to retain the land for agricultural purposes and consequently protect the future viability of agriculture in the Shire. To this end, intensive agricultural activities will be allowed within these designated areas, while uses which contradict this intention or threaten this agricultural capability will not be permitted.

The boundary to the Agricultural Protection is based on defining good quality agricultural land and consequently the location may vary to that shown in line with more detailed assessments undertaken in accordance with the State Government Planning Policy Guidelines for the Identification of Good Quality Agricultural Land.”

Relevant Objectives in 1996 Plan re Agricultural Protection PDLU

- [53] Objectives 6.1 and 6.2 provide:-

“IMPLEMENTATION

⁴⁵ Exhibit 1C Tab 39 p. 406.

⁴⁶ Exhibit 1C Tab 39 p. 473.

⁴⁷ Exhibit 1C Tab 39 p. 425.

1. On land in designated Agricultural Protection areas, Council will not approve applications for any purposes other than agriculture and rural activities which do not compromise the potential of the land to be used for agriculture or purposes necessarily ancillary to these uses. It will not approve subdivision applications which may compromise the efficient operation of these areas for primary production.
2. On land within the Rural or Valued Habitat designation, Council will not approve applications for development other than agriculture, other farming or ancillary uses unless:
 - (a) it can be demonstrated that the proposed use is appropriate to the site and would not be likely to undermine the existing use of any adjoining land for agricultural purposes. Council will consider the agricultural significance of the land and to that end, may require the applicant to carry out detailed land resource studies. The above would not apply to land containing valued habitat where the significant vegetation is essentially being retained.
 - (b) the land is within the Permissible area for Rural Residential development and the development proposed is Rural Residential and is justified under Objective 3.8.”

The Natural Resources Strategy – 1996 Strategic Plan

- [54] The provisions dealing with the Rural or Valued Habitat PDLU designation are to be found in s 10.0 Natural Resources which term is defined as referring to plants, animals and micro-organisms and their relationship with the non-living organisms on which they depend.⁴⁸ The relevant key issues identified are these:-

“The key issue forming the basis for the Natural Resources strategy include:

- The association of significant natural resources with Maroochy Shire including:

...

- the vegetated and rural character of much of the Shire.

⁴⁸

Exhibit 1C Tab 39 p. 439.

The key issue forming the basis for the Natural Resources strategy include:

- The association of significant natural resources with Maroochy Shire including:
 - ...
 - the vegetated and rural character of much of the Shire.
- ...
- ...
- ...
-
- The essential need to retain the considerable and significant natural resources of the Shire including the protection of all aquatic and marine environment, terrestrial habitats, the diverse geological features and the natural character of the Shire so that:
 - the natural aesthetics of the Shire can be maintained;
 - the quality of life of residents is protected;
 - a sustainable tourist industry is assured;
 - the need to strive for a high environmental standard for the reasons given above is maintained;
 - as well as a desire for longer term environmental sustainability is achieved.
- ...”

[55] The Natural Resources Strategy relates to the conservation and Rural or Valued Habitat PDLU's and the strategy is in these terms⁴⁹ :-

⁴⁹ Exhibit 1C Tab 39 p. 439 right-hand column.

- “1. Central to the Strategy is the location, objectives and implementation criteria of the preferred dominant land uses of Conservation and Rural or Valued Habitat. These designations are intended to:-
- contribute significantly to the protection of rare and threatened fauna and flora;
 - maintain significant and representative fauna and flora;
 - preserve significant geological formations and prominent escarpments;
 - discourage additional soil erosion;
 - provide a measure of protection to the aquatic and marine ecosystems;
 - repair riparian systems and other significant environments.
2. The Conservation preferred dominant land use includes those areas designated as possessing the most highly valued areas of vegetation as well as land in public ownership intended to be preserved in a natural or semi natural state, such as National and Conservation Parks. This designation also includes vegetated and degraded creek corridors whose protection and rehabilitation is paramount in establishing sustainable ecosystems.
3. The Rural or Valued Habitat Designation includes extant vegetation units, often in private ownership, which form linkages between the principal conservation areas and major vegetation corridors within and outside the Shire. It also incorporates other land where vegetation protection or rehabilitation is considered appropriate because of slope, potential for landslip or for its aesthetic values.
4. While the emphasis for this Strategic Plan has centred around the identification and protection of vegetation, it has been assumed that the development of an appropriate Strategy for the conservation of terrestrial flora will also result in the conservation of the fauna populations.

5. A strong environmental framework requires not only the protection of resources through limiting land uses in designated locations, but requires also the establishment and implementation of an appropriate array of development guidelines and standards for all other forms of development. Such guidelines and standards, imposed as conditions on development, will:
 - adopt a best practice approach;
 - reinforce the remaining environmental objectives;
 - seek a high standard of environmental amenity.
6. Aquatic and marine ecosystems are to be maintained through the retention and rehabilitation of creek corridors, through land use measures intended to reduce soil erosion, and where required, through creek bank stabilisation and requiring sedimentation and retardation controls in new development.
7. Under the Natural Resources Strategy, as proposed, the maintenance of land in its natural state is considered a legitimate land use in itself. This means that in some parts of the Shire development opportunities are limited to those which ensure the natural resource values for that site or adjoining areas are protected in perpetuity.
8. The conservation and Rural or Valued Habitat designations also intend to protect wetland areas which are valuable natural physical and biological treatment systems of water quality and quantity.”

Conservation Rural or Valued Habitat PDLU's – Objectives and Implementation Provisions

[56] The 1996 Strategic Plan:-

“PREFERRED DOMINANT LAND USES

Conservation

Those areas that are intended or preferred for Conservation are shown as dark green on the Strategic Plan Map.

The Natural Resources objectives are best achieved by the exclusion of most forms of development from this designation.

Rural or Valued Habitat

The emphasis of this designation is generally on the retention of the land in its present situation although changes in use and subdivision in accordance with entitlement under the Planning Scheme are envisaged. This designation includes land being used for agricultural purposes which may not have been identified as good quality agricultural land, land with limited rural capability, land identified as good quality agricultural land which contains vegetation worthy of preservation and significant vegetation and land which, at this time, has a preferred rural function. While it is intended that rural uses and the retention of valued habitat should be the dominant activities occurring in the Rural or Valued Habitat areas, the designation provides for a range of other uses suited to establishing in rural areas. Valued Habitats are defined as vegetation worthy of preservation and significant vegetation as identified by the Turnbull & Olsen Report (1992).

These uses may include but are not limited to rural industries, tourist and accommodation facilities appropriate to a rural area and animal husbandry and rural residential in the Permissible Area for Rural Residential.

In Rural or Valued Habitat areas it will be a requirement that all uses protect the natural resources on the site and that all development applications incorporate appropriate land management practices.”

Objectives and Implementation Criteria for Conservation and Rural or Valued Habitat PDLU Designations

[57] These provide:-

“OBJECTIVES & IMPLEMENTATION

10.1 TO PROTECT THE CONSIDERABLE ENVIRONMENTAL RESOURCES OF THE SHIRE

Considerable emphasis has been given to the significance of the natural resources of the Shire from an ecological and aesthetic point of view. Their protection is essential in maintaining the current high level of biodiversity and environmental amenity shared by residents and visitors although regard must be had to adequate fire management measures being implemented in conjunction with the resource protection. To this end, it is necessary to implement effective mechanisms for the assessment of environmental impact associated with development applications.

IMPLEMENTATION

1. Council will prepare a policy which determines the circumstances in which an environmental appraisal will be required to be lodged with an application and the scope of such appraisal. Council will also prepare a local planning policy which specifies proposals which shall form designated developments under the provisions of the Planning and Environment Act.
2. In the absence of such policy, an environmental appraisal may be required as part of a development or subdivision application when:
 - the subject land is included in the designation of Conservation or Rural or Valued Habitat;
 - the subject land is located within a water supply catchment;
 - filling or the removal of fill is required to occur on the subject land;
 - the proposal is likely to have detrimental effects on any natural resource or ecosystem.
3. Any environmental appraisal required by Council must be prepared by appropriately qualified and experienced professionals. If after assessing any environmental appraisal, Council is not satisfied that a sensitive

environment or habitat can be adequately sustained, it may refuse the application.

4. Whilst the Local Government (Planning and Environment Act defines instances where an Environmental Impact Statement is required, an EIS may also be required by Council where a development or subdivision proposal is for:
 - an industry considered to be hazardous and noxious;
 - land which contains Significant Vegetation or Most Significant Vegetation under the Turnbull & Olsen 1992 Study or adjoins land designated as Conservation Area;
 - any extractive industry;
 - a proposal which directly impacts on the habitat of any rare and threatened species.
 5. In the assessment of development proposals which incorporate the retention of vegetation or adjoin areas which are vegetated, Council will have regard to the adequacy of any proposed fire management measure to protect the development or may require the preparation of such measures if none are proposed.
- 10.2 TO PROTECT THOSE HABITATS OF TERRESTRIAL AND AQUATIC FAUNA AND FLORA WHICH ARE CONSIDERED SIGNIFICANT FROM AN ECOLOGICAL POINT OF VIEW, IN A MANNER WHICH ENSURES ADEQUATE LONG TERM PROTECTION

An inventory of the vegetation of the Shire has been established and an assessment made of the values of individual species and vegetation units in the Shire. This inventory and assessment was based on work undertaken by Turnbull and Olsen (1992). This assessment was conducted on the basis of species composition,

abundance and habitat significance and identified a number of rare and threatened flora and fauna located within the Shire.

The nucleus for a Natural Resource strategy is the conservation of:

- sites known to contain rare and threatened species of fauna and flora and their habitats;
- valued areas of habitat;
- areas providing botanical representation.

The protection of these resources is critical in maintaining the current level of biodiversity and in preserving a high level of environmental amenity within the Shire.

IMPLEMENTATION

1. On land designated Conservation, Urban and Rural or Valued Habitat, Council will not permit development which is likely to:

- require the removal or destruction of rare and threatened flora;
- otherwise impact on the habitat so as to threaten the environment of the rare and threatened species.

On land not so designated, Council is unlikely to approve an application which may detrimentally impact on the habitat of any rare and threatened species of fauna and flora unless it can be demonstrated that adequate and appropriate measures are to be provided to ensure protection.

3. Council will prepare a Bylaw relating to habitat protection which makes specific reference to:

- land contained within the Preferred Dominant Land Use of Conservation, Urban and Rural or Valued Habitat;

- ecologically significant and riparian habitats;
- habitats on steep and unstable land;
- habitat within water supply catchments;
- the need for rehabilitation;
- penalties for infringements of the Bylaw.

10.3 TO PROTECT OR PROVIDE FAUNA AND FLORA CORRIDORS LINKING TO OR BETWEEN HABITATS OF CONSERVATION SIGNIFICANCE

The protection and rehabilitation of vegetation corridors utilising waterways, ridgelines and remnant vegetation to link to or between habitats of conservation significance is essential for:

- retaining significant stocks of endemic fauna and flora;
- allowing species to move between areas of remnant vegetation, thereby enabling gene flow to occur within fauna and flora populations.

It must be recognised that this objective is unlikely to be comprehensively realised in the shorter term. A number of proposed corridors, for example, along some creek and river systems are mostly devoid of any endemic vegetation. On many farms, all available land down to the top of the stream bank has been utilised for agricultural purposes. In such locations (and given the protection afforded farm land), it is unlikely that in these locations there will be many opportunities for the re-establishment of the proposed corridors. However, what is important is the ability to begin the process of re-establishing the links to or between habitats of conservation significance.

The ROSS is required to specifically recognise that the river systems of the Maroochy and Mooloolah Rivers are regional corridors and are to be given priority to ensure their protection. Consequently the conservation values of these corridors require recognition in the Strategic Plan.

IMPLEMENTATION

1. (a) The principal mechanism for securing a fauna and flora corridor is the riparian designation. The right to farm, where that use is established will take overriding precedence over such corridors which are identified by a dotted line and shown hatched on the map.
- (b) The designation will not affect any existing farming operations or existing urban development or existing industrial, nor will it prevent existing or future improvements allied or incidental to established activities, which do not require consent or rezoning where an urban or industrial use is already established in the corridors, only the usual constraints apply. Where it is not practical to establish a corridor regard will still be had, in the consideration of application, to the intent of Council. Where dedication of riparian corridor exceeds 10% parks contribution a bonus system (to be developed) will apply.
2. A number of fauna and flora corridors have been identified on the Strategic Plan map. These corridors are of about 50 m width on each side of appropriate waterways with an overall width of 100 m.
3. The 50 m width is measured from the top of the present streambank and in a perpendicular direction from all points along the streambank.
4. Some greater distance may be required to be preserved having regard to:
 - the botanical and ecological values of the land.”

Urban Areas and Future Urban PDLU's

[58] These are described as⁵⁰:-

⁵⁰

Exhibit 1C Tab 39 p. 408.

“PREFERRED DOMINANT LAND USES

Urban

The Urban designation identifies areas suitable for residential development of varying densities, but allows for retail, commercial, community service and service and general industrial activities required to serve the day-to-day needs of local communities.

The Urban designation may include land which is considered to have significant ecological value and sensitive development options would be appropriate to adequately incorporate this land into the urban fabric with minimal impact.

Future Urban

The designation of Future Urban indicates those areas on the periphery of the Urban designation which are required for long term urban expansion. It is unlikely that land designated Future Urban will be developed within the 10 year timeframe of the Strategic Plan. However, subject to need and sequencing being addressed, Council may support development of this land at the appropriate time. The development of the land, in the mean time, will be controlled by the zoning and provisions of the Planning Scheme.”

- [59] The Implementation Provisions concerning Applications for Development of Land in the Urban Designated Areas contains the following⁵¹:-

“6. If, after assessing any environmental impact statements or environmental assessments, Council is not satisfied that a sensitive environment can adequately sustain a proposed development, it may refuse the application.”

⁵¹ Exhibit 1C Tab 39 p. 410.

DOES PEA SECTION 3.5.4(D) EXCLUDE THE APPELLANTS' ENTITLEMENT TO COMPENSATION – THE SPARKE POINT?

[60] Having set out the relevant legislative provisions, I turn now to a threshold issue raised by the Council. It argued that the appellants were disentitled to any compensation by virtue of the operation of s 3.5.4(d) of the PEA.⁵² That is to be distinguished from the Council's principal contention⁵³ which denies the appellants have any entitlement to compensation on the basis that the provisions of both the 1985 and 1996 Strategic Plans, properly construed, were of the same effect in restricting the appellants' ability to rezone the subject land for urban purposes. Hence, no injurious affection has been suffered

[61] The relevant provisions of the PEA for the present argument are:-

“Compensation

3.5(1) Where a person:-

- (a) has an interest in premises within a Planning Scheme area and the interest is injuriously affected:-
 - (i) by the coming into force of any provision contained in a Planning Scheme; or
 - (ii) by any prohibition or restriction imposed by the Planning Scheme; or
- (b) ...

The person is, subject to compliance with this section, entitled to obtain from the Local Government compensation in respect of the injurious affection or expenditure and may claim that compensation in accordance with this section.

⁵² Council's Statement of Facts, Matters and Contentions Exhibit 1A p. 78.

⁵³ Exhibit 1A p. 79; Council Submissions and Reply [22].

(2) ...

(2A) ...

(3) ...

(4) Compensation is not payable:-

(a) ...

(b) ...

(c) ...

(d) Subject to subsection (2), where an interest in premises is affected by a Planning Scheme which by its operation prohibits or restricts the use of land or the erection or use of a building or other structure thereon for a particular purpose, unless the applicant establishes that the applicant had a legal right immediately before the provision in question of the Planning Scheme came into force to use the land or erect or use a building or other structure thereon for the particular purpose which is so prohibited or restricted;

(e) ...

(f) ...

(g) ...

(5) For the purpose of subsection (4)(d), it is not to be taken that an applicant did not have the legal right referred to in that subsection by reason only that the applicant's right depended upon an exercise of discretion by the Local Government in the applicant's favour if the applicant shows that it is reasonable to expect that the exercise of discretion would have been in the

applicant's favour had it been sought immediately before the relevant provision of the Planning Scheme came into force;

- (6) The onus of proving that compensation is not payable in any case by virtue of subsection (4) is upon the Local Government."

Section 3.5(2) referred to in s 3.5.4(d) above is not relevant.

- [62] The Council argued the appellants' claim for compensation is excluded under s 3.5(4)(d) above because the 1996 Strategic Plan provisions relevantly "impacted upon" the ability of the appellants to develop the Land for urban purposes with supporting uses.⁵⁴ That argument involves the proposition that the "impact" referred to prohibits or restricts the use of the land as contemplated by s 3.5(4)(d).⁵⁵
- [63] Council relies on *Sparke v Noosa Shire Council*⁵⁶ in support of its argument. In that case it was common ground that the appellants' interest in land had been injuriously affected within s 3.5(1) above by the introduction of a new Strategic Plan for the Noosa Shire. Prior to the introduction of the Plan the appellants would have expected to be able to rezone the property so that a retirement village could be built on it, but the introduction of the Plan resulted in that prospect disappearing.
- [64] The appellants argued that they had a legal right within the extended concept of that term in s 3.5(5) above on the basis that that right depended upon an exercise of discretion by the Local Government in favour of the appellants which it was reasonable to expect it would be so exercised. The Council, in that case, argued that the procedure to bring about the necessary rezoning involved not only the exercise of the discretion by the Local Government but also by the Governor in Council. The Court upheld that argument finding that the appellants did not have the necessary legal right.
- [65] The Council here relies upon the same successful argument advanced by the Council in *Sparke*⁵⁷. But, of course, reliance upon s 3.5(5) is only available if the Council can show that the 1996 Planning Scheme, by its operation, prohibits or restricts the use of the subject Land for a particular purpose. That is necessary to trigger the operation of s 3.5(4)(d).⁵⁸ That satisfied, the Council contends that s 3.5(5) cannot be satisfied by the appellants for the same reasons as obtained in *Sparke*⁵⁹, namely, the necessity for a second discretion to be exercised by the Governor in Council.

⁵⁴ Council Submissions Part 4; Submissions and Reply [21] – [49].

⁵⁵ Council Submissions and Reply [41] and [47]; Council's response to Appellants' Reply [6].

⁵⁶ [1999] 1 Qd. R. 344.

⁵⁷ *Sparke v Noosa Shire Council* [1999] 1 Qd. R. 344.

⁵⁸ *Kettering v Noosa Shire Council* [2004] 134 LGERA 99 at [22].

⁵⁹ *Sparke v Noosa Shire Council* [1999] 1 Qd. R. 344.

[66] In *Kettering v Noosa Shire Council*⁶⁰ the appellant owned a sizeable area of land on Noosa Hill which was zoned Rural Pursuits which afforded him, as a right, an entitlement to subdivision into lots of no less than 40 ha. On 21 September 1991 the Noosa Hill Development Control Plan (DCP) was gazetted. It divided an area of land including the appellants' land into precincts and most of the appellants' land was within sub-precinct D of Precinct 2. The application of the principles and intentions stated in the DCP to the appellants' land had the effect of significantly reducing its potential for more intensive use. The appellants sought compensation on the following basis:-

“But for the DCP, necessary approvals in order to carry out residential development of the land (including the land now in sub-precinct D) could have been obtained in a number of ways including, relevantly for compensation purposes:-

- (a) ...
- (b) Rezoning from the Rural Pursuits Zone to another zone where land could be subdivided into smaller allotments for dwelling houses.”

The Council there argued that the combined effect of ss 3.5(4)(d) and 3.5(5) was to exclude the appellants' claim which argument was unsuccessful in this Court.

[67] The Council successfully appealed.⁶¹ Both McPherson JA and Davies JA dealt with the interpretation of s 3.5(4)(d). McPherson JA said⁶²:-

“The respondent's submission would treat s 3.5(4)(d) as creating a right to compensation that is different from and in some respects wider than the right under s 3.5(1)(a) from which it is intended to detract. That would have the extraordinary result that, as the reasons of Davies JA demonstrate, the less direct or more remote the connection between the Planning Scheme provision and the injurious affection suffered by the owner, the stronger his prospect of recovering compensation would become. That is to ascribe an irrational outcome to the legislation. The foundation for the respondent's claim to compensation is s 3.5(1) and the exception imposed

⁶⁰ [2000] QPEC 71.

⁶¹ *Kettering Pty Ltd v Noosa Shire Council* [2002] 120 LGERA 33.

⁶² [2002] 120 LGERA 33 at 36 [8], [10].

upon it by s 3.5(4)(d) cannot create a right to compensation that rises above its source. Exceptions are by their nature limitations on and not extensions of the rules on which they operate.”

Davies JA said⁶³:-

“It can be seen from the paragraphs of s 3.5(4) that injurious affection which may give rise to compensation is thereby limited to affection of an interest in premises which is direct and immediate. Nowhere is this clearer than in what I have described as the exceptions to par (d): for example, one of the ways in which a Planning Scheme might most directly and immediately operate to prohibit or restrict the use of land would be where, before it came into force, there was a right to use the land for a particular purpose which the provision prohibited or restricted. To construe par(d), as the learned primary judge held and the respondent contends, so as to exclude payment of compensation only where a Planning Scheme, by its direct operation, restricts the use of land would be inconsistent with the Scheme of these paragraphs in general and with the exceptions in particular. The correct construction is to the contrary.

So construed par(d) applies in this case to preclude payment of compensation. The reason why the respondent’s interest is affected by the coming into force of the Development Control Plan is that that Plan, by its operation, restricts the use of land. But it does not do so immediately and directly; it does so only potentially thereby reducing its value. That is because a Development Control Plan merely indicates the intentions for the future development or designated parts of the whole of the Planning Scheme area. ...That this Development Control Plan is no more than a Statement of Intent for the future can be seen from an examination of the Plan.”

- [68] Before the High Court, the respondent Council contended for the above interpretation adopted by the Court of Appeal to argue that the words “by its operation” in s 3.5(4)(d) should be interpreted to focus upon the substantial or direct effect of the Planning Scheme rather than its indirect effect. The Court identified the various expressions “by the coming into force ...”, “... imposed by the Planning Scheme”, “came into operation”, “coming into operation”, and “comes into force” in the various sub-

⁶³ [2002] 120 LGERA 33 at 41 [27] – [28].

paragraphs in 3.5 dismissing any particular significance to the use of those different expressions, it found they were intended to cover the same or similar concepts and said:-⁶⁴

“In each case, however, the expression has a temporal connotation and appears to be intended to identify a time or event, and not to point to a distinction between an indirect or direct effect of a change in a Planning Scheme.”

[69] It went on to say:-

“The DCP had no prohibitory effect upon the appellants’ use of the land. Its effect, although no doubt significantly so, was no more than influential. The respondent submits, however, that this means that its effect was at least restrictive, and therefore that it falls within the alternative limb of the exception contained in s 3.5.4(d), as a provision of a Planning Scheme which, by its operation restricts the use of land.

In our opinion ‘restricts’ should not be read in this way in s 3.5(4)(d). To give the word ‘restricts’ such a meaning as, ‘restricted by influencing’ or ‘by having a strong bearing upon’ would be to give it a strained and artificial meaning, and one not compelled, either by the context of its use as held by the Court of Appeal, or by any extraordinary consequences otherwise.

Section 3.5(4) does not expressly or by implication confine compensation to affection which is direct and immediate. The meaning of s 3.5(1)(a)(i) is not to be construed as the Court of Appeal did, by reference almost exclusively, to the exceptions to it. The appropriate approach is to identify the extent to which the very expansive right to compensation which it confers, is reduced by the subsequent exceptions for which s 3.5(4) provides.”

Later the Court said⁶⁵:-

⁶⁴ [2004] 134 LGERA 99 at 110-111.

⁶⁵ [2004] 134 LGERA 99 at 111 [29].

“The Court of Appeal was of the opinion that acceptance of the construction urged by the appellant would produce an anomalous, indeed extraordinary result that an injurious affection by way of a prohibition or restriction upon use would not attract compensation, whereas such an affection by way of an indirect and only influential change would. But this is to overlook the particularity and limited nature of the subject matter with which s 3.5(4)(d) is concerned: the prohibition on the use of land, or the restriction on the use of buildings or other structures, **for particular purposes**. The effect of the DCP here is upon the potential of the land for subdivision, and greater intensity of use, and not of use **for a particular purpose**. ...There is nothing in the language of s 3.5 which requires that a distinction be drawn between direct and indirect affects.”

- [70] The appellants’ present case originally relied upon both limbs of s 3.5(1)(a), that is, the coming into force of the Planning Scheme (s.3.5(1)(a)(i)) and the prohibition or restriction imposed by it⁶⁶ (s.3.5(1)(a)(ii). By letter dated 10 May 2007⁶⁷ the appellants’ solicitors wrote to the Council:-

“In light of the decisions in *Kettering* and *Sparke*, the Appellants will not continue with the basis for their claim under s 3.5(1)(a)(ii) of the Repealed Act, but simply proceed on the basis set out under s 3.5(1)(a)(i) of the repealed Act.”

- [71] The Council relied upon certain statements attributed to the appellants to demonstrate that the 1996 Strategic Plan did by its operation restrict the use of the Land. For instance, in the particulars provided by the appellants,⁶⁸ the appellants state “there was no prospects of an approval being given for a major residential subdivision supporting commercial industrial and community uses; in the appellants’ opening⁶⁹ there is the statement that the Council destroyed any expectation that the Land had urban development potential; and in the appellants’ written submissions⁷⁰ the statement that the 1996 Strategic Plan obliterated any expectation that the Land may be developed for an urban purpose. But those statements are no more than expressions of opinion by the appellants as to the operation of the 1996 Strategic Plan howsoever prescient they may be.

⁶⁶ Exhibit 1A Tab 1 [6]-[7].

⁶⁷ Exhibit 30.

⁶⁸ Exhibit 1A Tab 13 [c].

⁶⁹ Exhibit 4A [1].

⁷⁰ Ibid [11].

Status of Strategic Plan

- [72] The High Court in *Kettering* accepted the comments by Davies JA in the Court of Appeal to the effect that a Development Control Plan merely indicates the intentions for the future development of the area covered by a Planning Scheme and is not a statement of intention, nor a declaration or prescription of uses or prohibitions or restrictions upon them. As was said in *Zieta No. 59 Pty Ltd v Gold Coast City Council*⁷¹ by Connolly and McPherson JJ as to the effect of a Strategic Plan:-

“The effect of a Strategic Plan was considered by Kneipp J in *Curtis v Beaudesert Shire Council* [1983] 1 Qd. R. 201/213. His Honour there observed that he was unable to see that the effect of the legislation was to elevate the provisions of the Strategic Plan from expressions of policy to mandatory provisions. His Honour went on:-

‘The plan quite plainly says that it relates to policies. The only way in which it and the Scheme properly could be read together sensibly is to regard the plan as to relating to policies only, mandatory requirements being dealt with by the proper scheme.’

- [73] Again, in *Lewiac Pty Ltd v Gold Coast City Council*⁷² Thomas J (with whom McPherson JA agreed) said in relation to *Curtis* and *Zieta*:-

“The two principle points in those cases are that a Strategic Plan is only an objective, and not every objective in such a Plan has to be met before the proposal of an application may be accepted, and that the general objective of the Strategic Plan is to specify aims, objectives and strategies. There is, however, nothing that prevents a degree of particularity in the Statement that is after all an objective. As a forward planning strategy it contains relevant matters for consideration by a Court.”⁷³

⁷¹ [1987] 2 Qd. R. 116.

⁷² [1994] 83 LGERA 224 at 230.

⁷³ See also *New York Enterprises Pty Ltd v Beaudesert Shire Council* [1981] QPLR 48 at 50; *Mookai-Bi-Bayan (Aboriginal and Torres Strait Island Corporation) v Council of the City of Cairns and Anor* [1994] QPLR 104 at 106.

PEA s 4.4(5A)

[74] This provision was introduced by Act No. 37 of 1992 and operated from the date of its assent on 23 July 1992. It provides:-

“(5A) The Local Government must refuse to approve the application if:-

- (a) the application conflicts with any relevant Strategic Plan or Development Control Plan; and
- (b) there are not sufficient planning grounds to justify approving the application despite the conflict.”

[75] The Council contended that this provision had the effect of elevating the status and effect of Strategic Plans from being more than just influential to having operative effect.⁷⁴ Two things might be said in response to that. Firstly, to the extent that it is suggested that that affects the interpretation of s 3.5(4)(d) in the event of a conflict within s 4.4(5A), that former provision speaks of the operation of the Planning Scheme not the operation of other legislation. The Planning Scheme hereunder consideration does not include the PEA.

Secondly, the submission is at odds with a statement of this Court the year following the introduction of s 4.4(5A) in *Fitzgerald v Logan City Council and Anor*⁷⁵ where Row DCJ said in relation to that provision:-

“The importance of the provision of a Strategic Plan in relation to, in particular, rezoning applications, is evident by the 1992 amendments to the Act. The amendments to the Act do not however, make any alteration to the attitude which the Court has adopted in relation to the provisions of a Strategic Plan. The Act, however, is indicative that in considering the various types of applications, if the application conflicts with any relevant Strategic Plan, and there are not sufficient planning grounds to justify approving the application despite the conflict, a local authority must refuse the application ...”

⁷⁴ Council Submissions and Reply [23].

⁷⁵ [1993] QPLR 55 at 57.

Conclusion re s 3.5.4(d) Argument

- [76] In my view, the Council's argument seeking to disqualify the appellants' right to compensation under s 3.5(4)(d) and (5) must fail. The 1996 Strategic Plan is not one which, by its operation, prohibits or restricts the use of the Land in the relevant sense. It has the same effect as the DCP in *Kettering*. That effect is upon the potential of the Land for subdivision and the greater intensity of use and not of its use for a particular purpose.

ENVIRONMENTAL CONSIDERATIONS GENERALLY

- [77] Before dealing with the specific environmental issues raised by the Council in opposition to the appellants' claim I shall deal with the issue of environment generally. It is an obvious fact of life, accepted by both parties, that environmental issues are today seen by the community and planning authorities to be of more heightened significance than in previous years. The difficulty, of course, is in drawing any line to identify at what point that heightened appreciation of the importance of the environment dawned.
- [78] Both parties accept that changes have occurred. The appellants' point to a greater emphasis and level of stringency in terms of environmental values in the 1996 Plan and the impact of its terms on the development potential of land.⁷⁶ The Council pointed to the relevant legislative history and other developments in relation to environmental issues starting with the *Local Government Act 1936* (1936 LGA) seeking to demonstrate, as I understood it, that whilst the community and planning authorities are now more conscious of the environment and its preservation, there were from early days provisions in legislation reflecting that concern.
- [79] Under the 1936 LGA, prior to the introduction of the PEA on 15 April 1991, s 32A obliged a local authority to take into account any deleterious effect on the environment and if thought appropriate, seek an environmental impact study report. The PEA, according to the Council,⁷⁷ placed considerable additional focus on environmental issues. In relation to applications to rezone land, the impact of the proposal on the environment was to be assessed whether or not an environmental impact statement had been prepared⁷⁸ and any deleterious effect on the environment resulting from the implementation of any proposal under the Act was to be taken into consideration and, if necessary, an environmental impact statement if required by the relevant department.⁷⁹ Referral agencies, being those responsible for the protection of the environment, the local government in the

⁷⁶ Appellants' Submissions [93] – [94].

⁷⁷ Council's Submissions [96].

⁷⁸ PEA s 4.4(3)(f).

area of the proposed development, and any other department, or statutory body thought appropriate to consult, were to be consulted in relation to whether an environmental impact statement was necessary, designated developments including, relevantly, wetland areas.⁸⁰ Even if the proposed development was not a designated development, a local government, or the chief executive of the relevant department, could call for one.⁸¹

1992 Amendment to PEA

- [80] The Council points to this amendment as bringing about a significant change to the development assessment regime under the 1936 LGA. As to environmental matters it provided that the local government must have regard to any environmental impact statements submitted with an application together with other matters relevant to the application.⁸² The local government was also obliged to have regard to State Planning Policies in deciding any application.⁸³ Further, and significantly, s 4.4(5A) compelled the local authority to refuse to approve any application if it conflicted with any relevant Strategic Plan or Development Control Plan unless there was sufficient town planning grounds to justify approval notwithstanding the conflict.

State Planning Policy 1 /1992

- [81] Subsequent to the amendment of the PEA by the introduction of s 4.4(3A)⁸⁴, State Planning Policy 1 of 1992 (SPP 1/92) dealing with the protection of good quality agricultural land was introduced. The relevance of that Policy will be later discussed in more detail.

The Turnbull and Olsen Report

- [82] On 23 November 1992 a vegetation survey and assessment of landscapes within the Maroochy Shire was published by Drs M H Turnbull and M F Olsen.⁸⁵ That report assessed and mapped the vegetation of the Maroochy Shire. Twenty-four Vegetation Units were identified including habitats of several species of rare and threatened or other noteworthy species of flora.⁸⁶ In the view of the appellants' flora expert, Dr Carter, this report became, by default, a policy document and was later integrated into the 1996 Strategic Plan.⁸⁷ Dr Carter agreed it was the basis for vegetation assessment

⁷⁹ PEA s 8.2(1) and (2).

⁸⁰ PEA s 8.2; P&E Regulation 1991 s 16 and Schedule 2 [10].

⁸¹ PEA s 8.2(12) and (13).

⁸² Section 8.2(11D).

⁸³ Section 4.4(3A).

⁸⁴ By Act No. 37 of 1992 commencing 23 July 1992.

⁸⁵ Exhibit 45.

⁸⁶ Exhibit 45 p. 4.

⁸⁷ Exhibit 5 p. 16 Line 15.

in the Maroochy Shire⁸⁸ from its publication even before its incorporation into the 1996 Strategic Plan.

Nature Conservation Act 1992 and Environmental Protection Act 1994

- [83] The next pieces of legislation in the progression were the *Nature Conservation Act 1992* (NCA) and the *Environmental Protection Act 1994* which according to the Council reflected a significant shift in the way in which environmental matters were appreciated in the broader community.⁸⁹ The NCA dealt with, inter alia, wildlife and habitat conservation and classified wildlife into eight categories and setting out what principles for the management of the wildlife in each of those categories.⁹⁰ Wildlife is defined in the NCA as any taxon or species of an animal, plant, protista, prokaryote or virus.⁹¹ Two of those classes were rare and near threatened wildlife.⁹² Both it and the *Environmental Protection Act* introduced offence provisions.⁹³
- [84] The Council acknowledges that whilst the *Nature Conservation Act 1992* classifying flora and fauna as rare and threatened became a standard against which development applications could be assessed, nevertheless, strict application of that standard uniformly across Queensland did not commence forthwith upon its introduction in 1992. Having said that, the Council says that by 1996 potential impacts upon rare and threatened species of plant and animal life constituted a sound basis for refusing permission for development.⁹⁴ This it said, was exemplified by the Notice of Disputed Issues filed by the State of Queensland in the Norfolk Estates appeal in relation to the Land.⁹⁵
- [85] Finally, in relation to environmental awareness the Council points to the fact that the 1996 Strategic Plan, whilst operative from 10 May 1996, was conceived in the Council's resolution in 1992 to review its then Strategic Plan and was adopted on 13 April 1995.⁹⁶ The point made, is that from the date of adoption on 13 April 1995 to the Relevant Date, there was some 13 months when the public attitudes through their submissions, any Council concerns and the body of knowledge behind the Strategic Plan were formed, publicly known, and available.

⁸⁸ Transcript 2.86.57.

⁸⁹ Council Submissions [106].

⁹⁰ *Nature Conservation Act 1992* Part 5.

⁹¹ *Nature Conservation Act 1992* Dictionary p. 182.

⁹² *Nature Conservation Act 1992* s 71(a)(iv)(v).

⁹³ *Nature Conservation Act 1992* Part 5; *Environmental Protection Act 1994* Chapter 3 Part 10.

⁹⁴ Council Submissions [108].

⁹⁵ Exhibit 14 [4(c)] and [6(d)].

⁹⁶ Exhibit 1C p. 400. That evidences extensive research and planning work by the Council and the consideration of many proposals and ideas contributed by community groups, industry, Government and individuals.

ISSUES

[86] The appellants accept that a prudent purchaser when considering the market value of the Land in the before case would take account of:-

- (a) the relevant provisions of the PEA with respect to an application for rezoning in particular s 4.4(3), 4.4(3A) and 4.4(5A);
- (b) the advice of suitably qualified experts in the field of town planning, good quality agricultural land, flora, fauna, traffic, civil engineering and valuation;
- (c) the attitude of the respondent Council and the State Government Departments to the Norfolk Estates rezoning application; and
- (d) events surrounding, and decisions associated with, the approvals obtained for the residential estates Peregrine Springs and Coolumb Ridges.⁹⁷

ENVIRONMENTAL ISSUES

[87] The Council says that the Covey Plan fails to acknowledge the existence of vegetation and habitat of conservation significance on the Land and the need to protect it which gives rise to a conflict between the proposal and the 1985 Strategic Plan. It relies on Urban Areas PDLU Objective 1(d) which provides that the inclusion of areas within the Urban Area PDLU does not mean that all such properties may be rezoned and developed for urban purposes. It provides that many areas because of their physical characteristics will be retained. The Council also relies on Objective 4 of the same PDLU which seeks to ensure that new urban growth does not conflict with environmentally sensitive and/or conservation areas. It requires the Council to take into account, in considering rezoning and development applications, the effect upon the environment of any development which would follow a rezoning.

Identified Physical Characteristics

[88] The Council identified heavy vegetation on the Land with its floristic diversity and associated fauna habitat values as obvious physical characteristics within Objective 1(d).

Fauna

[89] Evidence was given by Mr Caneris for the appellants and Mr Agnew for the Council on fauna issues. It is not disputed that the habitat on the Land could be divided into four broad types⁹⁸:-

- (a) dry woodland/open forest vegetation;
- (b) wet open forest;
- (c) dry heathland; and
- (d) wet heathland/swamp.

[90] The known and potential fauna species identified by Mr Caneris in his report⁹⁹ are species listed under the *Nature Conservation Act 1992* in 1996:-

- (a) Wallum-Sedge frog (vulnerable);
- (b) Wallum froglet (vulnerable);
- (c) Glossy Black Cockatoo (vulnerable);
- (d) Ground Parrot (vulnerable);
- (e) Lewins Rail (vulnerable);
- (f) Koala (culturally significant); and
- (g) Echidna (culturally significant).

Mr Caneris agreed with Mr Agnew that¹⁰⁰:-

“4. In respect to the site in 1996, it is reasonable to conclude that the condition of the site’s habitat for the abovementioned species would have been no less favourable and most likely to be more favourable in terms of supporting the abovementioned species and generally, greater fauna specie richness (biodiversity).

⁹⁷ Appellants’ Submissions [140].

⁹⁸ Caneris Report Exhibit 6.

⁹⁹ Exhibit 6 Table 2 p.14-20.

¹⁰⁰ Fauna Experts’ Joint Statement Exhibit 1B Tab 19 p. 182-183.

5. ...

6. The site, as at 10 May 1996 would have provided suitable habitat for all of the species of conservation significance listed above. Furthermore, it is reasonable to expect that all taxa detected in 2005 would have occurred on the site prior to 10 May 1996.”

[91] In his report Mr Caneris made the following points as to the potential impacts the Covey Development would have on the fauna habitat values of the Land¹⁰¹:-

- (a) a reduction in the fauna habitats and habitat values;
- (b) a significant increase in potential threats to fauna by the presence of domestic pets and increased vehicle movements;
- (c) significant detrimental impacts on the fauna populations within the development footprint resulting in severe reduction of movement options for fauna to, through, or from, the site;
- (d) notwithstanding the above, and given that there were still relatively large areas of habitat in the local landscape, the development would not have resulted in any localised extinctions or endangerment of the long term security of any fauna species;
- (e) overall, the loss of native vegetation and potential changes in habitat values would have had a negative impact on the value of the site as fauna habitat and would have resulted in the loss of habitat for species of conservation significance; and
- (f) the actual level or likelihood of occurrence or degree of impact on significant species would not have been likely to have been known or identified at the relevant time.

[92] Mr Caneris expressed the further following opinions¹⁰²:-

- (a) In May 1996 although the *Nature Conservation Act 1992* was in force, the scheduled fauna and/or their habitats were not a significant component of development assessment;
- (b) the Council had no listing of animals of special significance, the understanding of fauna and faunal habitats was low; the Department of Housing, Local Government and Planning did not require an environmental impact study for rezoning applications and it

¹⁰¹ Exhibit 6 p. 20 [4.9].

would have been unlikely that a detailed fauna survey would have been required as a part of the development assessment process of the application to develop the subject site;

- (c) the level of site assessment for fauna species and/or their habitat at any level of Government would not have been comprehensive, the presence of significance fauna was not a significant factor in the approval process of surrounding developments at the time and it is reasonable to assume that an application for the subject Land would not have been significantly implicated by the presence of native fauna or habitat values;
- (d) the faunal composition and habitat values of the subject site in May 1996 was comparable to the local landscape and it is unlikely that those factors would have resulted in a significant reduction in the size, type, or location of urban development in the area;
- (e) in his view, at May 1996 there were clear grounds for expecting the subject site to have potential for approval for urban development with the requirement for areas of Land to be set aside and to be protected from the impacts of the development, 10% park contribution being the benchmark for such open space contributions at the time; and
- (f) he did not agree that urban development could not have occurred on all portions of the Land or that it would be unachievable which conclusion was exemplified by contemporaneous approvals in the local area, particularly Peregrine Springs Estate.

[93] In evidence Mr Caneris said:-

- (a) the close proximity of the Land to a number of National Parks and areas of conservation significance results in much more security for the long term viability of future fauna populations.¹⁰³
- (b) the Covey Plan would not have been a good outcome if the Council had a true and significant concern about the amount of fauna habitats needed to be retained and the level of linkages required for the fauna species¹⁰⁴;
- (c) he would have advised the client that to convince the Council to approve the Covey Plan it was going to have to be substantially modified¹⁰⁵;

¹⁰² Exhibit 6 p. 20 [5].

¹⁰³ T7.4.45-50.

¹⁰⁴ T7.9, 4.13-23.

- (d) had he been a consultant at the time he would have encouraged his client to try to retain the wetland areas, some habitat values, and movement corridors¹⁰⁶;
- (e) the Covey Plan really takes into account very little in terms of fauna considerations and would have told his client that the plan would be the absolute bare bones that the client could expect¹⁰⁷;
- (f) he would have expected the Council to come back to the applicant looking to have a better outcome from the Covey Plan¹⁰⁸;
- (g) he would have advised the client that the dryland vegetation areas of the subject land¹⁰⁹ have the highest potential for urban development and that with reasonable design and park dedications, etc, within there, the client could expect to achieve urban development in those areas¹¹⁰;
- (h) that the development on the Covey Plan intruded into areas of wetland communities, that it would have been appropriate to keep those areas free of development from a fauna perspective, and whereas he would not have advised his client that they were 'no go' areas, he would have advised the client to have regard to those areas as areas capable of securing important habitat for vulnerable species¹¹¹.

Effect of Motorway on Fauna

- [94] Mr Caneris said¹¹² that the Sunshine Motorway passing through the Land presented a quite threatening area for terrestrial fauna movement, particularly the likes of the koala and echidna. The roadway would ultimately result in the death of these species from collisions with cars. In short, Mr Caneris' view was that from a faunal perspective, the Land has relatively good connectivity for fauna movements but it is limited or interrupted by the presence of the Sunshine Motorway.¹¹³

¹⁰⁵ T7.52.43-55; T7.53.1-15.

¹⁰⁶ T7.48.1-10.

¹⁰⁷ T7.51.39.

¹⁰⁸ T8.12.50-56.

¹⁰⁹ Identified by Dr Olsen in Exhibit 19.

¹¹⁰ T7.51.49; T7.52.1-8.

¹¹¹ T7.52.16-40.

¹¹² T7.14.18.

¹¹³ Exhibit 6 [2.8].

Impact of Logging Activities on Fauna

- [95] Mr Caneris also said¹¹⁴ that a large amount of Australian fauna are hollow log dependent and rely on old growth forest for their habitat values either for roosting or breeding. He said that logging ultimately results in a reduction of those values on any given site, and, as I understood him to say, the accessing of the logged trees by the animals creating tracks brings secondary impacts, namely, weeds. He said that as long as logging continued there would be a continuing reduction in the fauna habitat value, varying depending on the species.

Mr Agnew

- [96] Mr Agnew was the fauna expert called by the Council¹¹⁵. His conclusions as at the Relevant Date were:¹¹⁶
- (a) as at 10 May 1996 the Land would have provided suitable habitat for a variety of rare and threatened fauna species (as outlined above, those species have been identified by Mr Caneris and agreed by Mr Agnew in their joint statement¹¹⁷);
 - (b) in 1996 a suitably experienced consultant zoologist would have had sufficient “desk top” information that the site could potentially support a variety of species of conservation significance and, in considering the habitat preferences for those species it would have been clear to the consultant that the site was highly constrained in regards to development;
 - (c) it is inconceivable that the habitat values on the Land could be protected to any acceptable degree given the high density form of proposed development, it being obvious to him that those values would be all but extinguished if the development was implemented;
 - (d) given the high conservation values of the site and the extent and intensity of the proposed development, it is reasonable to assume the Council would have required an environmental impact study which would have required consultation with referral agencies;

¹¹⁴ T7.14.35.

¹¹⁵ Report Exhibit 25.

¹¹⁶ Agnew Report Exhibit 25 p. 16.

¹¹⁷ Exhibit 1B Tab 19 p. 175.

- (e) there was evidence to suggest the Department of Environment and Heritage was aware of the high conservation values of the site and its surrounds which, in any event, would have been identified by an environmental impact statement;
- (f) it is reasonable to assume that referral agencies (at least the Department of Environment and Heritage) would have expressed considerable concern as to the proposed development which would not have received the support of those agencies;
- (g) the advice he would have given to a hypothetical prudent purchaser seeking to acquire the Land in May 1996 would have been:-
 - (i) that a variety of rare and threatened fauna species were known to occur within the wider area and that the site supported potentially suitable habitat for a variety of those species, ie, Wallum Froglet, Wallum Sedge-Frog, Wallum Rocket Frog, Glossy Black Cockatoo, Grey Goshawk, Powerful Owl, the lizard – *Ophioscincus Taruncatus*, Ground Parrot and Lewin's Rail;
 - (ii) any development more intense than large rural residential style allotments would significantly compromise the apparent high conservation values of the site;
 - (iii) even low key rural residential development would need to be directed to minimise impacts to ecological values by, for example,, restriction of development to building location envelopes located in cleared or highly disturbed areas, implementation of stormwater controls and high quality effluent disposal treatments;
 - (iv) a comprehensive fauna and flora survey program would be required to inform any future development of the site;
 - (v) the proposed plan of development would significantly decrease the site's capacity to support significant fauna species, a diverse fauna assemblage (to be expected on the site) and the site's ability to contribute to the ecological values of the local wildlife habitat network. This would be deemed unacceptable by the Council and Department of Environment and Heritage.

Fauna Experts' Review of Development Applications Prior to November 1992

- [97] Mr Caneris and Mr Agnew in their Joint Report of 14 December 2008¹¹⁸ reviewed documents relating to Development Applications prior to November 1992 in relation to fauna issues. They agreed that whilst fauna issues were not expressly referred to, they were, by degree, addressed through vegetation retention requirements, park dedications and in particular, through compliance with the Council's tree preservation by-law for vegetation proposed for retention.

Review of Development Applications made Between December 1992 and May 1996

- [98] They also conducted a review of applications between December 1992 and May 1996 and agreed on the following¹¹⁹:-

- (a) there was an increasing focus on the requirements to identify and protect areas of conservation value (both flora and fauna) including movement corridors for fauna (and in particular riparian habitats);
- (b) in relation to the Norfolk Estates Development/Rezoning Application the documents reviewed prior to the Relevant Date identified:-
 - (i) there was a perceived requirement for the assessment of fauna habitat values for the purposes of background information to support the rezoning application;
 - (ii) the fauna and flora habitat values assessment was very limited as to scope and detail of field work undertaken (both in terms of effort and techniques);
 - (iii) existing information was available, for example, the Department of Environment and Heritage threatened species database, which could have assisted in an assessment, but was not adequately relied upon;
 - (iv) the above appeared consistent with the general characteristics of the fauna assessment process undertaken for the Peregrine Springs site;
 - (v) a benchmark of 10% of the site for park dedication was used;

¹¹⁸ Exhibit 6 p. 56.

- (vi) in relation to the Norfolk Estates application, there was no documentation evidencing the Council specifically raising fauna as an issue prior to the deemed refusal date, though it was clear that the Council determined, after the appeal was lodged, that it would not support the development for reasons including concerns in relation to vegetation, fauna, and conservation values;
 - (vii) there was evidence that the Department of Environment and Heritage review of the fauna assessment indicated that site values were inadequately described and that the proposed development had the potential to result in deleterious impacts to fauna habitat and conservation values of the site and surrounding area, especially in regards to local fauna movement and habitat values of the adjoining National Parks;
 - (viii) there was evidence that significant concerns were, or may have been raised, by parties other than the Council and the Department of Environment and Heritage, namely, Noosa Shire Council, Noosa National Parks Association, and other community groups, in relation to the potential impact of the development on both on-site and off-site fauna and fauna habitat values.
- (c) There were considerable contrasts and approaches by consultants in their ecological assessments often being less vigorous than the standard then currently applying; and
 - (d) Given the predicted values of the site and the potential negative impact on those values of the proposed development, regardless of the Council's decision, the application could have been the subject of an appeal to the Planning and Environment Court.

Flora

- [99] Dr Carter gave evidence for the appellants and Dr Olsen for the Council. They met twice, on 18 March 2008 and on 15 December 2008 respectively, subsequent to which latter meeting there were email telephone and fax communications designed, as with the two meetings, to clarify and narrow the issues.¹²⁰ That resulted in three joint statements setting out matters agreed and disagreed.¹²¹ The

¹¹⁹ Exhibit 6 p. 56.

¹²⁰ Exhibit 5 [3.1] – [3.3].

¹²¹ Exhibit 5 pp. 108, 1012 and 1017.

number of issues agreed outnumbered those disagreed. Without setting out all matters dealt with in those joint statements, I mention the following. Unless otherwise stated, they are matters agreed between the two experts:-

- (a) in May 1996 significant flora and fauna values as they affect a development assessment were based upon the 1992 Turnbull and Olsen Report,¹²² the mapping in which Dr Carter regarded as the driving force for vegetation policy both before and after the gazettal of the 1996 Strategic Plan.¹²³
- (b) the 1992 Turnbull and Olsen Report identified the following vegetation units as Priority 1 (areas worthy of conservation) occurring on the subject site – 9a, 9e, 10a, 10e, 21a, and 21b which equate to regional eco-systems 12.3.4, 12.3.5, 12.3.13 and 12.5.3 and equate to vegetation units 1, 2, 3a, 3b 4 and 7 in the later Report of Carter and Thomas (1999);
- (c) Rare flora (classified under *Queensland Nature Conservation Nature Act 1992*), namely, *Alyxia Magnifolia* and *Schoenus Scabripes* found on the site, *Schoenus Scabripes* being found in the wet heaths and *Alyxia Magnifolia* found in the forest unit 5(a). That reference to unit 5(a) relates to the five wetland communities numbered 1, 2, 3, 3a, 4, 5a and 5b identified and marked with other, including dryland, communities on the map referred to in the 15 December 2008 Joint Statement.¹²⁴ Exhibit 19 is the same map showing the dryland areas shaded.¹²⁵

In relation to these rare flora, Dr Carter believes that the *Schoenus Scabripes* was largely unknown from the mainland until the late 1990's but was known as at the date of the 18 March 2008 Joint Report to occur in many melaleuca/wet heath areas of the Sunshine Coast. He also made the point that *Alyxia Magnifolia* occurs in small groups of plants from south-east Queensland to Mackay.

- (d) Another species *Acacia Attenuata* has potential on the site, is a disturbance regenerator and is ephemeral in its occurrence. Dr Olsen observed that this species was observed in the near vicinity of the Land in the 1990's and in the early 2000's which Dr Carter did not dispute.

¹²²

Exhibit 45.

¹²³

Exhibit 5 [3.1(b)].

¹²⁴

Exhibit 1B Tab 23 behind p. 200.

¹²⁵

T3.7.20-30; T3.10.20-30.

- (e) The development footprint on the subject Land should aim not to result in the loss or degradation of wetland areas or their values as discussed in Turnbull and Olsen 1992.
- (f) As to the dryland areas, the constraints on development in Turnbull and Olsen 1992 have evolved since the proclamation of the *Vegetation Management Act 1999* and, from a flora perspective could accommodate some development.
- (g) The Covey Plan does not adequately protect the wetland flora values. The principal vegetation values of the Land lie in:-
 - (i) the presence of rare and threatened plant species;
 - (ii) rare and threatened plant communities particularly the low lying wet areas;
 - (iii) fauna habitat value, especially for rare and threatened species; and
 - (iv) to a lesser extent, as a buffer to the Noosa National Park north-west of the Land.

Dr Olsen said the dryland areas were less well represented in the local and regional landscape and the wetland areas, hence, their mapping as endangered regional eco-systems.

- (h) The connectivity value of the Land has been diminished by the development of the Peregrine Springs area and other urban developments to the north-east and south-east of the Land as well as agricultural uses to the south. Though, from a flora perspective Dr Olsen considered that those linear corridors did not pose a significant ecological barrier and there edge effects were limited.
- (i) The connectivity value of the Land could be enhanced by major restoration works on the cleared farm land to the south (east of Doonan Bridge Road). However, it would be better to leave remnant native vegetation in tact as habitat and as functional corridors than attempt to re-create natural eco-systems in cleared farm land with unknown chance of success.
- (j) The vegetation integrity of the subject site was compromised by the presence of the Sunshine Motorway bisecting the site, the fragmentation due to the presence of roads and easements on the northern and eastern boundaries, and the rural and urban land uses to the south. In this regard, Dr Olsen was of the same view as to connectivity as he expressed in relation to Peregrine Springs above, and said in his view, '*the subject Land*

has among the highest natural values of any remaining undeveloped land of the coastal lowlands on the North Coast outside the conservation estate’.

- (k) Major threats to vegetation values are:-
 - (i) the potential for urban development on all or part of the Land;
 - (ii) existing forestry land use rights, especially within the drylands area;
 - (iii) withdrawal of fire as an influencing ecological factor;
 - (iv) changes in drainage due to adjacent land uses;
 - (v) weed introductions.
- (l) The Peregian Springs site nearby and south of the Land is a reasonable comparative site, (vegetation communities and concentrations of rare and threatened species), with applications and/or approvals that are contemporaneous with this matter.

Dr Olsen agrees that the values of Peregian Springs were analogous, but said the loss of endangered regional eco-systems from that site was a consequence of a rezoning to Special Facilities resulting in an exemption from the operation of the *Vegetation Management Act 1999*. Dr Carter, however, pointed out that both the rezoning approval for Peregian Springs and its gazettal on 20 August 1993 occurred before the coming into force of the *Vegetation Management Act 1999* on 15 September 2000.¹²⁶
- (m) The Moreton Mill land now part of the Mooloolah River National Park is a reasonable comparative site for vegetation communities for concentrations of rare and threatened species.
- (n) In 1996 the Land, with the Peregian Springs site, formed a key link in a vegetation north-south corridor.
- (o) Given its size, inherent integrity, and connectivity, in 1996 the Peregian Springs land was of higher value for conservation than the Land. Dr Olsen disagreed with that.

Dr Olsen's Conclusions

- [100] In the result, Dr Olsen concluded¹²⁷ that development in accordance with the Covey Plan would have resulted in the acute and chronic loss of remnant native vegetation being the 'wet heathland' and 'wetland areas' and the 'dry land' components being forest dominated by "old growth" Eucalyptus Pilularius and Eucalyptus Racemosa together with known populations of the abovementioned rare plants, Alyxia Magnifolia and Schoenus Scabripes. He considered that those impacts, primarily resulting from the loss of remnant native vegetation, would have been unacceptable in 1996. That lack of acceptable loss also derived from the intensity of the development proposed by the Covey Plan. Dr Olsen said that the biotic values of the Land being a substantial component of the biotic assets of the local area were described to the Council prior to the submission of the final draft of the 1992 Olsen and Turnbull Report which he co-authored as part of the most significant "biodiversity hotspot" within the boundaries of Maroochy Shire Council, at that time. He concluded that from his knowledge of the Land and immediate environs in 1992, he would have advised any prospective and prudent purchaser that the Land was highly constrained by significant environmental features which would have required the preparation of an environmental impact statement, which statement he considers, would only have furthered the state of knowledge of the significance of the subject site.

Dr Carter's Conclusions

- [101] Despite the common ground reached with Dr Olsen as outlined above, Dr Carter's conclusions differed from his. In his view,¹²⁸ prior to 1992 development related town planning decisions were driven by need, engineering, and infrastructure considerations in the context of the relevant planning scheme, and those issues determined the fate of any rezoning application. He said vegetation values and significance were of little moment and the vegetation specialist's role was, at worst, to provide a species list and endorse a development plan that often largely reflected engineering constraints and the requirement to allocate 10% of the land for park purposes. He said the parkland allocation was traded off amongst environmental protection, recreation, and amenity requirements of the proposed development. He said few local government Councils gave consideration to vegetation communities and almost none gave consideration to fauna. He included the Maroochy Shire Council in that.
- [102] He identified two events in 1992 which heralded the beginning of some serious consideration of biological issues in relation to town planning decisions. Those events were the introduction of the *Nature Conservation Act 1992* and the publication of the Turnbull and Olsen Report 1992. As I have

¹²⁶ Exhibit 5 pp. 11 and 12.

¹²⁷ Exhibit 24 p. 6.

already pointed out, Dr Carter said that this report strongly influenced subsequent decisions, and, by default, became a policy document later integrated into the 1996 Strategic Plan. As to the *Nature Conservation Act*, as I understand Dr Carter's opinion, it assumed importance to proponents of development on the issue of vegetation constraints only when rare and threatened species under that Act were identified on the Land so as to precipitate an impact assessment or a threat of one.¹²⁹

[103] Dr Carter said that in January 1995 when he co-authored a report to Norfolk Estates in relation to the Land¹³⁰ it was his expectation that an application for rezoning of the whole of the Land to urban would have been successful given that:-

- (a) it was designated Rural and Urban under the 1985 Strategic Plan;
- (b) it formed a belt of land designated Urban under the 1985 Plan from Lake Weyba to Coolum Beach;
- (c) the Covey Plan allocated more than 10% of the Land to parkland;
- (d) no rare and endangered plant species were known from the Land at the time; and
- (e) the physical character of the Land, being bisected by the Sunshine Motorway and largely isolated by Monak Road and surrounding land clearing significantly reduced its ecological integrity for long term conservation.

[104] As to subparagraph (d) above, it will be recalled that in the joint statements of Doctors Carter and Olsen dealt with above, Dr Carter expressed the view that *Schoenus Scabripes* was largely unknown from the mainland until the late 1990's and the *Alyxia Magnifolia* occurred in small groups of plants from south-east Queensland to Mackay. They were the two rare flora identified. Dr Olsen's view¹³¹ was that, whereas those two species were first found to occur during the initial site inspection in April 2005, nevertheless, it was reasonable to expect that they were present on the Land in 1996 as they would not have developed their current stature in less than a decade. By 'current stature' can only refer to the status of the species in 2005, (less than a decade from 1996), rather than the stature at the time of his report in 2009, some thirteen years from the Relevant Date.

¹²⁸ Exhibit 5 p. 16.

¹²⁹ Exhibit 5 p. 16 Line 10.

¹³⁰ Exhibit 5 p. 28.

¹³¹ Exhibit 24 [15].

- [105] Dr Carter¹³² expressed the view that the approvals relating to Peregian Springs and Coolum Ridges, the Land's 1985 Strategic Plan designations, the Covey Plan's allocation of around 20% of land to parkland and the Plan's broad conformance with Turnbull and Olsen's (1992) Priorities for Vegetation, would render it inconsistent if vegetation constraint were used by the Council as a reason to refuse an application for rezoning the Land at the Relevant Date. He compared and contrasted the 1996 Strategic Plan designations of Peregian Springs and Coolum Ridges as Urban with some patches of conservation and the conservation, rural, or valued habitat, and agricultural protection, of the Land which designation, he said, was incongruous. That incongruity, he said, was exacerbated by the loss of vegetation integrity on the Land threatened by Murdering Creek Road, Monak Road and the Sunshine Motorway. In his view, the development on Peregian Springs and Coolum Ridges land would reduce the values associated with vegetation in the conservation designation in the 1996 Plan and increase the threats to the vegetation values of the Land thus extinguishing the logic behind the 1996 designations of the Land which he saw as the remnant of a strategy to protect a corridor of vegetation from Lake Weyba to Coolum Beach.
- [106] Doctors Carter and Olsen both agreed that a 40 m buffer to the wet heathland areas should be in place to protect those areas from development on adjacent lands.¹³³ Further, Dr Carter acknowledged that not all of the dryland community ought to be put over to development.¹³⁴ He also said that the destruction of the two rare species *Schoneus Scabripes* and *Alyxia Magnifolia* on the Land as a result of the proposed development would not threaten those species with extinction.¹³⁵ Of course, one does not wait for a plea of threatened extinction before protection is afforded to a species under threat.¹³⁶

Conclusion re Environmental Issues Dealt with by Caneris, Agnew and Drs Carter and Olsen

- [107] Although the appellants' reliance on Peregian Springs and Coolum Ridge approvals and the Norfolk Estate appeal raise issues relating to the environment, it is appropriate at this point to record my findings on the environmental issues addressed by Messrs Caneris and Agnew (fauna) and Drs Carter and Olsen (flora). In my view, the evidence of Mr Agnew and Dr Olsen for the Council, to the extent that it was at odds with Mr Caneris and Dr Carter respectively, would be preferred by the purchaser and considered to be of such an impact as to constitute those environmental issues as a serious risk to the grant of approval for the proposed development.

¹³² Exhibit 5 p. 4.

¹³³ Carter – T6.79.8, 8.59.47. Olsen T20.10; 10.27.55.

¹³⁴ T8.9, 6.30.

¹³⁵ T6.49.22-30.

¹³⁶ *Sabdoen Pty Ltd v Redland Shire Council* [1989] QPLR 149 at 152F.

PEREGIAN SPRINGS AND COOLUM RIDGES APPROVALS

- [108] The appellants say that any prudent purchaser would have been interested in the existence of these approvals as giving some insight into the Council's approach to applications for urban development during the currency of the 1985 Strategic Plan. Mr Schomburgk, the appellants' town planner, says that they are relevant because of their physical nature (land form vegetation, agricultural land quality, etc), their location relative to the Land and the timing of their approvals for urban development.¹³⁷ Their location can be seen in Figure 7 to Mr Schomburgk's report.¹³⁸ They both lie to the south-east of the Land with Peregian springs being the northern of the two areas. It is bounded in the north by Emu Mountain Road and in the north-west by Doonan Bridge East Road, both of which roads meet at the roundabout on Emu Mountain arterial road. That roundabout sits between the extreme south-east corner of the Northern Severance of the Land and the north-west corner of the Peregian Springs land.
- [109] Both Peregian Springs had, in 1996, a principal point of access at the Peregian Springs roundabout further south along the Sunshine Motorway from the Land.

Peregian Springs

- [110] The application for rezoning from Rural A to Residential A was dated 3 August 1989 (Exhibit 1E p. 945) and it set out the desired use for the land upon rezoning as a Residential Estate and Golf Course. The total area of the land was 335 ha. By Council resolution dated 24 October 1989 the Council resolved to approve the rezoning application subject to conditions. By letter dated 2 November 1989 the Council advised the applicant of its decision. It was not until nearly four years later on 20 August 1993 that the amendment to the Planning Scheme reflecting the rezoning was gazetted.¹³⁹
- [111] In anticipation of an application for subdivision, by request dated 28 January 1994, the applicant sought notification from the chief executive as to whether an environmental impact statement would be required. By letter dated 16 March 1994 the applicant was advised that an environmental impact statement would be required. On 29 September 1995 an application for a staged subdivision was lodged with the Council.¹⁴⁰ A flora assessment dated February 1996 was prepared by Golda Associates.¹⁴¹ On 20 August 1996 the Council resolved to approve the subdivisional application on the condition, *inter alia*, that no environmental impact statement would be required for the first 60

¹³⁷ Exhibit 2 [4.4.3].

¹³⁸ Exhibit 2 p. 48.

¹³⁹ Exhibit 1E p. 1006.

¹⁴⁰ Exhibit 1E p. 1022.

¹⁴¹ Exhibit 1E p. 1029.

lots, but would be required for all subsequent lots.¹⁴² Subsequently, an environmental impact statement was required for all lots,¹⁴³ and one was prepared¹⁴⁴ and submitted to the Council in January 1997. The change of mind by the Council as to an environmental impact statement on the first 60 lots resulted from a view expressed by the Director-General of the relevant Department that the Council should require an environmental impact statement in relation to the whole of the estate before giving any approvals.¹⁴⁵

- [112] The appellants point to four aspects of the Council's treatment of the Peregian Springs rezoning application which they say would have given great comfort to a purchaser in assessing the likely success of an application to rezone the land and develop it in terms of the Covey Plan¹⁴⁶ or its modified version.¹⁴⁷ Firstly, they point to the opinion expressed by Mr Caneris that Peregian Springs was a much more secure piece of land with higher priority at the relevant time in terms of the conservation of fauna species. He based that view on the absence of the Motorway which goes through the Land, fewer edge effects at Peregian Springs, and less cleared land to its immediate north and east than the Land has leading, he said, '*To a higher likelihood of successful management of fauna on the land*'.¹⁴⁸
- [113] Secondly, they rely upon the evidence of Dr Carter¹⁴⁹ that Peregian Springs had more flora species than the Land and, arguably, more biodiversity value coupled with more favourable edge effects and the absence of major road intrusion referred to by Dr Caneris.
- [114] The appellants also rely upon¹⁵⁰ the acceptance by Dr Olsen of the proposition that certain opinions he expressed in his report and in evidence as to the Land would have been equally applicable to the assessment of the Peregian Springs residential development in May 1996. Those passages are:-¹⁵¹

“20. Approval of the proposed plan of development (Noel Covey & Associates – Plan 0802-CAL-S01A-February 2008) would have removed many of the known values of the land through acute loss of biotic resources in the retained wetland

¹⁴² Exhibit 1E p. 1122.

¹⁴³ Exhibit 1E p. 1142.

¹⁴⁴ Exhibit 52.

¹⁴⁵ Exhibit 1E p. 1139.

¹⁴⁶ Exhibit 11.

¹⁴⁷ Exhibit 83.

¹⁴⁸ T7.19.14-34.

¹⁴⁹ T6.54.

¹⁵⁰ Appellants' Submissions [180].

¹⁵¹ Exhibit 24; T10.45-47.

areas due to the spatial arrangement and associated impacts consequent of the extent of urban development proposed in the various landscapes on the land”;

25. The proposed plan of development (Noel Covey & Associates – Plan N9407 -0802-CAL-S01A-February 2008) would have resulted in the acute and chronic loss of:

- Remnant native vegetation, being the wet heathland and wetland areas and the dryland components being forest dominated by “old growth” Eucalyptus Pilularis and Eucalyptus Racemosa at the time of the application; and
- Known populations the rare plants, Alyxia Magnifolia and Schoenus Scabripes;

26. These impacts (primarily resulting from the loss of remnant native vegetation) are considered unacceptable and would not have been acceptable in 1996;

28. The proposed plan of development (Noel Covey & Associates – Plan 0802-CAL-S01A-February 2008) simply would not have been acceptable in 1996;

29. The biotic values of this land, (as a substantive component of the biotic assets of the local area), were described to Maroochy Shire Council prior to the submission of the final draft of the 1992 Olsen and Turnbull report as part of the most significant “biodiversity hotspot” within the boundaries of Maroochy Shire Council at the time; and

30. Based on my knowledge of the land and the immediate environs in 1992, I would have advised any prospective and prudent purchaser of this land that the land was highly constrained by significant environmental features of the land and would have required the preparation of an Environmental Impact Statement.”

[115] Those attributions to Dr Olsen are factually correct subject to one important clarification. As the transcript reveals¹⁵² the questioning commenced by reference to Paragraph 20 above. It referred to the **actual** development that has taken place at Peregian Springs. The questions and answers of Dr Olsen in relation to Paragraphs 25, 26, 29 and 30 have the same foundation. But in relation to Paragraph 28 which states that the Covey Plan “simply would not have been acceptable in 1996”,¹⁵³ it seems to me Dr Olsen was not saying that the as built Peregian Springs development, as with the Covey Plan, would not have been acceptable in 1996, but rather was saying that the original proposed plan for that development would, as with the Covey Plan, have been unacceptable in 1996. He specifically refers to the fact that the original proposal was subsequently modified to correct the imbalances between the footprint and the flora values of the Peregian site. In other words, the original Peregian Springs Plan was unacceptable, as would have been the Covey Plan in Dr Olsen’s view, but, with modification over the years, concerns as to flora values were addressed so as to make the ultimate development acceptable to the Council. To give that balance, Dr Carter’s evidence is that Peregian Springs development, as approved, still resulted in very little of the most significant vegetation as identified by Turnbull and Olsen 1992, being retained.¹⁵⁴

[116] The third aspect of the Council’s approval of Peregian Springs related to its conditioning. The appellants pointed to an internal Council document¹⁵⁵ being a memorandum from the Council’s Landscape Architect who says:-

“Due to the environmental significance of the site it is felt that the area requires detailed and stringent conditions perhaps very different to the way Council has been [sic] used to treating such situations.”

[117] Neither Mr Agnew¹⁵⁶ nor Mr Caneris thought the conditions detailed or stringent. Mr Agnew simply said they were not stringent and Mr Caneris said that the conditions purporting to protect habitat or species of fauna were fairly cursory. He said they very much focused on retaining trees without any specification of which trees or whether any of them had any relevance or relationship with the fauna or habitat needed to be retained to ensure fauna population viability.

[118] Finally, of the four aspects of the Council’s treatment of the Peregian Springs rezoning application, the appellants refer to the lack of any material dispute amongst the flora and fauna experts that the

¹⁵² T10.45.

¹⁵³ T10.46.30-40.

¹⁵⁴ T9.53.10; Carter Report Exhibit 5 Appendix 11 p. 122; Appendix 17 p. 138; Exhibit 52 (Peregian Springs EIS Tab 2 Figure 2.3).

¹⁵⁵ Exhibit 1E Tab 123 p. 1078.

Peregrine Springs approval was an inadequate response to the environmental constraints of that land.¹⁵⁷ They point to Dr Olsen's evidence¹⁵⁸ that in 1996 the Peregrine Springs residential development would not have been acceptable from a flora perspective. I have just dealt with that evidence. As to fauna, they point to Mr Agnew's evidence that the Plan of Development was not an acceptable response to the conservation values of the land,¹⁵⁹ that the golf course component of the development was not a good, adequate, or acceptable response to protect the future of the rare and protected species on site,¹⁶⁰ and that the lakes forming part of the golf course component was generally an inadequate response to managing Acid frogs and Wallum froglets.¹⁶¹

Coolum Ridges

[119] Application was made on 9 October 1984 prior to the 1985 Strategic Plan for the rezoning of 182.02 ha from Rural B zoning to Residential A with the express desired use for the land described as 'progressive development of Urban community'. The application came before the Council on 13 December 1984 when it was refused for the following reasons:-¹⁶²

- (a) Contrary to the existing Town Planning Scheme and the proposed Town Planning Scheme including the new Strategic Plan which was sufficiently progressed along its legislative path to be taken into account;
- (b) Insufficient evidence of need;
- (c) Prematurity of proposal;
- (d) Incompatibility of proposal with Planning Strategy which foresaw orderly and efficient growth of urban areas.

[120] The applicant appealed on 1 February 1985. Some 20 months later, by letter dated 27 October 1987, the applicants' surveyors notified the Council that it was now desired to rezone the property to Rural Residential zone rather than Residential A. Subsequently, the appeal was resolved by order of the Local Government Court on 13 March 1991 whereby the appeal was allowed subject to compliance with a Rezoning Deed.¹⁶³ Clause 26(v) of the Rezoning Deed provided that prior to any Council

¹⁵⁶ T9.51.50-55; Mr Caneris T 7.20.40-60, 7.21 and 7.22.1-10.

¹⁵⁷ Appellants' Submissions [182].

¹⁵⁸ T10.46.20-25.

¹⁵⁹ T9.53.5-10.

¹⁶⁰ T9.53.30-35.

¹⁶¹ T9.53.40.

¹⁶² Exhibit 1F p. 1216.

¹⁶³ Exhibit 1F p. 1241; Rezoning Deed p. 1243.

approval for subdivision, the applicant at its own cost, would carry out a vegetation analysis.¹⁶⁴ Under cover of letter of 7 October 1992 the applicants' consultant forwarded an existing Vegetation Quality Assessment dated 30 September 1992, (a 3 page document)¹⁶⁵ finishing with the following:-

“Overview

Overall, only about a quarter of the site vegetation was rated as of high or good quality. This was due to the fact that much of the site, especially the higher ground has been previously disturbed to some extent.

The most significant areas of high quality vegetation are the Sedgeland and their fringing Melaleuca forests in the north-eastern corner of the site. Some excellent areas of Wallum heathlands also occur nearby.”

[121] On 12 April 1994 the Council resolved to approve the subdivision application.¹⁶⁶ By a letter dated 14 November 2002 the Environmental Protection Agency wrote to the Council enclosing a five page document outlining issues in relation to conservation values of the site.¹⁶⁷ Finally, in Exhibit 1F there is a Council Ordinary Meeting Agenda dated 23 February 2005 dealing with the applicants' proposal for a Master Planned Community in accordance with the Coolum Ridges Masterplan. That document records the following¹⁶⁸:-

“The subject Land includes a variety of slopes and natural features including bushland and wild habitats. Development of the subject Land for a residential community has required the applicant to address many issues, which include:-

- Protection and preservation of core habitat areas for rare, vulnerable and endangered species of fauna and flora on the site including Emu Mountain Shea-oak *Allocasuarina Emuina*, Bog Sedge (shown as *Schoenus Scrabopes*), Wallum-sedge Frog (*Litoria Olongburensis*), Wallum Froglet (*Crinia Tinnula*), Lewins Rail (*Rallus Pectoralis*),

¹⁶⁴ Exhibit 1F p. 1255.

¹⁶⁵ Exhibit 1F p. 1277.

¹⁶⁶ Exhibit 1F p. 1303.

¹⁶⁷ Exhibit 1F p. 1323.

¹⁶⁸ Exhibit 1F p. 1332.

Grey Headed Flying Fox (*Pteropus Pol Poliocephalus*), and Koalas and Koala Habitat;

- ...”

The proposal was approved by the Council .

[122] The appellants’ reliance on Coolum Ridges is pretty well a reflection of its reliance on Peregian Springs. Mr Schomburgk¹⁶⁹ considers that its relevance is the same as for Peregian Springs, namely, the physical nature of the land, its location and the timing of the approval relative to the Relevant Date. In his report, Mr Schomburgk, sets out a Table with helpful information in relation to the subject site, Peregian Springs and Coolum Ridges, which I reproduce:-

Site	Barns	Peregian Springs	Coolum Ridges
Total area	155 ha	335 ha	1828 ha
1985 Strategic Plan designation	Part Urban, Part Rural	Urban	Urban
Contains mapped GQAL/cane land*	Partly suitable (see expert’s report)	Approx 100 ha is suitable	Partly suitable
Total No. residential lots	Approx 1035	Approx 1600	Approx 1,000+
Other community facilities	Yes (proposed)	Yes – golf course, shops, retirement village	Yes – shops, school site

***Note:** GQAL and cane suitability taken from the Moreton Mill Long Term Sugar Viability Planning Study Report 1987 and Moreton Mill area – a sugarcane land suitability study 1982 (Capelin), and from Council reports on the Peregian Springs Development application

¹⁶⁹

Exhibit 2 p. 25 [4.4.3].

- [123] As with Peregian Springs, the appellants say that there is no material dispute among the flora and fauna experts to the proposition that the Coolum Ridges approval was an inadequate response to environmental constraints of the land.¹⁷⁰

Council's Response re Peregian Springs and Coolum Ridges

- [124] The Council's response to the appellants' reliance upon the Peregian Springs and Coolum Ridges' approvals starts from the fundamental premise that any application for rezoning and development in accordance with the Covey Plan would have had to be properly assessed and considered on its merits at the appropriate time. The Peregian Springs approval of 24 October 1989 was five and half years prior to the Relevant Date. Conditions governing environmental considerations and those considerations by the Council continued from date of approval to subdivisional approval allowing for the development to proceed. The Council says whatever criticism might be levelled at the Council for its inadequate approach to the 1989 Peregian Springs approval, to suggest that that approval would somehow have a strong influential effect on a decision in May 1996, is quite wrong.
- [125] The Coolum Ridges approval of the application made on 9 October 1984 was given by Court order on 13 March 1991. The Council says that both Peregian Springs and Coolum Ridges' approvals occurred prior to 1992 which, as has been mentioned, was a turning point in terms of the importance to attach to environmental considerations generally and flora and fauna specifically.¹⁷¹

Conclusion re Significance of Peregian Springs and Coolum Ridge Approvals

- [126] Whilst it is possible for certain aspects of each of these approvals to be pointed to, to support a particular position, in my view, in the mind of the purchaser when considering the prospects of procuring approval for the development, they would be of little comfort to him. I say that for several reasons. Firstly, the date to be focused on is 10 May 1996 and those approvals significantly pre-date that date. It is clear to me that certainly by the Relevant Date environmental considerations were given keener focus than at the time of those approvals. That is evidenced by the issues raised in the Norfolk Estates appeal to which I shall shortly refer.
- [127] Further, it is clear in the evidence of the environmental experts that, despite the existence of legislation focusing on environmental considerations, the attention given to such considerations by developers, their environmental advisors and Councils, did not immediately match the intent of the legislation. That has been a gradual process. But to my mind, one must be very wary of fixing the

¹⁷⁰ Appellants' Submissions [182], [183]; T9.58-62.

¹⁷¹ Council Submission [26].

Council, at the Relevant Date, with a state of mind operating in relation to its consideration and granting of earlier approvals. In hindsight those earlier decisions may be seen as sub-optimal having regard to considerations of environmental issues at the Relevant Date..

NORFOLK ESTATES APPLICATION

[128] This application was in relation to the Land plus adjoining land known as ‘the Cox land’ which is not relevant. The plan of development the subject of that application was not dissimilar to the Covey Plan. Norfolk Estates entered into a contract¹⁷² dated 3 November 1994 with the appellants for the purchase of the Land for \$9m. The deposit was \$10,000 and the contract was conditional upon rezoning and subdivisional approvals. Completion was due 30 days after approval and on settlement the Norfolk Estates was to pay \$1,790,000 with the balance purchase moneys of \$7,000,200 being provided by the appellants as vendor finance secured by a registered bill of mortgage over the Land for a period of five years. Norfolk Estates was to pay \$1m per year on the first, second, third and fourth anniversary of the date of execution of the mortgage with the balance of \$3,200,000 to be paid at the end of the fifth year of the loan. Interest was to be paid at the rate set by the Queensland Law Society for the purpose of the Standard Contract of Sale, but if all the above payments were made on time and the final balloon payment made within seven days of its due date, the interest rate would be nil. Apart from the \$10,000 deposit, Norfolk Estates was also to pay the agent’s commission on sale of \$225,450.

[129] On 13 January 1995 Norfolk Estates made an application for amendment to the Planning Scheme to include the Land comprising 188.09 ha from Rural A to Residential A. Included with that application was a flora and fauna study prepared by Dr Carter, who gave evidence in this matter, and one A Moran, dated January 1995.¹⁷³ The scope of the report was, “*to undertake biological investigations to assess flora and fauna communities ... and to identify any areas and plant/animal species of particular significance which would constrain development and the rezoning application.*”¹⁷⁴

[130] Paragraph 2.7 of the Report was in these terms:-¹⁷⁵

¹⁷² Exhibit 1D p. 528.

¹⁷³ Exhibit 1D p. 759.

¹⁷⁴ Exhibit 1D p. 760.

¹⁷⁵ Exhibit 1D p. 768.

“General Assessment

Noteworthy species because they are at, or near their southern distribution are:-

• Acacia Flavescens	• Acacia Penninervis Longiracamosa
• Acacia Hubberdina	• Carex Lorsfieldii
• Fimburstylas Pancythora	• Pilidost Egma Rhytispermum
• Eriostemon Mymporides	• Spp.Queensland

None of these species are rare or threatened and are represented in protected areas in south-east Queensland.

Livistonia Australis is a palm which is rare in Australia, but currently not endangered, though it is poorly represented in protected areas. The site is not prime habitat for this species. No plant identified on the site. However, the heathland and Melaleuca communities are becoming rare and those that remain are increasing invaded by weeds. Drainage and fertiliser are major contributors to modification of these communities. Attempts to retain and protect these communities is part of the subdivision process is recommended.”

[131] By letter dated 20 February 1995¹⁷⁶ the Department of Housing, Local Government and Planning advised the applicant that an environmental impact study was not required, “as the Land directly adjoins the road and not the National Park, it does not share a common boundary with the National Park.” The letter went on to say, however, that the Local Government may require the applicant to submit an EIS for the proposal which was not a designated development. By letter dated 13 March 1995¹⁷⁷ the Queensland Department of Environment and Heritage advised the Council:-

“In summary, the rezoning sought for this land is inconsistent with the Objectives of the draft Strategic Plan, Objectives of the draft Lake Weyba DCP, the draft NORSROC sub-region Structure Plan and would threaten the integrity of the nearby protected estate (Noosa National Park).”

¹⁷⁶ Exhibit 1D p. 827.

¹⁷⁷ Exhibit 1D p. 865.

Queensland Transport by letter dated 20 March 1995 objected to the rezoning.¹⁷⁸ There were 83 objections in all¹⁷⁹ including from Sunshine Coast Environmental Council Inc, Noosa Parks Association Inc, Save Today Our Parkland, Coolum Beach Progress and Ratepayers Association, Bribie Island Environmental Protection Association. The great majority raise environmental concerns.

- [132] On 2 August 1985, on the basis of a deemed refusal of the application, Norfolk Estates lodged an appeal,¹⁸⁰ Moreton Sugar Ltd and Noosa Shire Council in the State of Queensland all elected to become respondents, although Moreton Sugar Ltd withdrew on 12 October 1995. The appeal was finally withdrawn on 13 October 1997.

Council Disputed Issues in Norfolk Estates Appeal

- [133] The relevant issues disclosed by the Council's Notice of Disputed Issues¹⁸¹ dated 11 October 1995, some eight months before the Relevant Date, shows that the Council resisted the Rezoning and Development Application on the following grounds, *inter alia*:-

- (a) that the proposed rezoning and development was contrary to the provisions of the 1996 draft Strategic Plan;
- (b) that the proposed rezoning would have an unacceptable adverse impact on the environment;
- (c) that the proposed rezoning was contrary to State Planning Policy No. 1 and would involve an unacceptable loss of valuable agricultural land;
- (d) there was no need for the proposed rezoning as the likely future residential development could be provided for in areas designated for such purposes on the respondent's draft Strategic Plan;
- (e) the proposed rezoning was premature in that:-

¹⁷⁸ Exhibit 1D p. 868.

¹⁷⁹ Exhibit 46.

¹⁸⁰ Exhibit 1D p. 879.

¹⁸¹ Exhibit 13.

- (i) the subject land was not included in the Council's water headworks area and the land could not reasonably be provided with reticulated water without expense to the Council and without compromising the Council's future planning for water reticulation within the Shire;
- (ii) the land was outside the respondent's sewerage headworks area and could not reasonably be provided with reticulated sewerage without expense to the Council and without compromising its planning for sewerage reticulation within the Shire;
- (iii) the proposed rezoning would create a need for increased facilities which could only be provided at the Council's expense;
- (iv) the proposed development did not represent an orderly development of land in that it was not sequential thereby introducing unnecessary costs and expense with respect to the extension of services and was at tantamount to "leap-frogging"; and
- (v) the existing road network was insufficient to cater for the proposed development.

State of Queensland Disputed Issues

[134] The Notice of Disputed Issues relied upon by the State of Queensland¹⁸² dated 10 November 1995 also relied upon, *inter alia*, transport issues, environmental matters aimed at the avoidance of destruction of vegetation with consequential elimination of many fauna species, and the issue of prematurity, a reference to the same challenges to the provision of water and sewerage services as raised by the Council.

[135] The appellants point to the fact that the Council did not, when identifying disputed issues, identify a conflict with the 1985 Strategic Plan which it could have done. They say the Council deliberately elected not to raise that issue with the result that the omission works very strongly against the

¹⁸² Exhibit 14.

Council's arguments as to why it would have applied the provisions of the 1985 Strategic Plan at the Relevant Date to reject the proposed development.¹⁸³

- [136] Of course, whereas the draft 1996 Strategic Plan must be ignored in these compensation proceedings, it would have been relevant to an application for the proposed development before the introduction of the new Strategic Plan. In that respect, the Council referred to comments by Quirk DCJ in *MJ & ME Creed v Caboolture Shire Council*¹⁸⁴ where His Honour said:-

“It is well known, that where a Planning Authority has in preparation a draft planning instrument which is intended to, and in due course may well, become part of its Town Planning Scheme, the court should be very careful in making any decision which will ‘cut across’ these planning strategies. This is particularly so when the draft planning instrument has reached the stage of having been exhibited publicly.

At the same time it would seem to me that additional and important considerations are introduced when, in respect of a particular piece of land and a particular proposal, the draft instrument is squarely in conflict with the town planning scheme and more particularly its strategic plan or development control plan.”

It will be recalled that the 1996 Strategic Plan was adopted by the Council on 13 April 1995 and gazetted on 10 May 1996.¹⁸⁵

- [137] The Council's response to the criticism of non-reliance upon the 1985 Strategic Plan is that so far as the Land is concerned, there is no material difference with respect to its prospects of development between the 1985 Strategic Plan and the draft 1996 Strategic Plan, and that it was entirely appropriate to rely upon the draft proposed Strategic Plan rather than the 1985 Plan, particularly given that the whole process of development, public consultation, public exhibition of the draft, and adoption by the Council, had been completed.

Conclusion re Norfolk Estate Appeal

- [138] I consider that the Norfolk Estate appeal would have been an influential consideration operating upon the mind of the purchaser in determining the prospects of approval of the subject development. It

¹⁸³ Appellants' Submissions [364]-[365].

¹⁸⁴ [1994] QPLR 97 at 98.

¹⁸⁵ Exhibit 1C p. 400.

comes closely in time to the Relevant Date and, to my mind the focus on environmental issues reflected the heightened sensitivity of the Council, State authorities, and the community, more closely aligning the consideration of such issues with the clear intent of the relevant legislation then in force. By then, I am satisfied that what may be described as a slightly blurred focus on environmental issues in some quarters in previous years had been sharpened to place those issues at the forefront of applications of the type under consideration, certainly so far as the parties to the Norfolk Estates appeal and the relevant community were concerned. I consider that the purchaser would have entertained grave concerns as to the prospects of approval of the Covey development given the circumstances of the Norfolk Estates' application and appeal.

GOOD QUALITY AGRICULTURAL LAND

[139] The Council argues that the proposed development at the Relevant Date would have involved an unacceptable loss of 'good quality agricultural land' without any overriding need in terms of community benefit (see paragraph No.145) which would have mitigated against any decision to grant the rezoning sought. It relies upon the 1992 amendment to the PEA introducing s 4.4(3A) which took effect from 23 July 1992 and required thereafter that a Local Government must have regard to relevant State Planning Policies in making its decision on an application for rezoning. Some six months later in 18 December 1992 State Planning Policy 1/92 – Development and the Conservation of Agricultural Land (SPP1/92) was introduced.¹⁸⁶ Subsequently, in January 1993 Planning Guidelines: the Identification of Good Quality Agricultural Land was introduced and was to be read in conjunction with SPP1/92.¹⁸⁷

SPP1/92

[140] This opens with a position statement in these terms:-

“The Queensland Government considers that good quality Agricultural land is a finite National and State resource that must be conserved and managed for the longer term. As a general aim, the exercise of planning powers should be used to protect such land from those developments that lead to its alienation or diminished productivity.”

The following provisions of SPP1/92 relied upon by the Council are set out in Schedule “A” to this judgment; paragraphs 3.3, 4.1, 4.4, 4.5, 4.6, 4.8 and 4.9 and Policy Principles.

¹⁸⁶ Exhibit 1C Tab 40 p. 474.

Planning Guidelines

- [141] The following paragraphs of the Guidelines relied upon by Council are in the Schedule “B”:- 2.1, 2.2, 2.3, 2.4, 2.5, 4.1, 4.4, 4.5, 4.9, 4.12, 4.16, 5.1, 5.2, 5.7 and 5.8.
- [142] As can be seen from paragraph 2.5 the definition of what constituted ‘good quality agricultural land’ in a particular area was said to be the responsibility of the Department of Primary Industries (DPI) after consultation with others. Paragraph 5.4 refers to identified mapping units of ‘good quality agricultural land’ by reference to a study by M.A.Capelin.¹⁸⁸ That study shows land within the Maroochy Shire falling within Classes 1 to 6¹⁸⁹ which Capelin recommended be afforded immediate protection from development pressures through town planned zoning and subdivisional control.¹⁹⁰
- [143] Against the background of the 1985 Planning Scheme and the SPP1/92 and its Guidelines, Council points to the intent of the Rural A zone in which all the land was located under the 1985 Plan, namely, to identify and protect significant areas for a wide range of rural activities,¹⁹¹ and that the objective for the Rural Areas PDLU in which part of the Land was included was expressed to protect the Shire’s prime agricultural land including valuable cane land from unnecessary and undesirable intrusions by other land use activities.
- [144] The Council points to Policy Principle No. 1 which provides that ‘good quality agricultural land’ should not be built on unless there is an overriding need for development in terms of public benefit and no other site is suitable for the particular purpose.¹⁹² It says that once such land is subdivided and built upon, its return to agriculture is seldom practicable. It follows, the Council says, that the focus for anyone seeking to develop such land is to establish three things, namely, that there is an overriding need for the development, that that need is one which accords with the public benefit, and finally, that there is no other site suitable for the particular purpose.

Appellants’ Response re Good Quality Agricultural Land

- [145] The appellants, firstly, make the point that State Planning Policy 1/1992 retains its status as a policy notwithstanding the introduction of s 4.4(3A) of the PEA and, secondly, that there is authority for the proposition that a more flexible approach is required in the application of a policy than is required in

¹⁸⁷ Exhibit 1C Tab 41 p. 481 [1.3].

¹⁸⁸ Exhibit 55 Horticulture Land Suitability Study Sunshine Coast south-east Queensland M A Capelin 1987.

¹⁸⁹ Exhibit 1C p. 505.

¹⁹⁰ Exhibit 55 p. 83.

¹⁹¹ Exhibit C Tab 37 p. 341.

¹⁹² SPP1/92 [4.4].

respect of the provisions of the Town Planning Scheme or other statutory town planning provisions.¹⁹³

[146] The next point made by the appellants is that the Land is not ‘good quality agricultural land’ if one properly interprets the definition of that term in the Planning Guidelines which is in these terms:-

“Good quality agricultural land is land which is capable of sustainable use for agriculture, with a reasonable level of input, and without causing degradation of land or other natural resources. ...”

[147] It can be seen that that definition has three elements:-

- (a) that the land is capable of sustainable use for agriculture;
- (b) that the sustainable use for agriculture can be achieved with a reasonable level of input; and
- (c) that the sustainable use for agriculture can be achieved without causing degradation of land or other natural resources.

[148] The appellants focus on the latter two elements to argue that the Land is not ‘good quality agricultural land’.

[149] Finally, the appellants point to paragraph 4.9 of SPP1/92 and paragraphs 4.4 and 4.5 of the Planning Guidelines. Paragraph 4.9 premises the Policy on the local authorities not being exposed to financial compensation so that any existing commitments stand, and down zoning is not being advocated by the Policy. The effect of paragraphs 4.4 and 4.5 of the Guidelines is that, because of compensation implications which could arise in relation to proposals on sites already committed, consideration to setting aside such commitment should only be given in exceptional cases because of the need to retain a particular site in agricultural use.

[150] Paragraph 4.2 of the Guidelines to which paragraphs 4.4 and 4.5 refer, speak of land being “effectively committed” for development or subdivision by the Planning Scheme in circumstances where, *inter alia*, “an unequivocal inclusion of the site in an area depicted for non-rural uses in a strategic plan or DCP, where development approval is not contingent upon consideration upon the agricultural land quality ...”

¹⁹³ *Macosca v Council of the Shire of Emerald* [1996] QPELR 114 at 116; *Norris Clarke & O’Brien Pty Ltd v Brisbane City Council* [1996] QPELR 262 at 264.

- [151] The appellants argue that the designation of the substantial part of the Land in the Urban Areas designation under the 1985 Strategic Plan constitutes just such an “*unequivocal inclusion of that part of the land for non-rural uses*”. They further rely upon and refer to “contiguous areas” in Objective 1(a) of the Urban Areas PDLU under the 1985 Strategic Plan to argue that the Land is also the subject of an “unequivocal inclusion” in an area depicted for non-rural uses. It follows, on that argument, that all the Land is committed for non-rural uses under the 1985 Strategic Plan so that the appellants’ proposals for subdivision and development should normally be considered on their planning merits without reference to agricultural issues (Planning Guideline 4.4), and should only be rejected in exceptional cases where there is a need to retain the land in agricultural use (paragraph 4.5 Planning Guidelines).
- [152] As to the second limb of the first dot point in paragraph 4.2 of the Planning Guidelines, no argument was advanced that once, relevantly, unequivocally included in the non-rural uses area, development approval was contingent upon consideration of agricultural land quality. I was not referred to and can find no provision to that effect and am satisfied that, absent the application of the SPP1/92, development approval for land in the Urban Areas designation was not contingent upon consideration of agricultural land quality. That is not to say the Council would be prevented from considering the existence of such Land in determining an application on its merits, but there is no compulsion upon it to do so.

Is the Land Committed under State Planning Policy 1/92?

- [153] The authorities to which I have been referred go to the weight to be given to such a Policy, when applicable, when balancing all considerations, including the Policy, relevant to the issue being addressed. This issue is of a threshold nature. The answer to the question posed, namely, whether there is a relevant commitment bears on the extent of the consideration to be given to the Policy, in terms of s 4.4(3A) of PEA. If the Land is already committed, then any application for rezoning and development for Urban purposes should normally be considered without reference to agricultural issues in terms of paragraph 4.4 of the Planning Guidelines and rejected unless an exceptional case is demonstrated within paragraph 4.5 of the Guidelines.
- [154] The starting point is to focus on the wording of paragraph 4.2 of the Guidelines which defines the commitment. It provides:-

“There will be instances where the subject Land is effectively committed for development or subdivision by the Planning Scheme. Such a commitment would comprise the following:

- An unequivocal inclusion of the site in an area depicted for non-rural (including rural residential) uses in a strategic plan or DCP, where development approval is not contingent upon consideration upon the agricultural land quality; or
- ...
- ...”

[155] It is readily apparent that it is the inclusion of the Land in an area depicted for non-rural uses in a strategic plan which is to be unequivocal rather than the non-rural use itself. That is to say, the focus is on the inclusion of the Land in the area depicted for non-rural uses in a strategic plan and not on the entitlement to use the Land as included. In this case, the Objective 1(d) of the Urban Areas PDLU in the 1985 Strategic Plan makes it clear there is no unequivocal entitlement to develop land for urban purposes simply by virtue of that designation.

[156] The appellants rely on *Palmwoods Ratepayers Association Inc v Maroochy Shire Council and Anor*¹⁹⁴, a decision of Skoien SJDC. His Honour was there dealing also with SPP1/92. The case involved an application to rezone land from Rural B to Residential A. The land was included in the Urban designation of the 1996 Strategic Plan. Dealing with paragraph 4.2 above His Honour said¹⁹⁵:-

“It seems to me beyond argument that the site is unequivocally committed for non-rural use in a strategic plan. Not only is it within the Urban designation of the 1996 Strategic Plan but it is obviously so included on a cadastral basis. If the designation were to be able to be seen to be merely indicative of a general area there could be room for dispute but the cadastral inclusion of this site, to my mind shows that this particular site has been identified and specified. It is specified as suitable for residential development within the life of the plan. That is as unequivocal as a strategic plan can get.”

¹⁹⁴ [1997] QPELR 331.

¹⁹⁵ [1997] QPELR 331 at 335.

- [157] It is clear that His Honour was influenced by the fact that the inclusion of the land in the Urban designation had a cadastral base. I am satisfied that the present Land has the same. I say that, having considered the contrary view taken by the Council¹⁹⁶ at the hearing. Part B of the Strategic Plan tendered as part of Exhibit 1C was found to be incorrect in the section dealing with urban areas¹⁹⁷ in that it referred to cadastral maps giving definition to the urban areas in the Urban Areas PDLU. That was corrected and Exhibit 62, the correct copy of Part B, was substituted.
- [158] Consistent with that correction, Mr Schomburgk's report¹⁹⁸ was similarly amended to delete reference to that incorrect Part B. But the assertion by the appellants as to the cadastral basis of the Urban Area PDLU was not confined to Part B or that part of Mr Schomburgk's report referred to. Mr Schomburgk gave other evidence¹⁹⁹ which satisfies me that the subject area does have a cadastral base.
- [159] Just as His Honour Skoien SJDC was satisfied in *Palmwoods*²⁰⁰, I am satisfied that that part of the Land in the Urban Areas designation was, at the Relevant Date, committed for non-rural development in that it was the subject of an unequivocal inclusion in an area depicted for non-rural uses in the 1985 Strategic Plan.
- [160] As to the balance area in the Rural Areas PDLU, the appellants argue that as it is contiguous to the Urban Areas PDLU land, the whole site is effectively committed. I do not agree. There is no commitment in relation to the Rural Areas PDLU land. The result is that regard must be had to the SPP1/92 in relation to the Rural Areas PDLU land.
- [161] The result of my finding as to that part of the Land within the Urban Area PDLU is that, in terms of Planning Guideline 4.5 any development proposal should be rejected only in exceptional circumstances. I consider that Objective 1(d) of the Urban Areas PDLU of the 1985 Strategic Plan provides such an exceptional circumstance. It provides that the fact of inclusion of land within that designation does not mean that it will be rezoned and developed for urban purposes. If Planning Guideline 4.5 was to be interpreted without regard to the exception provided by Objective 1(d), the former would negate the operation of the latter. As the appellants argued, as outlined above, SPP1/92 retains its status as a policy notwithstanding s 4.4(3A) of PEA and that in applying such policies a more flexible approach is required than in respect of planning scheme provisions. A policy is not to be interpreted so as to defeat a provision of a Strategic Plan.

¹⁹⁶ Council Reply Submissions [134].

¹⁹⁷ Exhibit 1C p. 304.

¹⁹⁸ Exhibit 2 [3.2.2].

¹⁹⁹ Exhibit 66; T14.11-13.

[162] Turning now to Planning Guideline 4.4 which provides:-

“Any proposals on sites ‘committed’ as defined above should normally be considered on their planning merits without reference to the agricultural issues. In these circumstances, an agricultural land quality assessment would clearly be unnecessary.”

[163] I do not consider the subject hypothetical development application under consideration to be normal for the purposes of Planning Guideline 4.4 so as to render the consideration of agriculture issues as unnecessary. The development application covers both urban and rural designated land. Given my finding that the Land designated Rural was not committed within SPP1/92, it would, to my mind, be incorrect to approach the application on the basis that agricultural issues were to be considered in relation to only part of the Land (rural but not urban). The case was not run on that basis. The experts did not prepare their reports on that basis, but rather by reference to the whole of the Land. For those reasons I consider that the issue of Good Quality Agricultural Land is properly to be considered.

Evidence re Good Quality Agricultural Land

[164] The appellants called Dr Gilbert,²⁰¹ and the Council called Mr Sutherland²⁰² and Dr Matthew²⁰³. On any view of the matter there are widely diverging views of these three experts in the areas of soils, soil mapping erosion, and water resources. Before turning to the evidence of each of those experts I should mention that the Council also relies upon two letters from the DPI dated 6 September 1995²⁰⁴ and 24 January 1996²⁰⁵ respectively, both before the Relevant Date. They are addressed to the Council and relate to the Norfolk Estates rezoning and development applications so refer to both the Barns and Cox land.

[165] The first letter of 6 September 1995 states that the land has been mapped in the 1979 Capelin Report entitled, ‘Moreton Mill Area: A Sugarcane Land Suitability Study’ and confirms that the land has been identified as predominantly Class 3 ‘Suitable for Sugarcane with Moderate Restrictions’ and minor areas of Class 5 ‘Land which is Unsuitable for Long Term Production’. The letter concludes by stating that the Land is predominantly considered suitable for agriculture so that any rezoning application should be dealt with in accordance with State Planning Policy 1/92.

²⁰⁰ *Palmwoods Ratepayers Association Inc v Maroochy Shire Council and Anor* [1997] QPELR 331.

²⁰¹ Report Exhibit 7.

²⁰² Report Exhibit 26.

²⁰³ Report Exhibit 27.

²⁰⁴ Exhibit 1D Tab 68 p.882.

²⁰⁵ Exhibit 93.

[166] The second letter of 24 January 1996 was a follow up to the 6 September 1995 letter subsequent to detailed discussions with the applicants' consultants after receipt of their report. It contained two paragraphs of significance:-

“In general it appears that the conservation considerations provide an overriding justification for the land's protection rather than the site's suitability as an agricultural resource. However, should the site be cleared the areas of the property outlined above as Good Quality Agricultural Land (GQAL) would need to be reconsidered for protection under State Planning Policy 1/92.”

Further on, is the concluding paragraph:-

“In summary, while parts (2/5) of the subject land ie Lot 31 on RP 858565 are suitable for crop production, the subject land is not considered to be Good Quality Agricultural Land under State Planning Policy 1/92 due to its overriding conservation significance. ...”

Dr Gilbert - Appellants

[167] Dr Gilbert was the consultant to Norfolk Estates in its rezoning and development application, and he is the consultant referred to above with whom discussions were had prior to the DPI letter to the Council of 24 January 1996. He had prepared two previous assessments of the land: one, a preliminary report of 8 December 1994²⁰⁶ in which he recommended a more detailed land suitability assessment to delineate the areas of GQAL; his subsequent assessment of 16 January 1995 identified three land types on a map forming part of a report. They were:-

(a) Land -Type 1 – Good Quality Agricultural Land Class B

This was an area of 30 ha scattered across the southern and western sections of the Northern Severance. There were also sections in the southern severance western triangle. He considered this land to be limited arable land owing to its small areas and scattered distribution across the property. Its slope and poor moisture ruled out sugarcane production, though he said tree crops such as mango could be

²⁰⁶ Exhibit 7 Appendix 2 p. 22.

grown with soil conservation measures, heavy fertilisation, and supplementary irrigation. Though the availability of good quality irrigation water was unknown;

(b) **Land - Type 2**

This was a 99 ha area being the balance of the northern severance less the Type 1 and a small portion of Type 3 Land. He said the land was poorly drained and the slopes highly variable from 1% - 12% making the land suitable only for pastoral use. Having said that, he said beef cattle production with high fertiliser inputs would probably be uneconomic as the poor drainage during wet season would restrict heavy stocking rates;

(c) **Land – Type 3**

This was a 26 ha area covering the substantial part of the northern Severance and limited parts of the southern severance. He said this land contained depressions with a shallow water table, poor drainage and was subject to flooding. The soils were highly infertile which made the land unsuitable for agricultural use.

Dr Gilbert concluded that the majority of the land was not considered ‘Good Quality Agricultural Land’ and that there was no commercial agricultural production on similar land types in the surrounding area.

Gilbert Report 3 April 2009

[168] In his report tendered in this hearing²⁰⁷ Dr Gilbert confirmed his agreement with his 1995 assessment as outlined above, in these words:-

- “land of the hillcrests and upper slopes can be regarded as Good Quality Agricultural Land (GQAL) if irrigation was available. In 1995 irrigation infrastructure were unavailable on the Barns property and the surrounding areas. To the best of my knowledge it is still the case.
- Land on some mid-slopes is of limited suitability due to steepness and lack of irrigation.

²⁰⁷ Exhibit 7 p. 1.

- Land on lower landscape slopes are of limited suitability due to constraints of impeded drainage on the Kurosols soils, low nutrient availability, complexity, and erosion hazard.
- Land in the low lying areas is not GQAL due to wetness, flowing and low nutrient availability.”

Mr Sutherland – Council

[169] Mr Sutherland undertook a detailed soil survey of the site. Mr Sutherland similarly undertook an assessment of the land and concluded in his report²⁰⁸ that:-

- (a) Dr Gilbert’s soil survey was insufficient and could not be relied upon to make a confident appraisal of the site soils and their distribution. A very high intensity soil survey²⁰⁹ completed by Mr Sutherland identified on site a large area of an additional important agricultural soil type, Dermosols, not identified by Dr Gilbert;
- (b) The soil mapping and additional physio-chemical analysis completed by him did not support Dr Gilbert’s assertion that the site soils present an “Extreme Erosion Hazard”;²¹⁰
- (c) Top soils were stable though some areas of sub-soil could disperse if exposed and subjected to repeated unmanaged cultivation and rainfall and/or gully erosion which would be unlikely. The site soils could be satisfactorily managed under intense cultivation with acceptable erosion losses;
- (d) Water resources would not limit crop production on the site because of:-
 - (i) a sufficient surplus of rainfall over evapotranspiration;
 - (ii) near surface groundwater within the extensive areas of Aydrosols across the site;
 - (iii) a potential deep groundwater resource in underlying sandstone; and

²⁰⁸ Exhibit 26 p. 38.

²⁰⁹ Exhibit 26 Appendix 4 p. 93.

- (iv) four possible dam sites.
- (e) The above conclusions are the same as they would have been in 1996 and are relevant to the widely different determinations of GQAL on site estimated by Dr Gilbert (29%) and Dr Matthew (68%).

Dr Gilbert/Mr Sutherland Joint Written Statement

[170] Dr Gilbert and Mr Sutherland met to discuss issues separating them on April 17 2008, May 29 2008, and February 9 2009, culminating in a joint written statement of 10 March 2009.²¹¹ At the risk of repetition of some of the matters already dealt with, the following are some of the matters on which they disagreed:-

- (a) as to the slopes across the property of greater than 10% asserted by Dr Gilbert, Mr Sutherland said that 97% of the site had slopes of less than 10% and the site soils were not as erosive as contemplated by Dr Gilbert;
- (b) Dr Gilbert's view was that cane production on the land was, at best, marginal without supplementary irrigation because of the poor soils and the high fertiliser requirements. He went on to say that fertilisation on sandy surfaced soils with high rates of phosphatic fertiliser would have the potential to impact on surface water quality downstream. Mr Sutherland considered that stormwater and/or drainage could be captured for re-use on the site and any downstream water quality issues would be addressed by compliance with the Environmental Protection Act;
- (c) Dr Gilbert said there was no irrigation infrastructure on the site in 1994, no groundwater bores in the area, and no commercial use of dams and groundwater for irrigation purposes in the area to the south and south-west of Lake Weyba. As to the four dams contemplated by Mr Sutherland:-
 - (i) those contemplated in each of the catchments could impact on the water table and risk flooding of two small freehold properties immediately to the north-east of the subject property;

²¹⁰ Dr Gilbert Exhibit 7 p. 153 [13].

- (ii) the contours in three of the four potential dam sites suggest a very long dam wall would be required to achieve sufficient storage capacity which walls would be expensive to construct and to maintain;
- (iii) the potential dam sites were so flat that only shallow water storage could be built with resulting high surface area and evaporative losses;
- (iv) the four dams could impact on the wetland to the south of the property and threaten safety and stability of Emu Mountain Road in the event of dam failure; and
- (v) it would also impact on the stability of the lower slopes on the property due to an increased water table.

In response to those matters, Mr Sutherland said the dams could be constructed with a maximum wall of 4 m in height which could be either excavated or raised or both. He considered there were clearly sites on the Land available for in-mine gully dams, hillside storage, and ring tanks all of which were used as a matter of standard practice for agricultural and horticultural enterprises.

- (d) Dr Gilbert considered that the Emu Mountain Road through the Barns' property separating the Northern and Southern Severances would make it very difficult to manage the property, particularly the Southern Severance. He said road access would be severely impeded and that access to the southern and western sections of the property for agricultural purposes would be severely restricted if not impossible;
- (e) Dr Gilbert was of the view that the highly variable slopes between 15% and 12% combined with poor internal drainage presented as an extreme erosion hazard. Mr

Sutherland believed that erosion can be controlled on-site with relative ease using such techniques as cultivation on the contour, mulching, growing tree crops, inter-row cropping, contour banks and the use of a sheeps-foot roller. He said his modelled soil loss represented very low rates of soil erosion;

- (f) Mr Sutherland disagreed with Dr Gilbert's view that when sandy surfaced soils with high sub-soil sodicity are cleared for agriculture there is an increased tendency to generate salinity in adjacent low-lying areas.

Dr Matthew – Council

[171] Dr Matthew provided a report containing his assessment of the Land as Good Quality Agricultural Land.²¹² His conclusions were:-

- (a) Dr Gilbert's assessment in 1995 does not correctly assess the presence and distribution of GQAL on the subject site;
- (b) He disagrees with Dr Gilbert's opinion upon the agricultural suitability of the site. He says that Dr Gilbert misinterpreted the Guideline, suitable assessment criteria, and assessment procedure in reaching his conclusions, and that his assessments of soil, land form, and water resources of the site were insufficient to fully inform an appraisal of GQAL;²¹³
- (c) His assessment of the GQAL was done in accordance with SPP1/92 and the relevant Guidelines (Capelin 1987) resulting in a finding that 68% of the site or 105 ha is GQAL;
- (d) Given the site characteristics, the use of fertilisers and the potential for water supply, the site represents an area of land that has a high probability of sustaining an agricultural enterprise; and
- (e) In light of the above conclusions a subdivision of the land would be contrary to State Planning Policy 1 of 1992 and result in the unacceptable loss of valuable agricultural land.

²¹² Exhibit 27.

²¹³ For details of see Exhibit 27 [4.3] p. 29.

[172] As with Mr Sutherland, Dr Gilbert conferred with Dr Matthew and set out below matters which they could not agree upon:-

- (a) In Dr Gilbert's view the topographic complexity of the site having areas of GQAL separated by areas of poorly drained and often flood prone non-GQAL land which severely restrict management of agriculture on the property. Further, the Emu Mountain Road bisection of the property would make management of the small areas of the GQAL land to the south and south-west of that Road very difficult. According to Dr Matthew the complexity of the site is not such as to disqualify it from being GQAL. As to the bisection of the property by Emu Mountain Road, he considers that although the areas south of that Road are small, by broader agricultural standards they are workable sizes for horticulture. He says further that although Emu Mountain Road is prohibited from use by pedestrians and tractors there is sufficient room beside the roadway and within the property to provide access to the GQAL from Murdering Creek Road or the electricity easement;
- (b) Dr Gilbert revised his 1994 assessment of the GQAL from 19% (30 ha) of the total property to 29% (45 ha) and disagrees with Dr Matthew's estimate of 75% (116 ha) of GQAL. In the light of the discussions with Dr Gilbert, Dr Matthew revised his assessment from 75% to 68% or 104 ha. He prepared a useful drawing²¹⁴ setting out his understanding of the essential differences and similarities between him and Dr Gilbert as to the GQAL land area. That shows what he sees as undisputed areas of GQAL within that area of land both in the Northern and Southern Severance which was within the Rural Areas PDLU designation under the 1985 Strategic Plan. The balance of those undisputed areas of GQAL are in the Northern Severance within the land situated within the Urban Areas PDLU designation under the 1985 Plan;
- (c) Dr Matthew does not agree with Dr Gilbert that the combined strategy of clearing for agriculture and damming the catchments would result in a marked rise in the water table in low lying areas and lower slopes, thus further reducing the suitability for agriculture on the Kurosol soils in the lower slope landscape. He

²¹⁴ Exhibit 27 p. 54.

believes that a heightened water table resulting from clearing would only impact on the potential dam sites.

It is noteworthy that the undisputed GQAL areas²¹⁵ fall to a large extent within the dryland areas identified by Dr Olsen²¹⁶ being the only areas which he and Dr Carter agree could accommodate some development.²¹⁷

- [173] Some criticism was levelled at Dr Matthew that his approach to the issue of GQAL ignored practical aspects of farm management and the cost and viability of the provision of inputs referred to in the Planning Guidelines 2.1.²¹⁸ I think the criticism was unjustified. Paragraph 2.1 describes ‘good quality agricultural land’ as, *“land which capable of sustainable use for agriculture, with a reasonable level of inputs, and without causing degradation of land or other natural resources. ...”*

Its focus is on the qualities of the Land and whether it is capable of use for agriculture which, relevantly, includes crop or animal production. If so, the next consideration is whether that capability of agricultural use can be sustained with a reasonable level of inputs and without degradation of land or other natural resources. In other words, what reasonable additional level of ingredients (inputs) are required to elevate it from land capable of agricultural use to land capable of sustainable agricultural use without threat of degradation of the land quality? Obvious inputs would be fertilisers and water so long as they did not cause degradation of the land or other natural resources.

- [174] Paragraph 2.2 then provides that four classes of agricultural land have been defined for Queensland, Classes A, B, C and D. Of those four classes only Class A and Class C qualify as ‘good quality agricultural land’. Paragraph 2.3 then explains how the classes are determined, namely, by an assessment of the agricultural suitability of the land for specified agricultural purposes. That suitability is a rating of the ability of the land to maintain a sustainable level of productivity. Factors used to assess that suitability are the soil, topographic and climatic limitations which determine sustainable productivity, but economic factors such as the size of the production units are expressly excluded as being irrelevant to the quality of the land resource.

- [175] In my view, paragraphs 2.1 to 2.4 have a unifying theme and that is the identification and classification of land by reference to its qualities. To my mind, the cost and viability of the provision of the inputs referred to in paragraph 2.1 are not matters relevant to the determination of whether the land is GQAL. The words “reasonable level” qualifying “inputs” in paragraph 2.1 refer to the nature

²¹⁵ Exhibit 1B p. 222.

²¹⁶ Exhibit 19.

²¹⁷ [99(f)]

and extent of any input necessary to bring the land up to the requisite standard rather than the cost of so doing.

Conclusion re Good Quality Agricultural Land

- [176] Given the significant undisputed area of GQAL and the extent of it within the dryland community areas, I consider that the purchaser would be concerned that this issue could adversely impact on the prospect of obtaining development approval.
- [177] On the basis that agricultural issues are to be considered by the Council in considering the development application, I consider that the purchaser would be concerned that the opinions advanced by Mr Sutherland and Dr Matthew to the extent that they differed from those of Dr Gilbert, would be relied upon by Council to adversely impact on the prospect of obtaining development approval.

PLANNING NEED

- [178] PEA s 4.4(3)(b) provides that in assessing an application to amend the Planning Scheme the need for the proposed Planning Scheme amendment is to be considered with all the other matters in that section in assessing the application. That factor is but one of the various matters to be considered and does not have priority over any other or, as has been said, “*should not occupy pride of place among the many considerations relevant to a rezoning application.*”²¹⁹ Given that it is but one consideration, the absence of need is not necessarily fatal to an application,²²⁰ and is a relative concept which will receive greater or lesser weight in a particular case depending on all the circumstances requiring consideration of the planning authority.²²¹
- [179] It has been said that need does not mean a pressing need, critical need, widespread desire or anything of that nature, but that a thing is needed if its provision, taking all things into account, improves the physical well being of the community.²²² Likewise, it has been said that need is not the same as demand and that it is the community need that is to be considered. There may well be demand for a particular proposal, but on an objective view, no community need in the planning sense can be

²¹⁸ Appellants’ Submissions [284] and [285].

²¹⁹ *Indooroopilly Golf Club v Brisbane City Council* [1982] QPLR 13 at p. 34; *Moistbrook Pty Ltd v Miriamvale Shire Council* [2003] QPELR 229 at 232.

²²⁰ *Palmwoods Residents and Ratepayers Association Inc v Maroochy Shire Council and Anor* [1997] QPELR 331 at 335.

²²¹ *Indooroopilly Golf club v Brisbane City Council* supra p. 34.

²²² *Cutprice Stores Retailers & Ors v Caboolture Shire Council* [1984] QPLR 126 at 131. (That was a shopping centre case.)

shown.²²³ On that issue, however, Carter DCJ, as he then was in *Indooroopilly Golf Club* exemplified the difficulty in separating the concepts in some circumstances. His Honour was considering a rezoning application and said²²⁴:-

“It was submitted that “need” should not be equated with “want” or “desire”. The question however is not one of mere semantics. If it can be shown, as indeed it has been in this case, that there is a demand, say, for residential allotments of a particular quality which is reflected in their ready acquisition by buyers, that surely is of some relevance in assessing the “need” for the rezoning which will make possible that type of residential development.”

Appellants’ Argument re Planning Need

[180] The appellants say that the issue of need is of little significance for two reasons. Firstly, the 1985 Plan was implemented against the background of projected population contained in Part B²²⁵ and the need to accommodate that growth in designated areas. Secondly, they point to the designation of the Land in the Urban Area PDLU as reflecting recognition by the Council of need for urban development in that area. As to that part of the Land in the Rural Area PDLU designation, they rely upon Objective 1(a) in the Urban Areas PDLU²²⁶ which provides that areas contiguous to areas in the Urban Area designation may be considered for urban use. That argument is supported by the opinion expressed by Mr Schomburgk.²²⁷ He said the designation of the majority of the Land in the Urban designation established the direction of the land uses structure for the area, and that the Peregrine Springs and Coolumb Ridges approvals meant to him that the Land was merely a logical extension of that established direction for urban development in the area. Finally, the appellants say that even if need was found not to be established, that would not be fatal to any application to rezone the Land for residential purposes because of its designation and, the fact that the proposed development represented an orderly development.

Council’s Argument re Planning Need

[181] Mr Buckley gave evidence for the Council on this issue. He expressed the view that there was little prospect of a rezoning approval because of the absence of planning need.²²⁸ He took issue with Mr

²²³ *Arksmead v Council of the City of Gold Coast* [1991] 322 at 330.

²²⁴ [1982] QPLR 13 at 35 Line G.

²²⁵ Exhibit 62 p. 6.

²²⁶ Exhibit 1C p. 362.

²²⁷ Exhibit 2 [4.2.8] and [4.2.9].

²²⁸ Exhibit 21 p. 11 [4.8].

Schomburgk's view that the proposed development would be a logical extension of the urban development for the area established by the Peregian Springs and Coolum Ridges' approvals. He said that the proximity of Peregian Springs to the Land did not support a reasonable expectation at the Relevant Date that the Peregian Springs development would proceed, as a matter of course, in the direction of the Land. Further, he said that any residential needs in the area could be met by other considerable lands throughout the Urban Area and he identified land around Nambour and near Sippy Downs as locations in close proximity to standard urban services which would have met any demand for the number of additional lots reflected in the proposed development.²²⁹ Apart from that land the Council argued that any need for residential development in the area would have been well capable of being satisfied by the development of Peregian Springs and Coolum Ridges totalling 2,600 allotments. The issue of the absence of need was also relied upon in opposing the Norfolk Estates' application for rezoning and appeal.²³⁰

[182] The Council rejects the appellants' argument that designation of the Land evidences need as flying in the face of the express provision of s 4.4(3)(b) of PEA requiring the consideration of need. It also refers to Urban Areas Objectives in the 1985 Plan that is to be considered for the conversion of land so designated to Urban Use, namely, orderly and proper development, progressive conversion of land, orderly and economic growth, urban development on a progressive basis to allow for the economical provision of public utility services, that many areas will be retained in their natural state and that the environment will be taken into account when considering rezoning applications. Against those criteria, the Council asks rhetorically what their relevance is if the mere presence of the land in the Urban Area designation addresses the issue of need.

[183] It is common ground that as at the Relevant Date no development had commenced on either Peregian Springs or Coolum Ridges. Mr Slater, the Valuer for the Council, gave evidence²³¹ of a 46% drop off in sales of vacant residential land of less than 1,000m² in the Noosa Shire, Maroochy Shire and Caloundra City collectively from 1994 to 1996 and, expressed the view that the fall in sales was to attributable only to reduced demand and not to any shortage of developed land stock. In reliance on this evidence the Council argued that there was no market demand let alone town planning need for residential allotments in the subject area at the Relevant Date.

[184] When tested in cross-examination on that last statement Mr Slater conceded that he had not made any specific enquiries in relation to the number of lots available for sale in the area approximate to the

²²⁹ Exhibit 21 p. 11.

²³⁰ Exhibit 13 [5] and [9].

²³¹ Exhibit 63 p. 10.

Land between 1993 and 1996. He said that his conclusion in paragraph 19.2.6 of his report that, “*there is no suggestion that there was any shortage of developed stock leading to the reduced rate of sale subsequent to 1994*”, was based not on any assessment but on his background experience that told him that there wasn’t a shortage of developed stock. The upshot of his evidence was that the only lots he knew of as available in the relevant period were four lots at Peregrine Beach. He could not say how many were available at Coolum Beach. Despite his absence of specific enquiries, however, Mr Slater said that ‘the unavoidable consequence of the shortage of availability of land is that prices rise and that did not happen in the 1993 to 1996 period.’²³² I took that to be an adherence to his expressed view that there was no shortage of stock and that the drop in sale rate was attributable only to reduced demand. Of course, the fact that Mr Slater did not make enquiries in relation to the availability of developed land stock is not evidence that there was any such shortage.

- [185] In short, the Council’s position is that there is no evidence of town planning or community need for an amendment to the Plan to include the Land in the zones contemplated by the proposed development, namely, Residential A, Residential B, Commercial, Light Industrial, and Special Facilities (places of worship and educational establishments).

Conclusion re Planning Need

- [186] In my view, any properly advised purchaser would have been advised that the planning need was an issue which was required to be taken into account in relation to any rezoning application, although the absence of need would not necessarily be fatal to the application. I consider that purchaser would have concerns about whether or not a planning need could be established. I think he would be more likely to rely upon the advice of Mr Buckley than Mr Schomburgk on this issue.

COSTS OF DEVELOPMENT

- [187] Two issues arise here for consideration by any prospective purchaser. Firstly, the likelihood of obtaining the necessary services to the proposed development, and secondly, their likely cost. I shall deal with the second issue first.

Development Costs

- [188] Dr Johnson gave evidence for the Council in relation to the provision and cost of reticulated water supply and sewer and engineering infrastructure. For the appellants, Mr Monson gave evidence of the provision and cost of reticulated water supply and sewerage, and Mr Covey gave evidence of the

²³² T20.5-7.

provision and costs of engineering infrastructure. There were five areas of difference identified, namely:-

- (a) the bring-forward for Stage 3 sewer works;
- (b) an adjustment for Stage 1 bring-forward costs of external sewer works;
- (c) the bring-forward cost of upgrades to the Council's existing Sewer Pump Stations P1 and P7;
- (d) the cost of a supply of a 375 mm water Main from Yarran Road reservoir to the subject Land; and
- (e) 50% of the cost of construction of the Murdering Creek Road roundabout on the Motorway.

Exhibit 32 is a convenient schedule setting out the costs which each of the experts considered appropriate to the disputed item together with the base development cost as agreed by all three experts, and then each expert's final development cost figure expressed as a lump sum and as a cost per lot over the 1,115 lots proposed.

Bring-forward Cost Stage 3 Sewer Works

[189] The estimate of Mr Covey and Mr Monson for this item was \$606,560 though in evidence Mr Monson²³³ agreed that the estimate of Dr Johnson of \$642,306 (an increase of \$35,746) was within range, and the increase was not an issue. Dr Johnson also put up an alternative basis for budgeting for this item based upon s 2.05.2 of the Council's Policy for Developer Contributions for Water Supply and Sewerage Services (August 1985) which allows for the full cost of external works to be borne by an applicant developer where the subject works are designed only to serve the subject land.²³⁴ It is common ground that at the Relevant Date the Land was not within the Council's headworks charging area for water supply and sewerage issues.²³⁵ The figure Dr Johnson struck for that alternative basis of charging was \$1m, which he said a conservative purchaser may have elected to assume which would increase the total cost by the difference between \$1m and \$642,306, namely, \$357,694. The Council argues that the subject hypothetical purchaser would be so conservative as to costing in that additional sum.

²³³ T3.49.5-25.

²³⁴ Johnson Report Exhibit 23 p. 14.

²³⁵ Exhibit 23 p. 5 [10].

Adjustment for Stage 1 Bring-forward Costs of External Sewer Works

- [190] For this item, Mr Covey allowed nil on the basis that it would be fully creditable against any headwork charges to be paid by any developer²³⁶. Mr Monson and Dr Johnson agreed that the appropriate figure was \$532,685. They considered that credits against headworks charges were not recoverable for works external to headworks infrastructure which serve only the subject development which was the case here.²³⁷

Upgrades to Pump Stations P1 and P7

- [191] Dr Johnson estimates this cost at \$68,750, but Messrs Covey and Monson put the cost at nil on the basis that that work would be headworks creditable. Mr Monson²³⁸ agrees with Dr Johnson as to the cost of \$68,750, but says that ‘they are headworks creditable so that the developer would be repaid the outlay by way of credit against headwork charges on the development’. His view is that the sewerage services system had sufficient spare capacity in the subject area in 1996 to accommodate the sewerage flow from approximately 400 Equivalent Tenements [ET], with 200 of those being available to the Land.
- [192] He said the upgrading of these pump stations would take place during the second stage of the development on the Land when development reached 200ET.²³⁹ Because the Council would thereby become a beneficiary of the upgrade to those pumps and being the manager of the headworks at point of upgrade, the whole system would be enhanced by the increased capacity of pumps P1 and P7, hence, the entitlement to headworks credit.²⁴⁰
- [193] Dr Johnson takes a different view.²⁴¹ He relies upon s 2.05.2 of the Policy referred to above. He takes the view that the upgrading of Pump Stations P1 and P7 is an interim measure not required for the development of the ultimate system in the area. While the upgrade would increase the capacity in the sewerage system, that increased capacity would be required solely to serve the Land, and for that reason is not headworks creditable with the result that the developer would have to pay the entire cost of \$68,750.

²³⁶ See Covey Report Exhibit 8 pp. 7-9; T5.53-59.

²³⁷ Exhibit 8 pp. 7-9.

²³⁸ Joint experts’ meeting 12 December 2008 Exhibit 23, Exhibit B [2(b)].

²³⁹ Ibid [6-11].

²⁴⁰ Ibid [2(b)].

²⁴¹ His report Exhibit 23 s 4.3.

- [194] In the Council’s submissions,²⁴² it was said that Mr Monson had made the frank admission that if the Council thought it was going to be out-of-pocket for the bring-forward costs of those upgrades, then the developer, “*would be responsible for the upfront costs of the works.*” The Transcript relied upon does not show that. Rather, it shows that Mr Monson said,²⁴³ “... *if the Council felt that the public was out of pocket then the developer may well have said, ‘Look, if this is an issue we will finance this upfront’.*” In short, the concession attributed to Mr Monson was not made.

The 375 mm Water Main

- [195] This is a substantial item with Dr Johnson attributing \$1,305,480 to it, and Messrs Covey and Monson the sum of \$356,800, a difference of \$948,680.²⁴⁴ This relates to a 375 mm diameter Main connecting the Yarran Road reservoir to the Land.²⁴⁵ Messrs Covey and Monson say the cost of this item would be nil because it was headworks creditable. Mr Monson’s view was that Council would have accepted this Main as part of the West Peregrine Water Supply Headworks Trunk Mains network and would have allowed the full cost as a credit against the developer’s headworks contributions. He acknowledged that the Council may have negotiated to have the developer fund the construction upfront with the cost being refunded as headworks credits at the appropriate stages of development.²⁴⁶
- [196] Again, Dr Johnson disagrees with Mr Monson.²⁴⁷ There was no dispute that the Land was not within the Council’s water supply service area at the relevant time. In Dr Johnson’s view this 375 mm diameter Main is sized to service only the Land, and constitutes Works External in s 2.04 of the Council’s relevant Policy²⁴⁸ in force at the relevant time which provides:-

“2.0.4 Water Supply Works External is defined in s 33(18E(1)) of the Act as ‘all works, structures and equipment for the purpose of connecting land to the local authorities water supply scheme’. For the purposes of this policy, Water Supply Works External shall include all mains, pumping stations, elevated storage tanks and any other water supply apparatus which may reasonably be required for the transfer of water from the point of connection nominated by the Shire engineer on the water supply system to the boundary of the subject land.”

²⁴²

[377].

²⁴³

T3.73.1.

²⁴⁴

Exhibit 32.

²⁴⁵

Exhibit 23 p. 14 [38].

²⁴⁶

Exhibit 9 p. 4 [2.1.9].

²⁴⁷

Exhibit 23 p. 14 [38-44].

²⁴⁸

Council’s Policy for Developer Contributions for Water Supply and Sewerage Services (August 1985).

The subject Main is external to the Land.

[197] Section 2.05.2 of the same Policy provides:-

“2.05.2 Where the works external is designed to serve only the subject land, the Utilisation Factor shall be unity and the full cost of the external works shall be borne by the applicant.”

In Dr Johnson’s view the Policy is quite clear that the cost of providing the Main would be borne by the developer.

The Murdering Creek Road Roundabout

[198] The final costs item the subject of disagreement between Dr Johnson and Messrs Covey and Monson is the sum of \$650,940 representing half the cost of construction of the Murdering Creek Road roundabout on the Motorway which passes through the Land. Messrs Covey and Monson both agree that the developer would be responsible for half the total costs of the roundabout which latter figure is agreed at \$1,041,500.²⁴⁹

[199] Mr Covey basis his half cost estimate on the assumption that there was a strong likelihood that the Main Roads Department would, as a condition of the approval for construction, require the Peregrine Springs developer to contribute 50% of construction costs.²⁵⁰

[200] Two traffic engineers, Mr Pekol for the appellant, and Mr Eppell for the Council gave evidence and provided a joint report dated 19 May 2008.²⁵¹ On the issue of contribution to construction costs, Mr Eppell anticipated that the Department of Main Roads (DMR) would, at the Relevant Date, have conditioned the roundabout construction to the development and similarly to any other possible development at the time. If two similar scale developments were proceeding at similar times, he considered that a fairer approach would be to apportion the costs against both developments proportionately to the amount of traffic each generated. He said, ‘that was not the approach of the DMR at the time, but any developer would be free to negotiate with the DMR’. Mr Pekol agreed with Mr Eppell that a fairer approach would be to apportion the costs as above outlined.

[201] The Council argues that there was no other developer in the locality at the Relevant Date ready to commence development who could realistically be asked to contribute to the roundabout costs and

²⁴⁹ Exhibit 23 p. 9 [21].

²⁵⁰ T5,28-29.

²⁵¹ Exhibit 22 Appendix B.

that the developers of Peregrine Springs and Coolum Ridges would not have volunteered a contribution. Mr Pekol acknowledged in evidence that the DMR would impose a condition requiring the full cost of the roundabout to be paid by the developer and unless a negotiated agreement with another developer could be reached; his hypothetical client developer would be paying the full cost of the roundabout although the costs could be staged over the construction period.²⁵²

[202] That then deals with the items in dispute between Dr Johnson on the one hand and Messrs Covey and Monson on the other. In summary, Exhibit 32 shows the total estimated construction costs for each expert as:-

	Total Cost	Cost per Lot
Mr Covey	\$35,740,880	\$32,054
Mr Monson	\$36,273,565	\$32,532
Dr Johnson	\$37,977,681	\$34,060

[203] Whichever of those costs may represent the true cost of development, the appellants say that, in any event, they all fall within a range which makes the development viable, and they rely, in that regard, on evidence given by Mr Covey who said that, 'even if the costs were \$37,977,681 as estimated by Dr Johnson, the development would not cease to be viable as that cost would be within the normal range of development costs at the time'.²⁵³

Conclusion re Costs of Development

[204] I consider that any properly advised purchaser having regard to the abovementioned arguments on each of the issues in dispute would adopt the highest figure, namely, \$37,977,681 as the anticipated development costs so that all contingencies would be catered for. Despite the possibility of contribution from others and the possibility of headworks credits, I do not consider a purchaser would assume the risk of those possible entitlements by factoring them into the costs of development. I consider that he would be more likely to accept the advice that they would be to his account at the end of the day and that any Council credits or fellow developer contributions would be a bonus. As

²⁵² T4.34.30; T4.35.1-15.

to the second issue of whether the Council was likely to provide the necessary services to the proposed development, this is linked to the next issue of Prematurity/Leap Frogging. I shall defer my findings until I have dealt with that issue.

PREMATURITY/LEAP FROGGING²⁵⁴

[205] The Council argued that even though any development on the Land could be serviced with the appropriate infrastructure, particularly water and sewerage as at the Relevant Date, the real question was whether those services should be made available. The Council points to the fact that prematurity was raised by it as a ground for opposing the Norfolk Estates appeal.²⁵⁵ In its view, such a development would be at odds with Urban Areas Objectives in the 1985 Plan which speaks of orderly and proper development of urban centres.²⁵⁶ The development of urban areas by the development upon and consolidation of existing urban areas,²⁵⁷ and the development of new urban centres in locations capable of being adequately serviced with public utilities having regard to the orderly extension of those public utility services.²⁵⁸

[206] In the Council's view, the development would be premature and represent an inefficient, disorderly, and improper extension of infrastructure services given that the Land was, at the Relevant Date, outside the relevant Headworks Area. The Council's view was that it would not take on the responsibilities of extending the infrastructure and then having to maintain it having regard to the following factors:-

- (a) Distance of the Land from the then existing urban development;
- (b) The separation of the Land by the Motorway from the then existing urban development commitments of Peregrin Springs and Coolum Ridges;
- (c) The capability of Peregrin Springs and Coolum Ridges to meeting any reasonably foreseeable need for residential allotments in that part of the Shire;
- (d) The position of the Land at the very extremity of the Shire and well beyond the planned Headworks Area;

²⁵³ T4.85.10-20.

²⁵⁴ The first recorded use of the term Leapfrog was found in William Shakespeare's works; see Shakespeare-The Illustrated Edition Bill Bryson Harper Press 2009 page 150.

²⁵⁵ Exhibit 13 [9] and [10].

²⁵⁶ Objective 1.

²⁵⁷ Objective 2.

²⁵⁸ Objective 3.

- (e) Necessity for significant infrastructure to service any urban development on the Land; and
- (f) The fact that the Land was designated in the Urban Areas PDLU did not necessarily mean that all land within that designation necessarily was to be developed within the life of the 1985 Strategic Plan, a point Mr Schomburgk, the appellants' town planner, agreed with.²⁵⁹

[207] The appellants reject the argument of prematurity arguing that all necessary water supply and sewerage infrastructure, even if paid for entirely by the appellants, would still render the project viable. There is no issue between the engineers that the provision of such services was technically feasible,²⁶⁰ the only disagreement being over whether or not there would be headwords credits back to the developer.

[208] In the appellants' view, prematurity is usually only a reason for refusing an application for rezoning if it involves some substantial public disbenefit.²⁶¹ No public disbenefit has been established by the Council.

[209] The appellants relied upon a statement by Quirk DCJ in *Jenkins Pty Ltd v Caloundra City Council*²⁶² where His Honour made these statements in relation to the planning strategy behind a strategic plan objective dealing with the extension of urban development to areas capable of being adequately serviced with public utilities having a regard to the importance of the orderly extension of those services:-

“The planning strategy that is inherent in this objective is not that parcels of land should not develop until an adjoining parcel is in a developed state but that the spread of development over the urban area should not be random in a way that precludes provision of essential services (such as water supply and sewerage) in an orderly and efficient way. Such a problem does not arise in this case. ...

The planning rationale for such a requirement is arguably to prevent the establishment of such facilities in remote areas where urban development is unlikely to be foreseen in the foreseeable future. This is not such an area. All of

²⁵⁹ T15.5-40; T15.17.38-57; T15.32.17-27.

²⁶⁰ Exhibit 1B Tab 26 p. 204 [1].

²⁶¹ *Westfield Ltd v Gold Coast City Council and Ors* [2002] QPELR 542 at 551.

²⁶² [2002] QPELR 527 at 528.

the formal planning documents envisaged its development for urban purposes within the life of the scheme. I was informed within the course of the hearing that this scheme's life has not much longer to run."

- [210] The appellants point to the Peregrine Springs and Coolum Ridges approvals and make the point that the development of the Land would not be remote from those other planned and approved urban areas. That reliance is, of course, on approvals and not on any development of Peregrine Springs and Coolum Ridges because at the Relevant Date, no such development had commenced. I consider the purchaser would not be strongly influenced by the fact that there were in existence approvals for Peregrine Springs and Coolum Ridges. Rather, his focus would be more on the fact that at the Relevant Date, no development had taken place on those estates and there was no evidence of when it was anticipated. I consider the physical distance between the Land and nearest urban development would be seen by the purchaser as a factor seriously mitigating against a successful development approval. That said, I consider that if that obstacle could be overcome and the only issue then preventing a development approval was whether the Council was likely to provide the necessary services to the proposed development, the purchaser would take the view that it would be likely that the Council would provide the services but to his account.

FLOODING AND DRAINAGE

- [211] The Council accepts that flooding and drainage issues would not of themselves preclude development of the Land for urban purposes, but would be relevant to the extent to which the Land could be developed having regard to its extensive drainage lines, ecological significance for the wetland areas, and the cost of the development to address those issues. In my view the purchaser would not regard these issues as an impediment to development approval.

ACID SULPHATE SOILS

- [212] Again, Council concedes that any issue of acid sulphate soils would not be likely to preclude the development of the Land, but would be one of the matters a prudent purchaser would take into account in assessing its value. The appellants say, 'that there is no issue of acid sulphate soils'. In that regard, Dr Gilbert for the appellants, said, 'that the subject land was unlikely to have acid sulphate soil'. Mr Sutherland for the Council, said that, 'even if they were present, they would not constitute a constraint on development'.²⁶³ In my view the purchaser would not regard this issue as an impediment to development approval.

²⁶³ Exhibit 1B Tab 27 p. 215 [7].

TRAFFIC ENGINEERING ISSUES

- [213] Again, there is no disagreement that traffic engineering issues would not have, in themselves, precluded development of the Land.²⁶⁴ In my view the purchaser would not regard this issue as an impediment to development approval.

TOWN PLANNING CONSIDERATIONS

- [214] Mr Schomburgk,²⁶⁵ the appellants' town planner, considered that the highest and best use for the Land as at the Relevant Date was for the urban residential development in accordance with the Covey Plan which he said, 'satisfied the 1985 Strategic Plan and the relevant provisions of the PEA relating to rezoning and subdivision'. In his view, matters of infrastructure, traffic management, and open space areas would have been addressed in the conditions of approval granted by the Council. He could identify nothing to suggest that the Covey Plan would not have been accepted and approved by the Council and relevant estate agencies which would have formed an obstacle to the rezoning application.
- [215] The Council planner, Mr Buckley, disagreed²⁶⁶. In his view, having regard to the urban area provisions of the Strategic Plan, the designation of part of the Land as rural, the Land's environmental qualities, its location at the most remote part of the urban designation within the Shire, its removal from any area served by appropriate infrastructure, the absence of any planning need for the Land to be developed, and the agricultural value of the Land rendered the highest and best use of the Land at the Relevant Date as most likely to be subdivided into rural allotments of 20 ha each for rural purposes.
- [216] Despite the obvious differences between the two experts, they agreed that a prudent purchaser would be advised of the following²⁶⁷:-

- (a) all relevant planning controls;
- (b) planning consequences for the technical areas of expertise including flora, fauna, traffic, engineering and good quality agricultural land which would inform the town planning opinion;

²⁶⁴ Appellants' Submissions [307] and [310]; Council's Submissions and Reply [149].

²⁶⁵ Report Exhibit 2 p. 31.

²⁶⁶ Report Exhibit 21 p. 13.

²⁶⁷ Appellants' Submissions [368] not contested by Council in its Submissions – see Council Reply Submissions [178] et al.

- (c) any application for rezoning would be assessed under Chapter 4.4 of PEA, particularly having a regard to s 4.4(3) and (5A);
- (d) any application for rezoning would attract objections;
- (e) environmental issues of flora and fauna would be such as to attract attention from the Council, objectors and State departments;
- (f) issues of planning need and good quality agricultural land would be raised as issues mitigating against approval of a rezoning application;
- (g) the rezoning application would be likely to be refused by Council; and
- (h) an appeal to the Planning and Environment Court would be necessary which would attract opposition from the Council, the State and objectors.

[217] The appellants attack Mr Buckley's opinion, and argue that any prudent purchaser would discount it on six grounds, namely²⁶⁸:-

(a) **Drylands**

It is said Mr Buckley ignored the view of the environmental experts who considered that the development could proceed in the dryland areas of the Land. It will be recalled that the Flora experts, Doctors Carter and Olsen, agreed that those areas could accommodate some development;²⁶⁹

(b) **Assessment Approach**

What is said to be his incorrect approach to assessment of rezoning applications in suggesting that, irrespective of the Land's urban designation, the proper planning approach in assessing the application for rezoning was to revert to first principles. As I understood their argument, given the expectations of entitlement to urban development created by the fact of designation in the Urban Areas PDLU, the correct approach was in accordance with a statement of Rackemann DCJ, in *Main Beach Progress Association Inc v Gold Coast City Council*²⁷⁰ where His Honour said, when dealing with an Impact Assessment under the relevant Plan:-

²⁶⁸ Appellants' Submissions [370]-[384].

²⁶⁹ [99(f)] above.

²⁷⁰ [2008] QPELR 675 at 695.

“... It must be remembered, however, that Impact Assessment is not simply a ‘first principles’ assessment of a proposal and its impact, irrespective of the Planning Scheme. As observed earlier, impact assessment must be carried out having regard to the Planning Scheme which, in turn, is the basis for reasonable expectations, and a decision on the application must not conflict with the Planning Scheme unless there are sufficient grounds. ...”

Were it otherwise, the appellants say, there would be erosion of the public confidence in the Planning Scheme provisions to provide a basis and framework for planning decisions in any local government area;

(c) **Inconsistency in Reliance upon Peregrine Springs and Coolum Ridges’ Approvals**

The appellants point to what they see as a contradiction in Mr Buckley’s reliance upon the Peregrine Springs and Coolum Ridges rezoning approvals in his consideration of the issue of planning need against his ignoring of them when considering the issue of orderly development;

(d) **Reliance upon Good Quality Agricultural Land**

The appellants further criticise Mr Buckley by saying that his opinion as to the lack of likely success of a rezoning application was partly founded on the opinions of Dr Matthew and Mr Sutherland on the issue of good quality agricultural land when a prudent purchaser would have preferred Dr Gilbert’s opinion to that of Dr Matthew because of the appellants’ view that Dr Matthew’s opinion was unduly theoretical and devoid of practical application;

(e) **Failure to Consider Part B of 1985 Strategic Plan**

The appellants rely upon Mr Buckley giving evidence that he did not take Part B of the Strategic Plan into consideration in preparing his report.²⁷¹ That was the 1983 Supporting Information document to the 1985 Strategic Plan.²⁷² Mr Buckley went on to say, in relation to Part B, that in terms of advising a prudent purchaser in 1996, he would not have relied on anything in it to help inform him on an important decision involving substantial amounts of money;²⁷³

(f) **Reliance on Selective Parts of Strategic Plan**

The final ground of criticism of Mr Buckley's opinion is that he gave too much weight to Objective 1(d) of the Urban Areas PDLU and seemed to interpret that as a complete "get out clause". No particulars were given of that allegation in the appellants' submission.

[218] When one turns to Mr Buckley's report²⁷⁴ he sets out each of the four Urban Areas Objectives and observes that no one Objective overrides the other. He then sets out Objectives 3(1)(d) and 4(a) as being Objectives which would require careful consideration by a prospective purchaser and his/her advisers. They provide:-

"3(1)(d) The inclusion of areas within the preferred dominant land use as urban areas does not mean that all such properties may be rezoned and developed for urban purposes. Many areas, because of their physical characteristics, including ascetic aspects, steeply sloping terrain, areas with instabilities because of slope, and areas subject to flooding, will be retained in the natural state. This will also apply to areas abutting major roads and water courses required as buffer spaces.

(4)(a) In considering rezoning applications within the new urban areas and development applications in accordance with the indicated preferred

²⁷¹ T16.49.23.

²⁷² Exhibit 62.

²⁷³ T16.51.1.

²⁷⁴ Exhibit 21 p. 4 [3.3].

dominant land use on the strategic plan, the Council will take into consideration all the relevant planning aspects including:-

- (i) the effect of the development which will follow the rezoning or the particular development proposal upon the environment. In order to do this the Council will require the applicant supply a planning report giving an assessment of the proposal;
- (ii) in considering rezoning development proposals within the new urban areas and within existing urban areas, the Council will have regard to flood areas, engineering and access constraints, together with areas of slope instability, in accordance with reports and maps contained in Part B.”

He then expresses the opinion that any advice to a perspective purchaser would set out in no uncertain terms that not all urban area land can automatically be considered to be suitable for development.

[219] The appellants point to Objective 4(a)(i) above to contrast it with Objective 1(d) which does not, unlike 4(a)(i), expressly call up the environment as a constraint which may cause the land to be retained in its natural state.²⁷⁵ They say, ‘that Objective 1(d) does not expressly call up the environment as a constraint and should not be interpreted to include environmental constraints’. It follows, they say, ‘that environmental considerations are to be balanced against development expectations as envisaged in Objective 4 rather than considered under Objective 1(d)’. They say, ‘to do otherwise would undermine public confidence in the Urban Areas designation of the Strategic Plan’.

[220] The appellants further point to Mr Buckley’s evidence that he was not aware of any case where the Council had refused a rezoning application based on a conflict with Objective 1(d).²⁷⁶ Mr Schomburgk gave evidence to the same effect.²⁷⁷

[221] As to the correct approach to interpreting a Strategic Plan, the appellants relied upon *Family Assets Pty Ltd v Gold Coast City Council*²⁷⁸ in which Skoien SJDC said:-

²⁷⁵ Appellants’ Submissions [82]-[84].

²⁷⁶ T16.47.38-43.

²⁷⁷ T15.95.28-40.

²⁷⁸ [1989] QPLR 163 at 166.

“A strategic plan is of significance when considering rezoning applications in particular in that in broad terms it deals generally with the future preferred dominant land use in a locality. In such circumstances, considerable weight ought to be given to the provision of the strategic plan when considering a rezoning application.”²⁷⁹

- [222] In acknowledging the force of s 4.4(5A) of PEA mandating the refusal of an application which conflicts with a strategic plan unless sufficient town planning grounds are available to justify approval, the appellants point to two converse propositions supported by authority. Firstly, the fact that, just as the conflict must lead to rejection unless the exculpatory condition is satisfied, if a proposal is in conformity with a strategic plan that must be seen as a factor substantially in the applicant’s favour.²⁸⁰ Further, strong reasons would be required for refusing an application which, on its face, is consistent with the intent and requirements of the relevant provisions of the town plan.²⁸¹ The appellants say no conflict with the Plan exists and the application is consistent with the provisions of the Planning Scheme and would have been approved.

Council’s Argument re Town Planning Issues

Planning Background

- [223] The Council points to the change in legislation brought about by the introduction of the PEA on 15 April 1991 and its amendment in 1992. Both pieces of legislation, it says, ‘introduced significant changes to the legislative landscape’. Considerable focus was placed on mandatory environmental considerations,²⁸² environmental impact statements were introduced,²⁸³ State Planning Policies were introduced to which local authorities required to have regard,²⁸⁴ local governments were obliged to consider the need for any proposed planning scheme sought,²⁸⁵ and, significantly, a local government was obliged to refuse a proposal to rezone land if the proposal conflicted with a Strategic Plan unless there were sufficient planning grounds to justify approval notwithstanding the conflict.²⁸⁶

²⁷⁹ See also *Thomas Holdings Pty Ltd v Council of the City of Gold Coast and Anor* [1991] QPLR 32.

²⁸⁰ *Creed v Caboolture Shire Council* [1994] QPLR 97 at 98.

²⁸¹ *Emborisoff and Associates Pty Ltd v Caboolture Shire Council and Ors* [1994] 254 at 257; *MacKay v Brisbane City Council* [1992] QPLR 65 at 67.

²⁸² Ss 4.4(3)(f) and 8.2(11D).

²⁸³ Ss 8.2(2), 8.2(3), 8.2(11D).

²⁸⁴ Part 1A and s 4.4(3A).

²⁸⁵ S 4.4(3b).

²⁸⁶ S 4.4(5A).

[224] The Council's view is that the proposed development in accordance with the Covey Plan would have constituted a complete transformation in the purposes for which the Land could be used. They say that because, under the Rural A Zone in which the Land was located, none of the proposed uses in the Covey Plan were as of right, uses, and some were prohibited uses (commercial premises, light industries). In other words, the proposed uses for the Land were radically different from those contemplated in the Rural A Zone in the Table of Zones.²⁸⁷ It made the point, 'that the intent of the Rural A Zone was identified as, *inter alia*, to identify and protect significant areas for a wider range of rural activities,²⁸⁸ and that the Urban Areas and Rural Areas PDLU's and their Objectives were determined in relation to the principal goal of the Strategic Plan²⁸⁹ which, *inter alia*, was to achieve the best possible balance between development, including tourist orientated development in the Shire, and conservation of the natural environment ... and the proper management of the Shire's resources'.

[225] That Strategic Plan goal was to be achieved by implementation of the Strategic Plan and Statement of Objectives against the background and by way of the Town Planning Scheme. In other words, the Scheme was to be interpreted as a whole. On that approach, which is clearly correct, the Council pointed to the evidence of their town planner, Mr Buckley,²⁹⁰ to seek to dispel the notion that the mere inclusion of the Land in the Urban Area PDLU gave rise to an expectation that the Land could have been developed as proposed in the Covey Plan. Mr Buckley said:-

“The feint encouragement for some urban development of this land arising from the inclusion of part of it in the ‘urban’ designation under the superseded strategic plan does not survive scrutiny involving the ‘urban’ area provisions, the ‘rural’ designation of the balance of the land; the environmental qualities of the land; the location of the land at the most remote part of ‘urban’ designation within the Shire, and its removal from any area served by appropriate infrastructure including water, sewerage and an appropriate road network.”

[226] The Council focuses on the express language of ‘Urban Areas Objective 1(d)’ and says, ‘that it points out in the clearest language that not all of the land in the Urban designation under the 1985 Strategic Plan will be rezoned and developed for urban purposes. It relies on all the Objectives of the Urban Areas and points to the concepts they reveal namely progressive conversion to urban use,

²⁸⁷ Exhibit 1C p. 349.

²⁸⁸ Exhibit 1C p. 341.

²⁸⁹ Exhibit 1C p. 3621.

²⁹⁰ Exhibit 21 p. 13.

determination of rezoning application on their merits, retention of many areas in their natural state by virtue of their physical characteristics, the ensuring of proper and orderly growth and consolidation of existing urban areas indicated in the zoning, the development of new urban areas on a progressive basis to ensure that all public utility services and access to those new urban areas can be economically provided, and to ensure that any new urban development does not conflict with environmentally sensitive and/or conservation areas’.

- [227] The Council rejected the suggestion from Mr Schomburgk that the proposed development would represent either orderly growth or a consolidation of existing urban areas represented by Peregrin Springs and Coolum Ridges. In its view, reference to existing urban areas in the Urban Areas Objectives refers not simply to commitments for future urban development, but to actual existing urban development.
- [228] The Council repeated its argument outlined above when dealing with environmental issues, that, having regard to Urban Area Objective 4 and the PEA, any prudent purchaser reasonably advised would have been told that environmental considerations would have been very important and would have precluded success in any application for rezoning, confirmed by the fate of the Norfolk Estate application.
- [229] As to the appellants’ argument that the smaller section of the Land included in the Rural PDLU could be developed as land contiguous to Urban PDLU Land in Objective 1(a) of the Urban Areas Objectives, the Council says that, ‘the bisection of the Land by the Motorway destroys any contiguity between that Land and the balance in the Urban PDLU’. The appellants’ answer to that is to refer to the Plan designating the Urban and Rural Areas under the 1985 Plan,²⁹¹ and to point out that the triangular areas of Rural and Urban Land south of the Motorway do, in fact, adjoin so as to be contiguous.
- [230] The Council further argues that the intervention of the Motorway through the Land further mitigates against the proposed development by denying it the status of ‘orderly and proper development’ and says, ‘that the southern rural area portion is more obviously related in location proximity and physical characteristics with the underdeveloped or agricultural land adjoining it to the south and west’.
- [231] In summary, the Council says, ‘that the town planning considerations support the following conclusions:-

²⁹¹ Exhibit 1A p. 21.

- (a) the Urban Areas PDLU did not confer any relevant expectation that that part of the subject Land would necessarily be approved for urban development;
- (b) similarly no such expectation was conferred in relation to the rural area section of the Land;
- (c) the proposal conflicted with Urban Areas Objectives, particularly Objective (1), Implementation Criteria (a), (b), (c), and (d), Objective (2), Implementation Criteria (a) and (b), Objective (3) and Implementation Criteria (a). Further, it conflicted with the environmental and physical characteristics provisions as dealt with in the Environmental Considerations sections above. No sufficient planning grounds exist which would justify approving the rezoning application despite those conflicts;
- (d) the development would not represent an orderly development given the absence of any existing urban development nearby, and could not be said to be in any way consolidating any existing urban area’.

Principles Governing Interpretation of Planning Schemes

[232] These were usefully summarised in *Westfield Management Ltd v Pine Rivers Shire Council*²⁹² in these terms:

- “(a) They should be construed broadly rather than pedantically or narrowly and with a sensible, practical approach (*ZW Pty Ltd v Peter R Hughes & Partners Pty Ltd* [1992] 1 Qd. R. 352 of 360; *Yu Feng Pty Ltd v Maroochy Shire Council* [1996], 92 LGERA 41 at 73, 75, 78; *Harburg Investments Pty Ltd v Brisbane City Council* [2000] QPELR 313 at 318);
- (b) They should be construed as a whole (*Luke v Maroochy Shire Council & Anor* [2003] QPELR 447);
- (c) They should be construed in a way which best achieves their apparent purpose and objects (*Luke v Maroochy Shire Council & Anor* (SUPRA);

²⁹²

(Unreported) Planning and Environment Court Brisbane 14 November 2003 1627/03 at pp. 8-9; see also *Kotku Education & Welfare Society Inc v Brisbane City Council & Ors* [2005] QPELR 267 at [271]-[272].

Nordale Management Pty Ltd v Maroochy Shire Council [1995] QPLR 368 at 370; *Acts Interpretation Act* 1954 s. 14A);

- (d) In the light of the proscription against prohibiting development contained in IPA (s 6.1.2 (3));
- (e) Statements of Intents or Aims or Objectives are intended to provide guidance for the task of balancing the relevant facts, circumstances and competing interests in order to decide whether a particular use should be rejected as inappropriate (*Degree v Brisbane City Council* [1998] QPELR 287);
- (f) A Strategic Plan sets out broad desired objectives and not every objective needs to be met before a proposal can be approved (*Lewiac Pty Ltd v Gold Coast City Council* [1994] 83 LGERA 224 at 230;
- (g) A Strategic Plan should be read broadly and not pedantically (*Yu Feng Pty Ltd v Maroochy Shire Council*) SUPRA);
- (h) Although planning documents have the force of law they are not drawn with the precision of an Act of parliament;
- (i) A conflict alone may not have the effect of ruling out a particular proposal (*Fitzgibbon's Hotels Pty Ltd v Logon City Council* [1997] QPELR 208 at 212;
- (j) Implementation Objectives must be read sensibly and in context. They are but a function of the principal objective. The purpose of the objective is better understood by reading all the implementation objectives and understanding the strategy that is inherent. (*Jenkinson Pty Ltd v Caloundra City Council* [2002] QPELR 527 at 528)."

Sub-paragraph (d) is not relevant.

- [233] I do not accept the appellants' argument that environmental issues are not comprehended by Objective 1(d) in the Urban Areas PDLU. As the above principles show, the Plan is to be interpreted in a broad, rather than a pedantic or narrow way. Two concepts are abundantly clear in Objective (1) of the PDLU. The first in 1(b) that any application for rezoning to achieve urban development is to be determined on its merits, and the second, in 1(d) that the inclusion of an area within the urban area does not mean that it will be rezoned and developed for urban purposes. To my mind those two important concepts underpin consideration of applications for development of land designated in the Urban Areas PDLU. For those reasons I likewise disagree with the appellants' argument that any assessment should, in effect, start with the presumption of a prima facie entitlement to development by virtue of the urban designation. No such presumption or rebuttable expectation of entitlement is supported by a proper reading of the 1985 Planning Scheme as a whole.
- [234] That is not to ignore the fact that the Council has, after careful consideration, included the Land in the Urban Area designation. That entitles the Land to be considered for urban development but that consideration is not to be blindly driven by the designation, but rather by a careful consideration of all relevant issues including environmental issues.

Conclusion re Town Planning

- [235] Having regard to the matters raised by Mr Buckley, the Council Town Planner, I consider the purchaser would have serious concerns as to the prospect of development approval being granted for this Land. I refer particularly to the issues of environmental impact, orderly and proper development, planning need and consolidation of existing urban areas. On these issues, I consider that the purchaser would be more likely to accept the opinions of Mr Buckley rather than Mr Schomburgk. He would entertain a real concern that a conflict between the proposal and the 1985 Strategic Plan would be found to exist so as to trigger PEA s 4.4(5A). For the same reasons he would have similar concerns as to the absence of any sufficient planning grounds to attract the exculpatory operation of s 4.4(5A)(b).

MARKET VALUE OF LAND AS AT 10 MARCH 1996

- [236] Mr Henderson gave valuation evidence for the appellants. He put before the Court five alternate valuations:-

- (a) primary valuation of \$4,740,000;²⁹³

²⁹³ Exhibit 64A.

- (b) first alternative valuation of \$5,851,100;²⁹⁴
- (c) second alternative valuation of \$3,565,000;²⁹⁵
- (c) third alternative valuation of \$3,909,000;²⁹⁶ and
- (d) fourth alternative valuation of \$1,714,000.²⁹⁷

In its final submissions the Council relied only upon the primary valuation and alternatives three and four.²⁹⁸

Hypothetical Development Method of Valuation

[237] Because Mr Henderson adopted the hypothetical development method of valuation, and this was the subject of criticism by the Council, it is appropriate to deal with that issue at this stage. The appellants assert that that is an appropriate method often utilised where there is an absence of comparable sales evidence, and the land is not developed. That method was described by Sugarman J in *A G Robertson Limited v The Valuer-General*²⁹⁹ in these terms:-

“When it is necessary to determine the unimproved value of land without the assistance of sales of comparable unimproved value, one or the other of two conventional methods is commonly employed. The one erects a hypothetical building upon the subject land, capitalises the anticipated net return there from, and subtracts the estimated building costs from capitalisation, the balance being treated as the unimproved value. The other method analyses sales of comparable improved land by subtracting the estimated value of improvements from the price paid, on the view that the balance of the price represents the “land value”.

Each method has, even in ordinary practice, and without the special difficulties of these cases, its limitations, its risks of error and its degree of dependents, varying from case to case, upon verifiable assumptions, conjecture or opinion ... but some

²⁹⁴ Exhibit 64 p. 15.

²⁹⁵ Exhibit 64B.

²⁹⁶ Exhibit 84. The figure of \$3,584,000 is for the northern severance only. To that must be added the value of the southern severance of \$325,000.

²⁹⁷ Exhibit 64 p. 17.

²⁹⁸ [32] above ; Appellants’ Submissions [51].

²⁹⁹ [1951-53] 18 NSWLGR 261 at 262.

risk of error and some element of opinion or conjecture or assumption may be unavoidable in the search for an entirely hypothetical figure.”

[238] Byrne J in *15 Lorimer Street v Dept Infrastructure*³⁰⁰ sounds caution on this method of valuation where His Honour said:-

“The claimant’s valuers, then, presented their opinions in terms of what is called a hypothetical development approach or, before me, a *Turner* analysis, so called after the decision of the High Court in *Turner v Minister of Public Construction* (1956) 95 CLR 245. This approach was described by Roper J in *Closer Settlement Ltd v the Minister* (1942) 17 LGR(NSW) 62 at 65 in the following terms:

“In arriving at the value of land which is suitable for subdivision a familiar and appropriate method ... is to estimate from whatever comparable sales of land in subdivision are available the price which would be realised by the land when sold; then to estimate the costs involved in the subdivision and the length of time that the realisation would take, making provision for the payment of rates and taxes and for interest on money outstanding; and an estimate net return on the land subdivision is obtained. It is of course clear that a person purchasing land in globo for the purposes of subdividing it would not pay the sum of money which is the present equivalent of the estimated return. Many factors in the calculation are speculative: the subject land in subdivision may not realise the prices which are at present expected, and the subdivision may take longer to realise than is at present anticipated. To compensate for the risk involved in the venture the purchaser would certainly discount the estimated returns.”

The weakness of the *Turner* approach is that it applies an apparently scientific formula to a great number of subjectively established variables. The operation of the formula is such that small variations to these variables can have a very great impact upon the result: see *Turner v Minister of Public Construction* (at 268) per

Dixon CJ. This has caused valuation judges of great eminence and experience to warn against a too ready reliance upon this approach: see *Brewarrana Pty Ltd v Commissioner for Highways (No 1)* (1973) 6 SASR 541 at 552-553; 32 LGRA 170 at 181, per Wells J (SA); *Gwyvill Properties Pty Ltd v Commissioner for Main Roads* (1983) 50 LGRA 322 at 326, per Cripps J (NSW); *Waal Homes Pty Ltd v Road Construction Authority* (1987) 64 LGRA 346 at 353-4, per Gobbo J (Vic); *Palmalco Pty Ltd v Minister Administering the National Parks and Wildlife Act 1974 (No 3)* (1991) 71 LGRA 441 at 447, per Hemmings J (NSW); *Coastal Estates Pty Ltd v Bass Shire Council* (at 577-578) per Gobbo J. One feature which runs through these warnings is the danger of applying the approach where the hypothetical development is not to be carried out within a reasonably short time: see *Cienda Pty Ltd v SA Urban Land Trust* (1988) 66 LGRA 360 at 363, per Jacobs J (King CJ and Bollen J concurring) (SA). It is for this reason that the approach is considered inappropriate when the subject land is not ripe for subdivision or development. Ripeness in this context, however, is a matter of degree and this restriction upon the approach is not to be applied in any mechanical way. What is in question is whether the value of the approach is so diminished by the uncertainties involved in the use of current estimates to future conditions that it lacks utility: see *Coastal Estates v Bass Shire Council* (at 576-577), per Gobbo J. I have no doubt that in the present case the hypothetical development approach to valuing the subject land is of no assistance where the development is to take place in 2004, 10 years after the relevant date. There being no other basis for valuation offered, the claimant cannot succeed in this case on the basis of the deferred construction option proposed by Mr Dudakov”.

- [239] The appellants recognised that the 13 year lead time on completion of the development may raise the issue of the ripeness of the land for subdivision, that is, whether or not it can be carried out within a reasonably short time as alluded to by Byrne J above. They say, however, that ripeness is a question of degree and does not play a great part in this case.³⁰¹ They rely on a statement by Callinan J in *Boland v Yates Property Corp Pty Ltd*³⁰² where His Honour acknowledged that the Court had accepted the hypothetical development method of valuation which was neither novel nor especially difficult but, as with all methods, required the making of value judgments. His Honour was there

³⁰⁰ [1997-98] 97 LGERA 239 at 252.

³⁰¹ Appellants’ Submissions [4.12]-[419].

³⁰² (1999) 74 ALJR 209 at 268 [286]-[289].

dealing with a negligence case where it was alleged that the valuers and lawyers preparing a compensation case were negligent because they were in favour of this method of valuation. Relevantly, His Honour did not refer to *15 Lorimer Street*³⁰³ and I cannot see that he was referred to it. I do not take his statement to intend or indicate any watering down of the cautionary words of Byrne J in *15 Lorimer Street*.

[240] The next basis for the appellants' view of the minimal role of the ripeness for development issue is based on a statement by Gobbo J in *Coastal Estates Pty Ltd v Bass Shire Council*³⁰⁴ where His Honour said that, where possible a valuation should be based on comparable sales but where there are no such sales, then the use of the hypothetical development method was necessary. This is just the case according to the appellant because the Council's valuer, Mr Slater, was of the opinion that there were no comparable sales.³⁰⁵ I should say that Mr Henderson did rely upon some comparable sales to support his valuation.³⁰⁶

[241] The statement of Gobbo J must be read in context. In *Coastal Estates* the issue of the relevant method of valuation arose in relation to when the subject land could be subdivided having regard to the provision of reticulated sewerage. The relevant date in that case was February 1989 and the best estimate for the provision of the sewerage was three years, although by the time of the hearing finishing on 8 February 1993, it had not been provided. On the issue of the appropriateness of the hypothetical subdivisional analysis method contended for by the complainant His Honour said:-³⁰⁷

“The discussion in the present case has focused too much on the issue of time and the debate as to whether three years delay is or is not decisive. In my view the passage of time is not always decisive and the analysis method may be inappropriate even in cases where the time delay is less than three years.

It is a question of fact in each case as to what is the appropriate method and it is unwise to seek to lay down prescriptive rules in this matter. At the same time, it is reasonable to regard a period of three years before any significant development and sale as raising a very real doubt as to this method because of the uncertainties involved in use of current estimates of sale prices and costs.

³⁰³ *15 Lorimer Street v Dept Infrastructure* [1997-98] 97 LGERA 239.

³⁰⁴ [1993] 2 V.R. 566 at 576-577.

³⁰⁵ T19.71.

³⁰⁶ Exhibit 64 p. 9; T18.54.50.

In my view the starting point is that the valuation should, if possible, be founded on sales of comparable land. This is subject to the following qualifications and the particular circumstances of the case.

- (a) where there are no comparable sales then the use of the analysis method is necessary;
- (b) ...;
- (c) ...;

It can be seen then that, whereas His Honour accepted that in the absence of comparable sales evidence, the hypothetical method was necessary, he expressed reservations about the helpfulness of any such analysis based upon a development beyond three years. Of course the three year period was the period he was dealing with in relation to the sewerage installation. His Honour was not seeking to identify what length of time would or would not be a reasonable period as is evidenced by his caveat that no prescriptive rules should be set down on the issue. The point I make, however, is that there is a legitimate distinction between, on the one hand, circumstances identifying the use of the hypothetical method of valuation as appropriate, and on the other hand what assistance such a valuation can render to the court. Put another way, even if it was the only method available, that does not necessarily determine what assistance, if any, any such analysis may render. Depending on how far away the proposed subdivision is anticipated, the analysis may well create the types of uncertainties as to estimates of sale prices and costs referred to by Gobbo J above.

Primary Valuation - \$4,740,000

[242] This valuation of \$4,740,000 rests on the following assumptions:-

- (a) that the development depicted in the Covey Plan was achievable;
- (b) the total development costs would be \$35,740,880 being the estimate of Mr Covey;³⁰⁸
- (c) the allowance of a 40% (\$19,788,109) profit and risk allowance; and

³⁰⁷ [1993] 2 VR 566 at 576.
³⁰⁸ Exhibit 32 dealt with above.

- (d) an overall development period of 13 years with approvals being obtained in the first 3 years and the remaining 10 years required to sell the lots at approximately 100 lots per calendar year.

As the appellants put it, on this valuation, if accepted by a prudent purchaser, a profit of \$19.7m could be achievable in up to 13 years.

Henderson First Alternative Valuation Basis - \$5,851,100

- [243] The first alternative valuation of Mr Henderson is \$5,851,100³⁰⁹ based on the development as per the Covey Plan, but adopting Mr Monson's estimate of the development costs of \$36,273,565 rather than those of Mr Covey of \$35,740,880 relied upon in the primary valuation. There are also different further estimated costs of rates, interest, holding charges, legal and stamp duties. In all valuations those figures vary one to the other.

Henderson Second Alternative Valuation Basis - \$3,565,000

- [244] The next alternative valuation of Mr Henderson is \$3,565,000.³¹⁰ That is based on the development as per the Covey Plan, but adopting Dr Johnson's estimate of the development costs of \$37,977,681.

Henderson Third Alternative Valuation Basis - \$3,909,000

- [245] The next alternative valuation figure is \$3,909,000 which is the figure of \$3,584,000 for the northern severance of the land³¹¹ plus the value of the southern severance of \$325,000. This valuation is based upon a reduction in the number of proposed lots from 1,115 to 590. To understand the reason for this alternative valuation being advanced it is necessary to explain the amendment to the Covey Plan.

Amended Covey Plan

- [246] In evidence Dr Olsen identified by reference to the Covey Plan³¹² the Land's dryland and wetland communities. By reference to Exhibit 19 the wetland communities are marked with numbers 1 to 5(b) and the dryland communities with numbers 6 and 7. On that Exhibit Dr Olsen has shaded the dryland areas 6 and 7. It will be recalled that he also gave evidence that he considered an appropriately sized buffer to protect the wet heathland from the adverse effects of development on

³⁰⁹ Exhibit 64 p. 15.

³¹⁰ Exhibit 64B.

³¹¹ Exhibit 84.

³¹² Exhibits 19 and 20. T10.8.20.

adjacent lands was 40 m.³¹³ It was against this background that Mr Henderson prepared the third alternative valuation. He marked on a copy of the Covey Plan a strip representing the 40 m buffer zone to the wetland areas.³¹⁴ That shows that the proposed development under the amended Covey Plan would be confined to the dryland areas representing the following reduction of development³¹⁵:-

Proposed Development	Covey Plan	Amended Covey Plan
Residential A	1,034 lots	586 lots
Residential B	59 lots	Nil
Light Industry	10 lots	Nil
Commercial Sites	9	4
Primary School site	1.908 ha	Nil
Community/Church	2	Nil

In this valuation the profit and risk factor was struck at 35% (\$9,316,644) which the appellants say compares favourably with the standard allowance of 30% applying when rezoning had already been obtained, and would represent an attractive proposition to a potential purchaser who would invest \$3,909,000 (\$3,584,000 Northern Severance; \$325,000 Southern Severance) to reap a profit of \$9,316,644 in 7 years, being the shortened term of the development given the reduced development.

Henderson Fourth Alternative Valuation Basis - \$1,714,000

[247] The final alternative valuation of Mr Henderson is a figure of \$1,714,000³¹⁶ based upon the approach taken by the Land Court in December 1994 in determining the compensation claimed by the appellants resulting from the resumption of part of the Land for the Motorway. The Land Court proceeded on the basis that the development potential of the Land was limited to the north-eastern severance.³¹⁷

³¹³ T10.20.5-30.

³¹⁴ Exhibit 83.

³¹⁵ See Exhibits 64B and 84.

³¹⁶ Exhibit 64 p. 17.

³¹⁷ Exhibit 86 Land Court decision p. 20.

Council's Criticisms of Appellants' Valuations

[248] The Council says, 'that the Henderson valuations fail to reflect any risk as to the prospect of rezoning being approved'. They point to a joint letter dated 17 September 2008³¹⁸ from the valuers to the parties' legal advisors identifying divergent views of experts in relation to fauna, absence of any meaningful material on flora, the opposing views of the town planner and the absence of any consideration of less intensive or extensive development resulting from flora, fauna, agricultural land, or town planning considerations. The Council's point is that those issues were issues in September 2008, yet are not mentioned in Mr Henderson's reports. It is clear that Mr Henderson's valuations proceed on the basis that the development proposal would proceed with all necessary approvals. His stated opinion is that the highest and best use is a development based on 1,115 lots³¹⁹ which is what the Covey Plan envisages.

[249] The Council argues that the hypothetical development method is thwart with difficulties and points to the 25% difference in the value per hectare originally attributed to the Land by Mr Henderson³²⁰ when his valuation figure was \$6,200,000, later reduced to \$4,740,000.³²¹ The valuation of \$6,200,000 was Mr Henderson's original primary valuation but was not relied upon by the appellants.³²² Instead they substituted the primary valuation of \$4,740,000 for that figure.³²³ But, relying on that first primary valuation, the Council says that it represented a value of \$40,000 per hectare reducing to \$30,000 per hectare of a valuation of \$4,740,000 over the approximate 155 hectares. Further, it says, 'the valuation based on the amended Covey Plan³²⁴ involving development only of the northern severance is a further 25% reduction on the revised value of \$4,740,000'.³²⁵ That latter proposition is not correct. The primary valuation of \$4,740,000³²⁶ is a valuation of the entirety of the Land, whereas the valuation based on the amended Covey Plan³²⁷ is for the Northern Severance only (\$3,584,000) to which must be added the value of the Southern Severance of \$325,000, giving a total of \$3,909,000. The correct difference between the valuation is \$831,000 representing a reduction of 17.5%.

³¹⁸ Exhibit 63 Annexure D1.

³¹⁹ Exhibit 64 p. 2 [3].

³²⁰ Exhibit 64 p. 13.

³²¹ Exhibit 64A.

³²² Exhibit 64 p. 14.

³²³ Exhibit 64A.

³²⁴ Exhibit 84.

³²⁵ Exhibit 64A.

³²⁶ Exhibit 64A.

³²⁷ Exhibit 84.

[250] The Council then points to the difference between the original valuation figure of \$6,217,850³²⁸ and the \$3,909,000 based on the amended Covey Plan, a difference of \$2,308,850 or 37%. Mr Henderson acknowledged in cross-examination that there would be certain development costs which would not reduce as a result of the reduction in the number of lots from 1,115 to 590.³²⁹

[251] The council argues that the 13 year lead time from point of application for approval to the final realisation of profit, upon which Mr Henderson's primary valuation is predicated, makes the use of the hypothetical development method highly unreliable in this case. It relied upon *Ducks v Chief Executive Department of Natural Resources and Water*³³⁰ where a review of various authorities on the issue was undertaken. Several of those authorities³³¹ are consistent with the principle that, for this method of valuation to be appropriate, the land must, at point of valuation, or within a short predictable time thereafter, be ripe and ready for subdivision. Council further referred me to *Brewarrana Pty Ltd v Commissioner of Highways*³³² a decision of the Supreme Court of South Australia where Wells SJ said:-

“Plainly a calculation based on a hypothetical subdivision will not be vitiated simply because some very slight delay might be experienced before realisation could begin, but an inordinate delay of say, several years could equally plainly render the whole undertaking so speculative that a conclusion as to the value would be wholly unreliable.”

[252] The considerations underlying the principle of the appropriateness of the hypothetical development valuation method really accord with common sense. The longer the period of time between a hypothetical calculation and the realisation of the end profit, the greater opportunity there is in changing economic conditions and for the costing structure and market forces to change. As I earlier identified in discussing *Coastal Estates*, the longer out that period is, the higher the risk that the hypothetical calculation will be less reliable than if subdivision occurred soon after it.

[253] Another criticism levelled at the amended Covey Plan and the valuation based upon it, was the fact that the only expert who has had the opportunity to address it, was Mr Henderson. It is true that none of the other experts were afforded the opportunity to provide their opinion in relation to it because of the fact that it materialised so close to the end of the trial but no application was made by either side

³²⁸ Exhibit 64 p. 14.

³²⁹ T19.4-5.

³³⁰ [2009] QCL0081 [14]-[19].

³³¹ *Crompton v Commission of Highways* [1973] 32 LGRA 8 at 20; *Cienda Pty Ltd v SA Urban Land Trust* [1988] 66 LGRA 360 at 363-365; and *Redeem v SA Land Commission* [1977] 40LGRA 151.

to recall any other experts. Having said that, given that all experts prepared their evidence on the basis of the Covey Plan, consideration and preparation of evidence in relation to the amended Covey Plan would not have been a small exercise for each of the experts and a recall would have, in my view, involved a delay in the hearing. That would have been a relevant consideration for both parties in deciding whether or not to recall evidence. In the result, however, the fact is I have not had the benefit of the advice of other experts on the amended Covey Plan.

- [254] Finally, the Council rejected the comparable sales relied upon by Mr Henderson as clearly not comparable and relied upon Mr Slater's opinion to that effect.

Council's Valuation Evidence – Mr Slater

- [255] The Council's valuer, Mr Slater, was of the view that any application for subdivision would not be successful, but on the assumption it was obtained, he said, 'the demand for lots in the development would be insufficient to achieve a financially viable development, and valued the land the same as on the agreed after basis at \$750,000.³³³ He disagreed with Mr Henderson that the hypothetical development method was an appropriate method of valuation.³³⁴ In explaining his position he said, that the timeframe for development was fundamental to the use of the hypothetical methodology because there was so many subjective judgments involved so that the further out in time the potential start of the development was the less reliable were those subjective assumptions.³³⁵
- [256] Mr Slater was asked to identify the elements missing in the present case to make the hypothetical approach worthwhile. He identified the critical assumptions as firstly predicting future rate of sale of lots with the prospect of Peregrine Springs and Coolum Ridges coming on stream as very difficult. Next he referred to the holding costs, and the interest on development costs. He considered that the uncertainty of the proposed development made it impossible to select a profit and risk factor and said, that it was generally regarded that once that factor got close to 50% the hypothetical development methodology was not appropriate. He also identified the uncertainty and difficulty in projecting out selling prices and said, that none of Mr Henderson's prices relied upon in his valuations were supported by the evidence.³³⁶
- [257] He was questioned as the advice he would give to a hypothetical purchaser who had rezoning approval to permit development in accordance with the Covey Plan. He said, that if, at point of

³³² [1973-76] 32 LGRA 170 at 181.

³³³ Exhibit 63 p. 17 [21.1].

³³⁴ Exhibit 64 pl. 2 [4].

³³⁵ T20.11.30.

³³⁶ T20.11.32-60; 20.12.1-47.

advice he had conducted the same level of investigation as he had in preparation for this case, thus giving him knowledge of the development costs, likely gross realisation, risks involved with the prospect of the competing states of Peregian Springs and Coolum Ridges, it would not take much of an exercise on his part to conclude that the Land had a value of below zero on a hypothetical development method approach. He said, that if the lot pricing in Mr Henderson's valuation was more realistic and the proper interest figure calculated, the land value in his report would very quickly come down to zero. That, he said, would apply to any of Mr Henderson's hypothetical valuation exercises.³³⁷

Appellants' Criticism of Slater Valuation

- [258] The appellants identified five propositions in Mr Slater's evidence which they said, should not be accepted by the Court. Firstly, they said, 'he proceeded on the basis that the Land had no realisable urban development potential when, in fact, it did have'. Secondly, they pointed to his evidence that even if the urban area component of the Land was the subject of a rezoning approval to permit development in accordance with the Covey Plan, it would still not be worth one cent more in terms of market value'.³³⁸ I have referred in the preceding paragraph to further passages from Mr Slater's evidence which came after this evidence. The appellants say his evidence of no increase in value even with the rezoning approval as extreme and contrary to ordinary experience.
- [259] Next, the appellants criticise Mr Slater's reliance upon the Norfolk Estates contract and the fate of the appeal by Norfolk Estates and point to the fact that his reliance upon that was premised on his not having given any great significance to the relevance of the draft Strategic Plan in that appeal. The appellants' view is that any purchaser would have been encouraged by the outcome in that appeal because it did not involve any allegation by the Council of conflict or inconsistency with the 1985 Strategic Plan, but rather referred to the draft Strategic Plan. I have dealt with that point elsewhere.
- [260] Fourthly, the appellants say, 'that Mr Slater having rejected the hypothetical development method of valuation, also concluded there was no comparable sales which left him in the position where he could be of no assistance to the Court on the question of valuation'. That is not correct, because, of course, Mr Slater expressed the view that the value of the Land on a before basis was \$750,000 on the basis that it had no developmental potential.
- [261] Finally, the appellants say, 'that Mr Slater's evidence was premised on the fact that there was no demand or market for the proposed residential lots at the relevant time'. The appellants argue that

³³⁷ T20.13.1-30.

the lack of demand resulted from the absence of developer stock which issue has been dealt with earlier in this judgment on the issue of need.

Other Valuation Issues

- [262] Apart from the above main issues, there were other differences of opinion between the parties arising from the valuation evidence relating to advertising costs, profit and risk factor, rates and land tax, charges, holding charges, and interest charges. None of those, in my view, were of sufficient magnitude to make any appreciable impact on the figures relied upon by Mr Henderson in his valuations having regard to the numbers involved.

Conclusion re Valuation Evidence

- [263] I consider that a properly advised purchaser, having regard to the authorities on the appropriateness of the hypothetical development method of valuation and Mr Slater's evidence, would have serious doubts as to its appropriateness. Further, I consider that the differences of opinion between the valuers would leave the purchaser with a serious question in his mind as to what, indeed, was the true value of the Land on an urban development basis and what level of profit, if any, would be available in the event of any development in accordance with the Covey Plan. Those reservations would heighten in relation to the development in accordance with the amended Covey Plan given the substantial reduction in the number of developed lots contemplated coupled with the absence of a corresponding reduction in the project costs given that some would remain constant whatever the number of lots. The purchaser, properly advised, could not, in my view, have confidence as to value by reference to Mr Henderson's valuations.

PURCHASER'S FINAL DECISION

- [264] In my view, against the background of the purchaser's imputed assessment of each of the issues I have dealt with, he would conclude, on balance, that approval for development of the Land for urban purposes in accordance with the Covey Plan or the amended Covey Plan would not be granted. He would further conclude that the highest and best use of the Land was for development of seven 20 ha rural lots as agreed between the parties on the after case. The purchaser would pay no more than its value on that basis, agreed at \$750,000.
- [265] It follows that I am unpersuaded that there is any difference between the market value of the Land immediately after the time of coming into effect of the 1996 Strategic Plan and its market value had

that Plan not come into operation³³⁹ with the result no compensation is payable. The appeal is dismissed.

³³⁹ PEA s 3.5(8)(a).

Schedule “A”

STATE PLANNING POLICY 1/92

- 3.3 Nevertheless, development without regard to the need for land conservation and the continuing importance of agriculture would be unacceptable. The best and most versatile farming land has a special importance and should not be built on unless there is an overriding need for the development in terms of public benefit and no other site is suitable for the particular purpose. This land is a valuable resource that should, in general, be protected from irreversible development. In such cases, additional weight needs to be given to the agricultural factor.
- 4.1 Local authorities will be expected to include provisions regarding the conservation of good quality agricultural land when preparing, amending or reviewing planning schemes, particularly when framing strategic plans, development control plans or local planning policies. Applications for rezonings, consent uses and subdivision should be considered in the context of such provisions. In the absence of specific agricultural land provisions, or where such provisions are considered inadequate, the Government will be guided by the principles set out in this Policy when considering applications for the approval of planning schemes, rezonings and other scheme amendments.
- 4.4 Although the demand for agricultural products fluctuates, once land is built on or subdivided, its return to agriculture is seldom practicable. Therefore, a decline in the market for a particular crop should not justify development on land traditionally used for growing that crop. Markets change and the land could be cultivated for other purposes.
- 4.5 Similarly, land ownership and the size of farm holdings should not override land quality when determining a site’s suitability for development. A policy which would allow the development of small sites or holdings irrespective of land quality, would merely encourage fragmentation of ownership followed by further development pressures. The viability of farm holdings varies with the crops selected, and tenure patterns are flexible: an appropriate choice of crop or amalgamation of holdings can overcome the problem of the uneconomic farm unit. Therefore, land subdivision policies and controls should not inhibit restructuring and farm amalgamation: in some instances subdivision will be necessary to enable the assimilation of parcels with adjoining properties.

- 4.6 Cases will arise where local authorities have to consider development proposals on good quality agricultural land. In such instances, a 'key' principle should be whether an overriding need in terms of benefit to the community can be demonstrated for development at that particular location.
- 4.8 The proximity of development, particularly where there is a significant residential component, can inhibit farming practice, thereby limiting the extent to which the inherent land quality can be exploited: for example, crop spraying and cane burning are two operations which cause conflicts with adjoining residential properties. Clearly, such conflicts should be avoided if possible but, where new developments have to be located on or adjacent to good quality agricultural land, measures to ameliorate potential conflict should be devised wherever practicable.
- 4.9 There should be no financial compensation implications for local authorities as a result of implementing this Policy. The various provisions described above should all be based on the premise that existing commitments stand and that 'down zoning' is not being advocated.

POLICY PRINCIPLES

1. Good quality agricultural land has a special importance and should not be built on unless there is an overriding need for the development in terms of public benefit and no other site is suitable for the particular purpose (Section 3).
2. The alienation of some productive agricultural land will inevitably occur as a consequence of development, but the Government will not support such alienation when equally viable alternatives exist, particularly where developments that do not have very specific locational requirements (for example, 'rural residential') are involved (Paragraphs 4.6-4.7).
3. When preparing, reviewing or amending planning schemes, local authorities will be expected to include provisions for the conservation of good quality agricultural land, regardless of the effect of market fluctuations on its viability (Section 4).
4. The preparation of strategic plans should include an evaluation of alternative forms of development, and significant weight should be given to those strategies which minimise the impacts on good quality agricultural land (Paragraph 4.2-4.3).
5. Due consideration should be given to the protection of good quality agricultural land when applications for rezonings, consent, or subdivision are being determined (Paragraph 4.1).
6. Where a planning scheme does not 'contain adequate agricultural land conservation provisions, the Government will be guided by the principles set out in this Policy when considering applications for the approval of planning schemes, rezoning and other scheme amendments (Paragraph 4.1).
7. The fact that existing farm units and smallholdings are not agriculturally viable does not in itself justify their further subdivision or rezoning for non-agricultural purposes. Subdivision provisions and policies should be devised in a way that encourages amalgamation of titles where this would enhance farm viability (paragraph 4.5).
8. Local Authority planning provisions should aim to minimise instances of incompatible uses locating adjacent to agricultural operations in a manner that inhibits normal farming practice. Where such instances do arise, measures to ameliorate potential conflicts should be devised wherever possible (Paragraph 4.8).

Note: The Policy principles should be read in conjunction with the main text.

Schedule “B”

Planning Guidelines:

The Identification of Good Quality Agricultural Land

- 2.1 *Good quality agricultural land* is land which is capable of sustainable use for agriculture, with a reasonable level of inputs, and without causing degradation of land or other natural resources. In this context, *agricultural land* is defined as land used for crop or animal production, but excluding intensive animal uses such as feedlots, piggeries, poultry farms and plant nurseries based on either hydroponics or imported growth media.
- 2.2 Four classes of Agricultural Land have been defined for Queensland (Refer Table 1 and Attachment 1). Class A land in all areas is considered to be *good quality agricultural land*. In some areas, Class B land (where agricultural land is scarce) and better quality Class C land (where pastoral industries predominant), are also considered to be *good quality agricultural land*.

Table 1

Agricultural Classes	Description
Class A	Cropland – land that is suitable for current and potential crops with limitations to production which range from none to moderate levels.
Class B	Limited cropland – land that is marginal for current and potential crops due to severe limitation; and suitable for pasture. Engineering and/or agronomic improvements may be required before the land is considered suitable for cropping.
Class C	Pasture land – land that is suitable only for improved or native pastures due to limitations which preclude continuous cultivation for crop production; but some areas may tolerate a short period of ground disturbance for pasture establishment.

Class D	Non-agricultural land – land not suitable for agricultural uses due to extreme limitation. This may be undisturbed land with significant habitat, conservation and/or catchment values or land that may be unsuitable because of very steep slopes, shallow soils, rock outcrop or poor drainage.

- 2.3 Agricultural land classes are based on an assessment of the agricultural suitability of the land for specified agricultural uses. Agricultural land suitability is a rating of the ability of land to maintain a sustainable level of productivity. The factors used to assess agricultural land suitability are the soil, topographic and climatic limitations which determine sustainable productivity. Explicit evaluation of economic factors such as the size of production units, are not included as they are not considered relevant to the quality of the resource. Methods of agricultural land suitability assessment have been published by the Department of Primary Industries (DPI) and others (see Section 10).
- 2.4 Existing land resource mapping throughout the State has been interpreted to this classification contained in Table 1³⁴⁰ to provide information on the location of *good quality agricultural land*. This is a simplification of existing land resource information, to enable the best agricultural resources within each local authority area to be identified for planning purposes. Attachment Figure 2 provides this interpretation based on the best available information.
- 2.5 The definition of what constitutes *good quality agricultural land* within a local government area is a DPI responsibility, although local agricultural industries, local authorities and other relevant groups will be consulted.
- 4.1 State Planning Policy 1/92 applies to all areas of *good quality agricultural land*, irrespective of whether farming activity is present. When assessing planning applications, the following issues need to be considered to determine what information is required and how the Policy should be applied.

³⁴⁰ Supra.

- 4.4 Any proposals on site ‘committed’ as defined above should normally be considered on their planning merits without reference to the agricultural issues. In these circumstances, an agricultural land quality assessment would clearly be unnecessary.
- 4.5 Rejecting proposals for development despite some commitment in the planning scheme could have compensation implications. Therefore only in exceptional cases should consideration be given to setting aside a commitment because of the need to retain a particular site in agricultural use. For example, the loss of land from agricultural production might prejudice the viability of the processing industry such as a sugar mill. In such cases, an assessment of a site’s agricultural quality would be required to substantiate the case for retention.
- 4.9 In all other cases the agricultural quality of the subject land should be established to determine whether the principles of State Planning Policy 192 are applicable.
- 4.12 If the subject land is found to be *good quality agricultural land*, the local authority should refuse the application unless:
- There is an overriding need in community terms of public benefit for the proposal, and the proposal cannot be located on alternative sites of poor agricultural quality; or
 - The subject land is located so that farming, either along or in association with surrounding parcels, is not practicable: for example, a small isolated parcel of land surrounded by urban land uses.
- 4.16 Instances of proposals for residential development on good quality agricultural land are likely to be more frequent. In such cases, the need for the development should be established in the context of other undeveloped land designated for urban or residential development by the strategic plan. Also relevant is the availability of alternative sites that are not of good agricultural quality, but could be serviced reasonably and could meet the same housing demand. Where an area is reasonably close to the local authority boundary, consideration of suitable alternative sites should include those in the neighbouring local authority.
- 5.1 Information on land resources is available at different levels of detail and presented on maps at different scales, depending on the intensity of data collection. These Guidelines differentiate between broad-scale information (1:50 000 – 1:500 000 scale) appropriate for strategic and regional planning; and detailed information (1:2 500 to 1: 10 000) which is essential for detailed land resource assessment and processing of planning applications.

- 5.2 Land resource information has been collected at a broad-scale by DPI and CSIRO, and is available for most areas of the State , however, the application of this information to detailed development assessment is limited.
- 5.7 Where development of rural land is proposed, the broad scale maps in strategic plans or other sources should be used by local authorities to indicate to proponents whether *good quality agricultural land* is likely to be affected.³⁴¹ In cases where such information indicates that the subject land has no agricultural land of good quality, further analysis is usually unnecessary. However, if the local authority has additional information suggesting the subject land is *good quality agricultural land*, then a detailed assessment should be requested. Some weight may be given to any history of previous cultivation and/or erosion of the subject land.
- 5.8 If *good quality agricultural land* is indicated on the maps, the proponent may wish to apply for ‘consideration-in-principle’ where local authorities have this provision available. The local authority may either declare its opposition to the proposal at this stage or specify that a detailed assessment of land resources should be included with any formal application submitted. In some cases, the broad-scale mapping information may be sufficient for the assessment of planning applications in the areas of uniform suitability for agriculture.

³⁴¹

In this case the broad scale mapping by Capelin indicates six land use categories that are considered by DPI to be good quality agricultural land. Those categories include the subject land.

Appendix 5 – Gillion judgment

PLANNING & ENVIRONMENT COURT OF QUEENSLAND

CITATION: *Gillion Pty Ltd v Scenic Rim Regional Council and Ors*
[2013] QPEC 15

PARTIES: **GILLION PTY LTD**
(appellant)

and

SCENIC RIM REGIONAL COUNCIL
(respondent)

and

PENNY AAGAARD AND ORS
(first Co-respondent by election to 83rd Co-respondent by election)

and

**CHIEF EXECUTIVE, DEPARTMENT OF
TRANSPORT AND MAIN ROADS**
(84th Co-respondent by election)

And

**TAMBORINE MOUNTAIN PROGRESS
ASSOCIATION INC**
(85th Co-respondent by election)

And

EAGLE HEIGHTS VILLAGE ASSOCIATION INC
(86th Co-respondent by election)

FILE NO/S: BD 4506 of 2011

DIVISION: Planning and Environment Court

PROCEEDING: Appeal

ORIGINATING COURT: Brisbane

DELIVERED ON: 3rd May 2013

DELIVERED AT: Brisbane

HEARING DATE: 19th November 2012 – 24th November 2012; 21st December 2012; 29th January 2013 – 1st February 2013, 4th April 2013

JUDGE: Robertson DCJ

ORDER: **Appeal Dismissed**

CATCHWORDS: **PLANNING AND ENVIRONMENT:** Merits appeal to regularise an existing use of commercial extraction of groundwater declared by this Court to be unlawful; where issues of impact on groundwater Aquifers, noise associated with use and traffic safety over haul route.

CONFLICT WITH PLANNING SCHEME: where Respondent alleges that use conflicts significantly with Planning Scheme from Strategic Provisions to Precinct Provisions, whether amenity (both tangible and intangible) provisions in Planning Scheme are in conflict with the use, where Co-respondents allege use conflicts with Commercial Extraction of Groundwater Code; where Respondent alleges that use is an Inconsistent Use in the Tamborine Mountain Zone Code and is therefore a locationally inconsistent use in significant conflict with the Planning Scheme as a whole, where appellant accepts that there is conflict but categorises it as technical or mechanical.

GROUND: whether sufficient grounds exist to approve notwithstanding conflict, whether absence of unacceptable impacts on “hard” amenity is a “ground”; where appellant argues that there is a strong planning need for groundwater from this site, where only witness called in support of this ground is principal of appellant company.

TRAFFIC ISSUES: where traffic safety issues in traffic evidence, where DTMR brought in as a Referral Agency by some of the Co-respondents, where DTMR and appellant reached agreement after all traffic evidence of conditions to be imposed if appeal allowed, where DTMR conditions require a change of the haul route from Tamborine Mountain Road to Tamborine/Oxenford Road which will take water tanker through “Gallery Walk”, a major tourist hub on the Mountain, where conditions will require appellant to upgrade important intersection at Curtis Falls another tourist hub on the Mountain.

AMENITY: whether impacts on intangible aspect of amenity leads to conflict with Planning Scheme, where hard impacts can be made acceptable by the imposition of condition.

PRIOR LAWFUL USE RIGHT: whether this Court in enforcement proceedings decided that appellant had pre-existing lawful use rights to extract groundwater from the site under the Superseded Planning Scheme; whether evidence is sufficient to determine the nature of the use in earlier times.

Legislation:

Integrated Planning Act 1997 (Qld)

Planning and Environment Court Rules 2010 (Qld)

Sustainable Planning Act 2009 (Qld)

Cases:

AAD Design Pty Ltd v Brisbane City Council [2012] 136 L.G.E.R.A 390.

Ackland Pastoral Co Pty Ltd v Rosalie Shire Council & Ors [2008] Q.P.E.L.R 342.

Baptist Union of Queensland v Brisbane City Council & Anor [2003] QPELR 61.

Broad v Brisbane City Council and The Baptist Union of Queensland [1986] 2 Qd.R 317.

Gillion Pty Ltd v Scenic Rim Regional Council & Ors [2012] QPEC 33.

Histpark Pty Ltd and anor v Council of the Shire of Maroochy [2002] Q.P.E.L.R. 135.

K Page Main Beach v Gold Coast City Council [2011] LGERA 180.

Leda Holdings Pty Ltd v Caboolture Shire Council and Ors [2006] QCA 271.

Lockyer Valley Regional Council v Westlink Pty Ltd & Ors (2011) 185 LGERA 63.

Lockyer Valley Regional Council v Westlink Pty Ltd & Ors [2012] QCA 370.

Luke & Ors v Maroochy Shire Council & Watpac Developments [2003] QPELR 447.

Scenic Rim Regional Council v Gillion Pty Ltd [2010] QPEC 115.

Stappen Pty Ltd v Brisbane City Council & Ors [2005] Q.P.E.L.R. 466.

Telstra Corp Ltd v Pine River Shire Council [2001] QPELR 350.

Weightman v Gold Coast City Council [2003] 2 Qd.R.441.

William McEwens Pty Ltd v Brisbane City Council [1981] 1 QPLR 33.

Woolworths Ltd v Maryborough City Council & Anor [2006] 1 Qd.R. 273.

COUNSEL: Mr M Williamson and Mr J Lyons for the appellant
 Ms P Djohan for the Respondent
 Mr R Litster SC for the 84th Co-respondent (DTMR)
 Mr R Laidely for the Co-respondents (22,28,29, 35, 63, 72, 73, 74, 85 & 86th)

SOLICITORS: HWL Ebsworth for the appellant
 Corrs Chambers Westgarth for the Respondent
 Hopgood Ganim for the 84th Co-respondent
 McCarthy Durie Lawyers for Co-respondents (22,28,29, 35, 63, 72, 73, 74, 85 & 86th)
 Mr S Guerin (self-represented)
 Mr S Wright (self-represented)

- [1] The appellant (Gillion) appeals against a decision of the respondent (the Council) dated the 25 October 2011 received by Gillion on the 28th of October 2011 whereby the Council refused Gillion's application for a development permit for a material change of use for commercial groundwater extraction with respect to land located at 22-26 Power Parade, Mount Tamborine, in the State of Queensland and more particularly described as Lot 87 on RP168897 (the site).
- [2] Gillion's development application was lodged with the Council on or about the 22 February 2011. It followed on from successful enforcement proceedings taken by the Council against it which was the subject of the judgment of this Court dated the 10 September 2010: *Scenic Rim Regional Council v Gillion Pty Ltd* [2010] QPEC 115.
- [3] The site is situated within the boundaries of the Council and within the former Beaudesert Shire Local Government area. The site is rectangular in shape with an area of approximately 8,070m² and has a frontage to Power Parade of approximately 45 metres.
- [4] The site slopes to the south-west from the rear boundary towards the Power Parade frontage and is fully fenced and contains a detached dwelling at the rear, disused sheds and water tanks (understood to have been associated with a previous hydroponics operation), a sealed driveway including a tanker truck turnaround and

two 20,000 litre stainless steel tanks associated with the commercial groundwater extraction use, and a storage shed within which the electric pump and associated infrastructure is located for groundwater extraction.

- [5] It is common ground that groundwater has been extracted from the site for sale since the early 90's. The application therefore before the Court relates to a use (declared unlawful by this Court) which is continuing at the present time.

The proposed use

- [6] As described in the town planning joint experts report commencing at page 1105 of Exhibit 1C, the proposed development contemplates three separate and sequential components:

- (a) The extraction of the water from the sub artesian source using a single bore;
- (b) The storage of the water onsite within two 20,000 litre tanks; and
- (c) The transportation of the water off-site.

- [7] The extracted water passes through a segmentation filter between the bore and the storage tanks (located within a storage shed). There is no other processing, treatment or bottling of water proposed to be undertaken onsite.

- [8] The quantity of loaded truck movements to transport the water offsite is proposed to be limited to a maximum quantity of 20 loaded movements per week (i.e. on average up to a maximum of four loaded movements per day), with a maximum weekly extraction of 564,000 litres. Similarly, the days, and the times of those days, within which the truck is proposed to operate onsite and in association with the proposed land use, are proposed to be restricted to 7.30 a.m. to 6.00 p.m. Monday to Friday.

- [9] The truck is typically onsite for a period of approximately 25 minutes, being the time it takes for the truck to enter the site, turn around, for the tanker trailer to be filled and for the truck to then exit the site. I note that the turnaround time on occasions witnessed by Mr Guerin (who with his wife is the 30th Co-respondent by

Election) however, the 25 minute turnaround on average was accepted by all town planners and is recorded at paragraph 54 of the joint expert report.

- [10] With the exception of the driver of the truck, who also operates the pump to load the tanker trailer, there are no other permanent employees or regular visitors associated with the proposed land use onsite.

- [11] The electric pump which conveys the water from the storage sheds to the outlet point is contained within an existing domestic type shed on site. The pump occupies only a small portion of that shed with the balance of the area used for general storage of goods and materials. There are no other permanent buildings or structures associated with the Commercial Ground Water Extraction use onsite.

- [12] The combined total length of the current truck and tanker trailer is approximately 15.3m. It is a “cab forward” design and is equipped with GPS and monitoring devices to monitor driver behaviour.

- [13] Although more relevant to other issues, the water is transported to a factory and plant at Stapylton (in the Gold Coast Shire) where it is filtered and bottled and distributed for sale throughout Queensland and Australia. The factory is owned by Wetfix Pty Ltd which bottles and distributes the water. Wetfix Pty Ltd is a wholly owned subsidiary of Gillion.

The Planning Framework

- [14] The development proposal is to be assessed against the Beaudesert Shire Planning Scheme which took effect in 2007 (the Planning Scheme) at a time that the now repealed *Integrated Planning Act* 1997 was still in force (the IPA). At the time of the commencement of the Planning Scheme, section 2.1.23(1)(b) of the IPA imposed a statutory bar to prohibiting development on, or the use of, premises.

The reasons for refusal and disputed issues

- [15] In its decision notice, Council identified eight reasons for refusal. The disputed issues have been expanded by contributions by all parties, in particular, an amended consolidate list of issues in dispute dated 30 January 2012, filed on behalf of the

Council and various other lists of further issues and disputes filed on behalf of Mr Laidley's clients and other Co-respondents.

- [16] The disputed issues generally can be categorised as conflict with the Planning Scheme being an inconsistent land use across the Shire and specifically in the Tamborine Mountain Zone, conflict with many provisions from the Desired Environmental Outcomes (DEOs) to Overall and Specific Outcomes for the Tamborine Mountain Zone Code and with Specific Assessment Criteria for the Village Residential Precinct, and conflict with the Commercial Groundwater Extraction Code. It is common ground that the site lies within the Tamborine Mountain Zone in the Planning Scheme and within the Village Residential Precinct. A number of these conflicts bear directly upon a proper construction of the Planning Scheme, but many of the conflicts were said to arise as a result of the proposal producing unacceptable traffic impacts, unacceptable noise and vibration impacts, unacceptable impacts on the sustainability of the relevant aquifer or aquifers, and unacceptable impact on amenity of local residents and across the Mountain traversed by the haul route, including intangible amenity impacts.

The statutory framework for assessment

- [17] The Planning Scheme was made under the repealed IPA and is taken to continue to have effect to be the Planning Scheme for the Shire area made under the *Sustainable Planning Act* 2009 (the SPA). As the development application was received by Council on the 22 February 2011, the appeal was commenced pursuant to s 461 of the SPA. The appeal is to be by way of hearing anew, and must be decided based on the laws and policies applying when the Development Application was made, although the Court may give weight to any newer laws and policies that the Court considers appropriate.
- [18] The appellant has the onus of establishing that the appeal should be allowed.
- [19] The Court must assess the proposal in accordance with s 314 of the SPA and decide the appeal in accordance with s 324 and apply the "decision rules" set out in s 326. Although the wording in s 326 of the SPA is different from the repealed equivalent provision in the IPA, in the context of this appeal the approach to be taken is in

accordance with the so-called three stage test mandated by the Court of Appeal in *Weightman v Gold Coast City Council* [2003] 2 Qd.R.441. It is accepted that the decision of that Court in *Woolworths Ltd v Maryborough City Council & Anor* [2006] 1 Qd.R. 273 did not qualify or modify the *Weightman* decision apart from to say that the decision was not a “code for the determination of justification”. The *Weightman* approach is confirmed most recently in *Lockyer Valley Regional Council v Westlink Pty Ltd & Ors* [2012] QCA 370 which was considering a Scheme similarly structured to the Planning Scheme. In that case the Council attempted to construe the *Weightman* test so as to add another layer which was rejected by Holmes JA (with whom White JA and Atkinson J agreed.) In an earlier appeal concerning the same proposal (*Lockyer Valley Regional Council v Westlink Pty Ltd & Ors* (2011) 185 LGERA 63) the Court equated conflict in the *Weightman* sense with “at variance”.

- [20] In summary a decision to approve must not conflict with any relevant instrument which in this case is the Planning Scheme unless there are sufficient grounds to justify the decision despite the conflict. “Grounds” for the purposes of s 326 of the SPA are defined as:

1. matters of public interest; and
2. does not include the personal circumstances of an applicant, owner or interested party.

The term “public interest” is not defined in the SPA. It is common ground that the only form of regulation of the commercial extraction of groundwater on Tamborine is through the Planning Scheme.

Pre-existing lawful use issue

- [21] During his opening on behalf of Gillion on day 1, Mr Williamson made a submission concerning an existing lawful right use which he submitted arose as a result of the decision of his Honour Judge Durward SC in the enforcement proceedings. His submission was that in that judgment (*Scenic Rim Regional Council v Gillion Pty Ltd* [2010] QPC 115), his Honour had decided that the use came within the definition of “Minor Public Utility” in the 1985 Beaudesert Shire Council Planning Scheme (the Superseded Planning Scheme), and was a use for which Council permission was not required. Mr Williamson submitted that the

merits appeal was therefore not in relation to a new use but a use that had materially increased in scale and intensity, thus constituting a material change of use requiring impact assessment. There can be no doubt that in his opening remarks Mr Williamson made this issue a very important plank in his client's case. This part of his opening was met with alarm and consternation from the Council and the Co-respondents and an objection from Ms Djohan on behalf of Council. It was submitted that as this issue had not been notified as an issue in dispute and had not been included in either the development application or as a ground in the notice of appeal, the Council and the Co-respondents were significantly prejudiced by the position taken by Gillion in Mr Williamson's opening. In her closing submission, Ms Djohan has expanded her objection into an estoppel argument. Conversely Gillion has now also relied on estoppel to prevent Council from going behind what it says was Judge Durward's "finding" that Gillion did have an existing lawful use right at the commencement of the Planning Scheme.

- [22] In its final submission I think its fair to say that although Gillion still relies on the point (because s 314(3)(b) of the SPA requires the assessment manager to have regard to "any lawful use of a premises"), it has moved from the prominent position that it had in the opening. Gillion submits that the appeal should still succeed on its merits as if it was a new use but that the finding that it had an existing lawful use puts beyond doubt an approval i.e. that the appeal be allowed.

- [23] Ms Djohan notes that no additional evidence was placed before the Court on this issue in these proceedings however, no one disputes relevant factual findings about the nature of the use made by his Honour in his judgment. Some of the evidence before him in any event found its way into the merits appeal in Exhibit 14 which contains the affidavits of the Co-respondents including a number which were before his Honour in the enforcement proceeding. There is also some evidence relevant to this issue contained in Exhibit 32 and in particular the affidavit appearing at pages 14-16 of that Exhibit.

- [24] In the enforcement proceedings, based on Mr Stotschek's (72nd Co-respondent) evidence, his Honour concluded that from the time Gillion acquired the site in 2004 until March 2007 when the Planning Scheme commenced, five to ten 20,000 litre truck loads of water were being extracted each week up to March 2007 when truck

loads increased to up to 20 a week depending on the season. The Gillion production bore (the sole source of the water being extracted for the use) was not drilled until February 2007, and the new factory at Staplyton was completed soon after the commencement of the Planning Scheme. There is no dispute that between the above dates, water was transported off the mountain to a factory at Burleigh where it was bottled for sale. In reality it was a commercial operation similar to the present operation but on a smaller scale.

[25] In various parts of his reasons, his Honour referred to the relevant parts of the Superseded Planning Scheme and the competing arguments. As I have noted, in the Planning Scheme the site is located in the Village Residential Precinct in the Tamborine Mountain Zone and use of land in that Zone for Commercial Ground Water Extraction is Impact Assessable Development. ‘Commercial Ground Water Extraction’ is defined in the Planning Scheme as “the extraction of groundwater resources and the removal of that resource from property for the purpose of sale”. In the Superseded Scheme the site was within the Rural Zone.

[26] The competing arguments before his Honour Judge Durward SC were relatively straight forward. Commercial Ground Water Extraction was not a named use in either Columns III or IV of the Table of Zones for the Rural Zone in the Superseded Planning Scheme. Relevantly, paragraph 4 of Part 2 provided that no person shall:

“(1) Without the consent of the Council, ... use any building... or use land in any Zone for a purpose set forth in Column IV of the Table of Zones herein opposite the name of that Zone ...”

[27] Column IV lists purposes “for which buildings or other structures may be used or for which land may be used only with the consent of the Council”. Included in Column III in the Table relating to the Rural Zone (as there was in relation to every other Zone in the Table of Zones), are the words:

“any purpose other than those referred to in Columns III or V”

[28] Column V is not relevant as it dealt with prohibited purposes. Column III deals with what were called “as of right” uses now “self-assessable” in new planning parlance and includes “Minor Public Utilities”.

[29] Council’s argument before Judge Durward, was that the use was an unnamed use coming within the catch all description in Column IV referred to above which therefore required Council’s consent. Gillion’s argument then as now, is that the use fitted within the definition of “Minor Public Utilities” and was therefore an as of right use which existed at the time of the commencement of the Planning Scheme.

[30] In his judgment his Honour referred to various relevant definitions in the superseded Planning Scheme “Minor Public Utility” was defined as:

“Any premises used or intended for the supply of water, electricity or gas, or the provision of telephone, sewerage or drainage services where these activities do not involve either of the following:- ...”

(the exceptions are not applicable in this case)

[31] “Public Utility” is defined in the Superseded Planning Scheme as:

“Any undertaking for the supply of water, hydraulic power, electricity or gas or the provision of telephones, sewerage, drainage or transport carried out by a public organisation. The term does not include...a Minor Public Utility as defined herein.”

His Honour also referred to dictionary definitions to construe the definition of Minor Public Utility to which later reference will be made.

[32] In the Discussion session commencing at page 13 of his Honour’s judgment he concludes with paragraph 52 upon which Gillion now relies:

“What may amount to “material” is a matter of fact that may be characterised by the Court in an exercise of discretion. Whilst I have found that the respondent’s operation may properly be characterised under the superseded Planning Scheme as a “minor public utility”, nevertheless the change in the scale and intensity of the use is significant and such as would constitute a Material Change of Use of the premises.”

Council and Mr Laidley’s argument is that paragraph 52 is equivocal. There is certainly some earlier observations made by his Honour that are not consistent with a conclusion that he definitively decided that there was a pre-existing lawful use right at the time of the commencement of the Planning Scheme.

[33] At paragraph 40, his Honour referred to Gillion’s submission that a consistent thread in the dictionary definition of “public utility” taken up in the Superseded

Planning Scheme definitions is the supply of “an essential public service”. In paragraph 41, his Honour observed:

“An example of such supply in respect of water is a supply of reticulated water to households. The bottling of water for retail sale is arguably not such a supply.”

This is not consistent with an unequivocal finding of the kind contended for by Gillion.

- [34] It is difficult to discern on the basis of his Honour’s reasons any real factual detail about the use prior to the purchase of the land and business by Gillion in 2004 except by reference to Mrs McIntyre’s evidence at [18]. There is also the reference to Mr Stotschek’s affidavits to which later reference will be made. Some of Mrs Grey’s (the immediate neighbour to the site to the north) affidavits in the enforcement proceedings form part of the evidence before me. She refers to Mrs McIntyre’s use of the site to extract groundwater. Paragraph 15 of her affidavit filed 5 February 2010 in the enforcement proceedings, does tend to suggest a use which has different qualities to the use of the site from 2004 to 2007 by Gillion. At paragraph 15, Mrs Grey deposed as follows:

“While Judy McIntyre owned the property at 22 Power Parade, the business was not a problem at all. Judy used to bring about three trucks a week into 22 Power Parade to remove water, they were small trucks, a lot smaller than the trucks used now, and were not a problem. Judy used to also deliver water to residents, and filled our water tank for free. It was just a little business that delivered water for residents’ domestic purposes. It delivered water for people on the mountain and she often helped people out by delivering water for free. Judy charged \$40 per load of water or often delivered water free. Judy was on a pension and the business was just pocket money for her.”

- [35] That description is also somewhat inconsistent with the description or summary of the evidence of Mrs McIntyre at paragraph 18 of the judgment in the enforcement proceedings:

“[18] The previous owner of the property between 1989 and 2002, Mrs McIntyre, deposed that she started selling bulk spring water in about 1991 and from her recollection she removed three loads or eight to ten loads per day, the latter being in peak period, perhaps averaging five loads per day for five days per week.”

- [36] Mr and Mrs Stotschek are also long term owners of a property near the site. Unlike the Greys they are not permanent residents. They have owned a property at 32-42 Power Parade since 1990. Mr Stotschek has filed affidavits in these proceedings and in the enforcement proceedings and all are before me as part of his Exhibit 14. His reference at paragraph 15 in his affidavit filed 5 February 2010 in the enforcement proceedings to information he gave to Council in October 2008 in a letter, suggests that in 1996 the owner (presumably Mrs McIntyre), was extracting water to supply residents of Tamborine Mountain. He consistently attributes a serious diminution in water in his bore to extraction from bores on the site during earlier times which obviously is not related to extraction by the Gillion production bore. In his statutory declaration sworn 8 October 2008 he succinctly describes an obvious increase in intensity of use from 1996 to late 2001, one to two 5,000 litre loads each day, six days a week; a period in 2001 where very little water was extracted; and from late 2001 three to five 20,000 litres per week “to the Crystal Water Bottling Plant at Burleigh Heads”.
- [37] Mrs Morgan’s affidavit filed 5 February 2010 (part of Exhibit 14) indicates that she and her husband have lived at 51 Power Parade since 2001. All she says, relevant to this, is that when they first arrived “the business did not intrude on us because it was carried on, on a smaller scale. They used smaller water tankers”. Other reasonably long-term residents at Power Parade such as Mrs Atwater say nothing relevant to this issue.
- [38] As his Honour noted in his judgment, a material change in the intensity of scale of the use of premises constituted a change of use, or a “material change of use” to use the terminology of the Statute, with the commencement of the IPA on 30 March 1998. Prior to then an intensification of a lawful use was not a change of use. His Honour also noted that the IPA protected existing lawful use rights at its commencement. As he correctly observed, the commencement of the Planning Scheme does not affect that protection. That protection is maintained under the SPA.
- [39] On the basis of the uncontested findings of fact (relevant to this issue) in his Honour’s judgment and in the evidence before me, a number of factual conclusions can be drawn from the evidence about the nature of the use as at 30 March 1998:

1. Mrs McIntyre started selling bulk spring water in about 1991;
2. By 1996 this amounted to one to two 5,000 litre loads per day, six days per week to early 2001 (i.e. 30,000 litres to 120,000 litres per week);
3. In 2001 the owners (presumably Mrs McIntyre) informed Mr Stotschek that “they had lost a contract to supply Power Brewery”;
4. In 1996 the owner (presumably Mrs McIntyre) advised Mr Stotschek that “she had a license to supply Tamborine Mountain residents with water at 5,000 litres per load”;
5. In late 2001 Mrs McIntyre began supplying three to five 20,000 litre loads per week (i.e. 60,000 to 100,000 litres per week) to “the Crystal Water Bottling Plant at Burleigh Heads”.

[40] In my opinion his Honour simply did not find that there was a pre-existing lawful use of “Minor Public Utility” as at 30 March 1998 or at the commencement of the Planning Scheme, because it was unnecessary for him to do so, given the unequivocal evidence of material increase and intensity in scale from 2004 onwards. This conclusion is confirmed from an analysis of the submissions made to his Honour contained in Exhibit 32 and Gillion’s final submission.

[41] Paragraph 26 of Gillion’s final submission in the merits appeal carefully notes “the previous proceeding before Durward DCJ considered the application of the ‘best fit test’”. That may be accepted, but his Honour did not refer to it in his reasons despite it being a central plank in Gillion’s argument. Gillion refers to the judgment of Chesterman JA in *AAD Design Pty Ltd v Brisbane City Council* [2012] 136 L.G.E.R.A 390 at [48] in support of its argument that it is enough that his Honour “found that the use may be characterised as a ‘Minor Public Utility’”. As I have noted, his Honour’s reasons on this point are equivocal and the fact that he did not refer to the “best fit” argument is important.

[42] What was before his Honour and not before me was an affidavit of Mrs McIntyre sworn 4 February 2010. It is referred to in some detail in Gillion’s submissions to his Honour in the enforcement proceedings. There was also an affidavit of a Mr Knight who contracted to transport water from the site. These affidavits (according to Gillion’s submission to his Honour) provide some relevant factual information as to the nature of the use as at 30 March 1998. What is before me is an

affidavit of Mr Craig Dorozairo sworn 4 February 2010 in the enforcement proceeding. He was a previous lawyer for Gillion and exhibited to his formal affidavit various historical records which may give some factual understanding of the nature of the use as at the commencement of the IPA. These were apparently obtained by FOI or disclosure. These documents indicate that from 1991 Council officers were testing water from the site to ascertain if it was “suitable for drinking and other domestic purposes”. In analyst certificates issued by the then Council, the reason stated for analysis is “human consumption/domestic”. Certainly prior to the commencement of the IPA, Council regarded “the extraction of spring water for the removal from the site by tanker” in another site in the Rural Zone under the Superseded Planning Scheme as a “Minor Public Utility” (p 53 of Mr Dorozairo’s affidavit). Although entirely irrelevant to this issue, it is also clear that the Council regarded the use “prior to the adoption of current Planning Scheme” as a “Minor Public Utility” under the Superseded Planning Scheme which “did not require approval from Council on Rural Zone Land, and therefore no development conditions ever applied”. This is an extract from a reply from Council dated 26 August 2008 to a letter from Mr and Mrs Guerin (30th Co-respondent by Election) dated 12 August 2008.

- [43] In its final written submission, Council has submitted that Gillion is estopped from reliance upon any alleged pre-existing lawful use right essentially for two reasons. The first is the reason that I have already noted; it was not a ground of appeal nor was it referred to in the development application itself, nor was it ever notified as a disputed issue in the appeal. The second reason is that as Judge Durward SC has declared the use unlawful, from which order there was no appeal, Gillion’s attempt to rely on an existing use right offends the principle of finality embodied in concepts such as *res judicata* and issue estoppel. The latter submission fails I think for one simple reason. As I have indicated his Honour made no concluded finding about the pre-existing use rights. In any event it is clear that his declaration as to unlawfulness was predicated upon a factual finding that since commencement of the IPA (and particularly since 2004) the use had materially changed in scale and intensity, so as to constitute a Material Change of Use of the premises: s 1.3.15 of the IPA. This finding and the declarations are not undermined by the argument now advanced by Gillion. In oral submissions Ms Djohan made the point that the declarations properly read related to the whole of the use which was declared

unlawful. I agree with that but it says nothing about any pre-existing lawful use right.

[44] As to the first reason, it is true that this issue is not a ground of appeal and is not notified as a disputed issue. Mr Williamson raised it for the first time as an issue in the merits appeal in his opening. There is merit in Ms Djohan’s point about preparation for trial, particularly in relation to the town planning witnesses given the nature of the cross-examination which raised this issue with each of the town planners. Having said that, it was apparent to me that none of the town planners were surprised by the questions; in particular Mr Brown who gave evidence for Council, and it is difficult to see how Council or any other party is prejudiced by an argument first raised by Gillion in the enforcement proceeding. As Ms Djohan noted, no additional evidence has been called to support the argument. It follows that I do not accept Ms Djohan’s argument that Gillion is now estopped from relying upon any alleged pre-existing lawful use right. Because of my conclusions similarly Gillion’s estoppel argument directed at Council cannot succeed.

[45] For the purposes of the merits appeal and bearing in mind the mandatory nature of the words in s 314(3)(b) of the SPA, it is necessary for me to consider Gillion’s point anew in the light of the evidence before me in the merits appeal. I agree with his Honour that the key words in the description of “Minor Public Utilities” is the concept of “Public Utility”. I agree with his Honour that such a use would involve “...the supply of an essential public or community service”.

[46] The extraction of bulk water and the bottling of it offsite for sale to the public would not come within that description. However, doing the best I can I make the following findings a fact as to the nature of the use at the commencement of the IPA:

- (a) Between 30,000 and 120,000 litres of water was being transported offsite by tanker for sale as bulk spring water;
- (b) In around 1996, a previous owner was supplying bulk spring water to residents of the mountain;
- (c) At some unspecified time between 1996 and 2001 that same owner was supplying bulk water to Power Brewery offsite.

- [47] His Honour’s observations in paragraph 52 of his judgment are also consistent with the position that I find myself in. On the basis of the scant evidence above, it may have been the case that in 1996 bulk spring water was being supplied to residents of Mount Tamborine, a factual description that may fit the description of “Minor Public Utility”. If however the use had become a supply of bulk water to a brewery for bottling, it would not fit the description of “Minor Public Utility” because it would no longer be the supply of an essential public or community service. If indeed his Honour was saying no more than the use may have come within that description but he was unable to so find on the evidence before him, then that accords with the position I find myself in, particularly having regard to the evidence placed before his Honour and not before me. The use may have been a “Minor Public Utility” but, on the evidence, I cannot say if or when that description applied to it.
- [48] At the end of Exhibit 14 is an affidavit of Mr Abraham sworn 23 July 2010. He was Mrs McIntyre’s partner from when she purchased the site to when she sold (he says in 2003) to the organisation which sold to Gillion. His evidence was used for the enforcement proceedings but no reference is made to it in his Honour’s judgment. His evidence may have assisted on this issue but it was never tested. It simply adds confusion to an already confused picture which was not clarified by cross-examination in these proceedings or in the enforcement proceedings. As I have noted, a use which involved extraction and transporting the water off site to a brewery or a commercial spring water plant for bottling would not comply with an essential component of a “Minor Public Utility”.
- [49] He suggests that the supply to the brewery commenced in 1993, but ceased when the brewery failed in 1994. In April 1997 he purchased a 10,000 litre water tanker, and in 1998 supplied water from the site and his own property to the Spring Water Man. He then supplied (in 1999) to Mountain Dew which belonged to the people who sold to Gillion. Both these entities sound like commercial bottled spring water suppliers but I cannot say on the evidence. He also made the observation that Mrs McIntyre was on a pension and did not want too much water being sold which might affect her pension. He still drives a water truck on the Mountain today. He may have been able to clarify some of this confusion but was not required for cross-examination. Probably, the only real certainty is that by the time Gillion acquired

the site it was no longer being used as a “Minor Public Utility” and that up to the commencement of the Planning Scheme the use as a commercial enterprise to take water off site to be bottled outside the Shire intensified.

[50] Even accepting Gillion’s argument based on the judgment of Chesterman JA in *AAD Design*, it would not assist in the circumstances because of the lack of evidence. As the facts of that case demonstrate, a use may comply with two descriptions or definitions in a Planning Scheme, but before one gets to the best fit, there has to be sufficient evidence available to enable the Court to determine what the use was in fact. In this case, as well as there being deficiency in the description of the use, there is also a deficiency in when the use could no longer be described as a supply of an essential public or community service.

[51] It would follow that in my opinion, there is no pre-existing lawful use right.

Ground Water

[52] The Commercial Groundwater Extraction Code in the Planning Scheme in Div 5 provides at 5.2.12 that the Overall Outcomes for Commercial Groundwater Extraction are that it “maintains the amenity of the surrounding areas and protects the underlying aquifer.”

[53] Under 5.2.13 Table 5.2.13 Specific Outcomes and Prescribed Solutions for Commercial Groundwater Extraction includes SO1, which requires development that does not detrimentally impact upon the amenity of the surrounding area for which no solution is prescribed in S1.1, and SO3, development does not detrimentally impact upon the sustainability of the aquifer for which at S3.1 no solution is prescribed. Commercial Groundwater Extraction is defined in the Planning Scheme as:

“the extraction of groundwater resources and the removal of that resource from property for the purpose of sale.

The term includes the treatment and storage of extracted groundwater resources.”

[54] In its reasons for refusal (as amended) Council did not suggest that the proposal did not comply with the Code except on the issue of amenity. Its refusal was based on

other alleged inconsistencies with the Planning Scheme. The contradictors on this issue are Mr Laidley's clients joined by Mr Wright and the Co-respondents he represents and Mr Guerin.

- [55] A preliminary issue relates to an objection raised by Mr Laidley at the outset of Gillion's case in relation to water, in which he submitted that the use of two experts in relation to the water evidence was impermissible by virtue of r 35 of the *Planning and Environment Rules*. On this issue Mr Sutherland and Mr Anderson from the organisation known as Gilbert & Sutherland (G & S) provided reports and gave evidence on behalf of Gillion, and Mr Stephen Boyd gave evidence on behalf of Mr Laidley's clients.
- [56] I agree with Mr Laidley that in his Court report and in his evidence, Mr Sutherland to some extent, proceeded into evidence concerning water quantity. Mr Sutherland was presented as an expert in water quality, and Mr Anderson an expert in water quantity. The evidence of both has been received and they have been extensively cross-examined. The objection can be met by me taking care to ensure that in relation to Mr Sutherland's evidence, I consider only the water quality issue which essentially resolves down to an assessment of his evidence relating to hydrochemistry, and consider only Mr Anderson's evidence in relation to hydrogeology and the sustainability of the aquifer. Necessarily, both areas of expertise overlap and interact. The water evidence occupied five days of the hearing.
- [57] At the first joint expert meeting on the 17 February 2012, it was agreed that the use involving extraction of up to 564,000 litres per week is sustainable on a regional basis by reference to the 2011 report prepared by G & S which accompanied the development application. The disputed issue in relation to water raised by Mr Laidley's clients is that the proposal "detrimentally" impacts upon the sustainability of the aquifer from which the Gillion production bore draws.
- [58] This refers back to a proper construction of the relevant portions of the Commercial Groundwater Extraction Code in the Planning Scheme, in particular Overall Outcomes and Specific Outcomes referred to above.

[59] The dispute between the experts can be distilled down to a number of points:

1. Mr Boyd strongly asserts that there is a lack of data and information such that the impact on aquifer 3 (and other aquifers if connected to aquifer 3) could not be assessed to high degree of certainty. Mr Boyd ultimately accepted that he approached the impact assessment process in relation to water on the basis that before it was acceptable he had to be sure of his opinion. His position on this issue was summarised in diagrammatical form in Figure 1 at p 78 of Exhibit 19.

He maintains that all the steps set out therein should be undertaken prior to further consultation and prior to any approval. Mr Sutherland and Mr Anderson maintain that the data provided with the Development Application and the additional data provided as a result of additional work done after the first joint expert meeting on the 17th of February 2010, is more than sufficient to express an opinion to a high degree of probability that the proposal will not detrimentally impact upon the sustainability of aquifer 3.

2. There is a dispute between Mr Sutherland and Mr Boyd as to the interpretation of the data concerning the “water signature”, i.e. the hydrochemistry of the water being drawn from the Gillion production bore. This difference of opinion feeds into differing opinions as to the impacts on surrounding bores.
3. There is a dispute between Mr Anderson and Mr Boyd as to the interpretation of the data concerning the hydrogeology of the site such that they have different opinions as to the effect on aquifer 3 of the extraction of up to 564,000 litres per week and the detrimental effect and impacts on residents using bore water in surrounding areas particularly the nursery Mr and Mrs Taylor (73rd – 74th Co-respondents by Election) and Mr Stotschek and to a lesser extent Mr Guerin. There is also an associated issue of the impacts of the proposal on the headwaters of Franklin Creek.

[60] Mr Boyd presented as a passionate expert who has become strongly wedded to his assessment of the proposal to such an extent, I regret to say, that it has affected his

objectivity. I refer to only two parts of his evidence that demonstrate my firm conclusion. In cross-examination by Mr Williamson, he took Mr Boyd to condition 24 of the Council Planning and Development Committee Report dated 18 October 2011 (which recommended approval subject to conditions) which states:

“Groundwater extraction temporary draw down study – as per the Queensland University of Technology Sustainable Peer Review dated April 2011, the applicant is to commission an investigation by a qualified person[s] into the possible temporary impacts [i.e. water level draw down] on neighbouring bores from prolonged abstraction at the Wetfix Springwater site and the need for a focussed and independent monitoring program utilising automatic water level loggers.

This report is to be completed and submitted to Council within 12 months of the application approval.

In the event that the findings of this report identify temporary impacts upon neighbouring bores that the applicant will be required to submit a management plan that outlines mitigating measures as to how these temporary draw down effects will be managed.”

[61] He was asked by Mr Williamson if a condition in those terms would address his concerns. Not surprisingly having regard to Figure 1 in his evidence he said it would not, and that on the evidence before him the proposal was “not reasonably conditionable”. Mr Williamson asked him if he regarded G & S as qualified to undertake the monitoring program anticipated by the condition. His responses which appear at 4-70 – 4-71 of the transcript suggest to me a tendency to advocacy which was not the first or last time I sensed that during Mr Boyd’s evidence. His reluctance to assist in drafting the terms of an acceptable condition in the questions thereafter is also unusual. Contrary to Mr Boyd’s evidence, experts regularly assist Assessment Managers or Concurrence Agencies in the proper drafting of conditions. Mr Williams’ input into the conditions attached to the DTMR referral agency response in relation to traffic safety issues is an example in this very case.

[62] The other moment occurred the following day towards the end of Mr Williamson’s cross-examination of Mr Boyd. The cross-examination concerned the introduction into evidence at this time of Exhibit 21, an extract from Gillion’s tanker log. Mr Boyd was very quick to point out potential credibility difficulties with the information in the log. He expressed his disappointment at not seeing it until it was shown to him by Mr Williamson. My real concern arises about some evidence from

the witness following an objection by Mr Wright (the 83rd Co-respondent) recorded at 5-8 of the transcript. Mr Wright was concerned about the authenticity of the document. “It does not look kosher” is the way he expressed his objection. Mr Williamson assured the Court that Mrs Gill would give evidence that the log was authentic, and informed me that the original could be examined if required. Mr Boyd quite unresponsively then proceeded at 5-9 to tell me that in his experience the drivers’ initials on the log looked “markedly the same”, obviously suggesting some form of fabrication. I challenged him about why he was involving himself in an area that was clearly beyond his expertise, and he backed away, but the exchange again left me with the uncomfortable sense that he had allowed his objectivity to be subsumed by advocacy for his passionate view about the protection of the groundwater resource on Mount Tamborine.

- [63] That is not to say that I reject all his evidence, rather it causes me to approach his opinion evidence with care. Indeed as my following analysis of this part of the evidence will reveal Mr Boyd makes some valid points, but it is example of the great care that experts should bring to their task which is fundamentally to assist the Court in respect of issues relevant to the area of expertise.

Discussion

(a) The adequacy of the data

- [64] This is central to Mr Boyd’s opinion that on the present scientific evidence the proposal cannot be acceptably conditioned to mitigate groundwater impacts. At the first joint experts meeting Mr Boyd expressed similar concerns. At the first meeting there was before the experts an extensive amount of data and scientific evidence available to inform their respective opinions. The three experts agreed on the documents being relied upon as:

“Reference documents:

- Gilbert & Sutherland 2011 groundwater sustainability review, 22-26 Power Parade, Mount Tamborine Queensland. Prepared by Gillion Pty Ltd (Wetfix Springwater), February 2011 (here and after referred to as the “G & S 2011 Report”).
- Todd, A; 2011. Peer review: groundwater sustainability assessment report Gillion Pty Ltd (“Wetfix Springwater”) 22-

26 Power Parade Mount Tamborine, SE Queensland. Prepared for Scenic Rim Regional Council, 20 April 2011 (here and after referred to as the “Peer Review 2011”).

- Todd, A; 2011. Groundwater investigation, Tamborine Mountain, South East Queensland, Institute for Sustainable Resources, Queensland University of Technology technical report to South East Queensland Catchments Ltd, June 2011 (here and after referred to as the “QUT 2011 report”).
- Boyd Water Services Pty Ltd 2011, review of comments from local residents, attached as appendix A.”

[65] The three experts also agreed to a number of issues that are relevant to the impact assessment of the proposal:

- In Queensland, groundwater bores are required to be registered with DERM if deeper than six metres from Natural Surface Level (NSL).
- DERM possesses a database of groundwater bores that have been “registered”.
- An unknown number of groundwater bores are present on Mount Tamborine but are not registered.
- The groundwater resource lies within predominantly unconfined aquifers that have varying degrees of connectivity which reflects the underlying geology.
- There is, and never has been, any Queensland Government regulation of groundwater use on Mount Tamborine.
- Groundwater is abstracted on a wholly opportunistic basis, reflecting individual bore characteristics and pump and/or storage capabilities.
- Many properties on Mount Tamborine have multiple bores at varying depths exhibiting wide-ranging groundwater yields.
- The drilling industry’s practice on Mount Tamborine of constructing multiple groundwater bores to varying depths within single properties reflects the inherent uncertainty and variability of the local groundwater supply.
- The community of groundwater users on Mount Tamborine is vulnerable to change in that there is no groundwater resource allocation. This means that any user relying on the groundwater resource does not have security of tenure

to that resource. Groundwater use represents an undetermined property right in that regard.

- At a regional level, the G & S 2011 report provides an accurate representation of the resource available on the basis of the data available to G & S.
- The G & S 2011 report included all registered bore information available at that time as defined by the data given in the G & S 2011 report.
- Additional groundwater bores may have been registered in the vicinity of the subject site since the date of the G & S 2011 report.
- The newly registered bores may have been installed many years prior to their registration.
- In a groundwater regime such as that present on Mount Tamborine, Government regulation is, if not impossible, extremely difficult for the following reasons:
 - The aquifer is unconfined and drains from the mountain, feeding watercourses and causing groundwater recharge in the process.
 - Individual aquifers are variable in size, storage, capacity and yield.
 - Various aquitards and aquicludes exhibit variable hydraulic conductivity that impacts on the connectivity of the aquifers.
 - There has been only limited measurement of groundwater abstraction.
- In the context of the unregulated abstraction from the aquifers in the vicinity of the subject site, higher pump capacity means groundwater can be accessed at greater depths and the rate of abstraction can be greater. These factors therefore add to groundwater reliability for bores with greater capacity.
- On the subject site, the groundwater production bore (the Gillion production bore) terminates at 116 m below NSL.
- There are a further four bores present on the subject site, one of which is used. The purpose of the use is domestic.

None of these four bores is used for commercial abstraction.

- The G & S 2011 report indicates groundwater bearing layers in the vicinity of the site are not contiguous, rather there are distinct and localised water supplies that are connected indirectly by the jointing, fracturing and weathering of intervening hard basalt. In terms of abstraction of groundwater on a regional basis, this characteristic indicates the following:
 - Impacts of abstraction would be limited to those users that are abstracting water from the same groundwater lens.
 - The extent of the probable drawdown caused by any one user will be limited by the heterogeneous nature of the aquifer(s).
 - If one bore ceases to yield water due to large volumes of water abstraction, it is unlikely that this single bore or group of bores in the same groundwater sources would drain the wider water supplies of the Tamborine Plateau.
 - The indirect connections between the aquifers are more likely to have a significantly lower permeability than the aquifer and provide a buffering zone between the water-bearing layers.
 - The area recharging the groundwater being abstracted may be limited to the diffuse recharge zones directly above the groundwater source and whatever localised recharge is afforded by creeks and drainage features that flow nearby.

- The Respondent's Manager of Planning, in recommending approval of the Appellant's Development Application, proposed the following condition (recommended Condition 31) in respect of "Maximum Annual Extraction":

The approved use must not extract any more than a maximum of 564,000L per week of groundwater from the subject site per calendar year which will maintain and validate the recommendations of the respective approved professional reports, namely the traffic impact assessment report, the Gilbert & Sullivan groundwater sustainability report and the noise assessment report.

- The G & S 2011 report, the peer review and the QUT 2011 report each confirmed that abstraction of 564,000L per week of groundwater from the subject site is sustainable on a regional basis. Both the peer review and the QUT 2011 report recommend local area pumping tests and associated monitoring to allow assessment and control of potential drawdown effects on nearby bores.
- In the context of an unregulated aquifer with undefined rights to a groundwater resource, and assuming all landowners are willing to act in good faith, there is a potential opportunity to frame a water sharing agreement that may narrow and/or resolve the water use conflict. Such an agreement might take the following form:

Aims:

The water sharing plan would seek to:

- provide a framework within which undetermined property rights in terms of groundwater are recognised
- include mechanisms to provide fair, equitable and reliable access to groundwater, noting that the potential stakeholders in such an agreement do not currently enjoy such certainty
- manage local impacts or interference effects
- prevent, minimise, narrow or resolve groundwater disputes.

Investigations:

The water sharing plan would be based on appropriate studies and physical investigations to:

- identify the drainage basin
- register all bores within the drainage basin
- install flow meters on all bores in the drainage basin
- assess connectivity within the drainage basin
- define the different demand profiles within the drainage basin
- derive sharing/use triggers appropriate to the drainage basin
- define and test changes in management of resource within the drainage basin (sensitivity analysis).

Outcomes:

It is anticipated that the plan would:

- contribute to the maintenance and enhancement of the social amenity and economic viability of groundwater users
 - consider and provide for environmental groundwater needs
 - promote water use efficiency strategies
 - describe dispute resolution procedures.
- The Respondents' Manager of Planning, in recommending approval of the appellant's development application, proposed the following condition (recommended Condition 24):

Groundwater extraction temporary drawdown study - as per the Queensland University of Technology Groundwater Sustainability Peer Review dated April 2011, the applicant is to commission an investigation by a qualified person/s into the possible temporary impacts (i.e. water level drawdown) on neighbouring bores from prolonged abstraction at the Wetfix Springwater site and the need for a focussed an independent monitoring program utilising automatic water level loggers. This report is to be completed and submitted to Council within 12 months of the application approval. In the even that the findings of this report identify temporary impacts upon neighbouring bores that the applicant will be required to submit a management plan that outlines mitigating measures as to how these temporary drawdown effects will be managed.
 - This proposed condition resulting in an appropriate study and ongoing characterisation and ongoing monitoring, could, in our view, form a key input for the water sharing plan.
 - On a regional basis, the proposed Wetfix abstraction would be sustainable based on the fact that Wetfix abstraction is a relatively small proportion of groundwater recharge (less than 1.2%).

[66] After the first meeting on 17 February 2012, G & S undertook further data collection as a response to Mr Boyd's concerns expressed at their first meeting. This essentially involved testing of registered groundwater bores within 436 metres of the Gillion production bore, augmented with information to be supplied by various Co-respondents in respect of their bores. The further testing and data gathered was trenchantly criticised by Mr Boyd at the second meeting of experts on 6 September 2012, and although I have some concerns about some aspects of the

data, I think Mr Boyd's criticisms are unjustified. Mr Anderson and qualified staff from G & S conducted the testing augmented by some limited data from other bores. Some of this data came very late in the testing period and was of little use.

- [67] It is common ground that there are a large number of unregistered bores on Mount Tamborine and that extraction of groundwater has in the past been unregulated. As the experts agreed at the first meeting, bores have only been required to be registered with DERM since 2002. The effect of this is that for bores drilled since then (which includes the Gillion production bore drilled in 2007) drilling practices have improved. Bore drilling in the past has led to inter-aquifer mixing and water loss because of poor quality control. The only regulatory framework at the present time is that contained in the Planning Scheme.
- [68] In accordance with the proposal emanating from the first joint experts' meeting Mr Anderson undertook measurements designed to test groundwater levels at 11 bores including the Gillion production bore, the nursery shallow bore (Mr and Mrs Taylor, the 73rd and 74th Co-respondents), both Stotschek bores (72nd Co-respondent), the other Gillion bores and Mr Guerin's bore (30th Co-respondent with his wife). Some bores (including the Gillion production bore) would not receive a data logger which records levels at six minute intervals throughout the test period. Mr Anderson said it was not unusual for scientists to have difficulties in getting data loggers down bores, whereas Mr Boyd was critical of G & S's failure to place a data logger in the production bore. As a result, over the period that the data loggers were in place in other bores (SK1, SK2, nursery shallow, GW4, GW2), Mr Anderson undertook manual testing at two week intervals of the production bore GW3, the Guerin bore and GW1.
- [69] At the same time during the test period from 2 March 2012 to 20 July 2012 he compared the data obtained with the Gillion tanker logs to test (a) the groundwater levels of the relevant aquifer sources and (b) groundwater abstraction loads. For a 14 day period from 8 June 2012 no water was abstracted from the production bore to test the effect on groundwater levels. The bores tested are those represented in the Google Earth map at p 30 of Exhibit 17.

- [70] Mr Anderson also obtained details of registered bore levels from DERM including information from the drillers to establish the date on which the bore was sunk (if noted), the depth at which the drill first encountered water (the Standing Water Level or SWL), and the SWLs for the bores tested including the SWL as measured by G & S in 2011 and 2012. Mr Anderson's conclusions as to the relevant depths and water-bearing zones is represented diagrammatically at pp 31 to 34 of Exhibit 17. His conclusions from the 2012 testing is represented diagrammatically in the same Exhibit at p 35.
- [71] From the data he concludes that the local aquifer feeding the production bore is not unacceptably impacted by the extraction of up to 546,000 litres per week.
- [72] The manual testing of groundwater levels in the Gillion production bore took place on 11 occasions commencing on 2 March 2012 and concluding on 20 July 2012. In a diagram prepared by Mr Anderson at p 35 of Exhibit 17 he includes the tanker loads extracted from 2 March 2012 to 8 June 2012 when abstraction ceased as part of Mr Anderson's testing instruction. The tanker data comes from the Gillion tanker logs which have been criticised by the Co-respondents. There is no reason to doubt the accuracy of the logs but I am concerned that during the testing period from 2 March 2012 to 8 June 2012 only on nine occasions (out of a possible approximately 100 days) was the maximum number of tanker loads extracted. According to Mrs Gill the number of loads extracted daily is dictated by demand at the Wetfix factory which is to some extent regulated by the season. It is correct that the majority of the loads during this period were three but on some days (i.e. prior to abstraction being halted completely for a period), no water was abstracted. Unlike the Co-respondents I do not think there is anything sinister in this but I agree with Mr Boyd to this extent, that the manual logging of the production bore together with the limited number of maximum daily abstractions during the testing period does to some extent reduce the adequacy of this further testing done by Mr Anderson.
- [73] In Exhibit 19 p 83, Mr Boyd averages out the abstraction during the testing period and prior to the no pumping period as being 62 per cent of the average maximum of 564 kilolitres per week limit.

- [74] However in my opinion my reservation will be met by the condition proposed by G & S (to which Gillion agrees) at p 849 of Exhibit 1C. This was proposed by them in the second joint experts meeting. It will require ongoing monitoring of the Gillion production bore to ensure that groundwater mining (defined by Mr Anderson as abstraction exceeding natural recharge to the aquifer), does not occur. The conditions as proposed will have to be tightened to conform with Mr Anderson's evidence in Court to the effect that the Gillion production bore will have to be removed by crane and reset to ensure that the data logger can be put in place. The terms of condition 10(b) at p 849 of Exhibit 1C are generally acceptable including the trigger level of 438 metres AHD proposed by Mr Anderson. (10(c) relates to water sharing agreements to which reference was made in the agreement section of the first joint expert reports. Mr and Mrs Taylor did not say anything about their intent not to enter into any water-sharing arrangement with Gillion in their trial affidavit in Exhibit 14. It was first raised in Mr Laidley's closing submission. Mr Williamson asserts prejudice. In my opinion, for the reasons later exposed, a condition relating to water-sharing involving the Taylors is not needed to avoid conflict with the Code. This is because of the many other conditions to be imposed, designed to avoid water mining. The attitude of the Taylors is surprising as Mrs Taylor asserts that their nursery business, which they purchased some years ago, is in financial difficulties, because of lack of water from their bores.
- [75] It is also surprising given her own expert Mr Boyd's agreement in the JER that water sharing agreements in this environment may "contribute to social amenity...(of) groundwater users." Having said that, this Court cannot impose conditions that bind third parties. Enforcement would also be a complex issue.
- [76] The testing conducted by G & S staff under the supervision of Mr Anderson after the first joint expert meeting as depicted and analysed in the graph on p 35 of the Exhibit 17 leads me to the conclusion on the probabilities that the proposed maximum rate of extraction is in a local sense sustainable. The raft of conditions designed to monitor groundwater levels in aquifer 3 will ensure that groundwater mining can be avoided. It is not without significance that although the water levels of the aquifer impacted by the Gillion production bore have dropped since 22 February '07 (when it was first drilled) nevertheless the levels appear to be capable

of recovery to an acceptable level notwithstanding continuous commercial abstraction since that time.

- [77] One of the real difficulties in the approach taken by Mr Boyd is that he tends towards the view that before the proposed use can proceed, at the very least one has to be sure that the local aquifer has not been unacceptably impacted. My impression is that he will never be satisfied, and the unreasonable prerequisites to even start consultation set out in Figure 1 at p 78 of Exhibit 19 is demonstrative of this conclusion. On the other hand Mr Sutherland and Mr Anderson make the point that the use being considered here is an actual use (albeit unlawful) and what is being measured is the hydrochemistry and hydrogeology data associated with an actual use and not modelling on the basis of a proposed use.

Issue 2 - the hydrochemistry

- [78] My general views about the expert opinion evidence set out above feed into my analysis of the evidence on this issue. There is no dispute about the mechanism by which groundwater aquifers develop and how they acquire their “water signature” which is the chemical composition of the dominant water type in a particular aquifer. Mr Sutherland undertook analysis of water samples taken from all bores the subject of the post-joint experts meeting monitoring undertaken by G & S, and concluded, from the hydrochemistry perspective, that the dominant water types reveal Mr Guerin’s bores and the bores on Mr Stotschek’s property are drawing from a different aquifer to that of the Gillion production bore. Mr Sutherland’s opinions are based on PIPER and DUROV plots prepared by him which show that the water signature of the water in the Gillion production bore is similar to that in the nursery shallow bore and dissimilar to that in the Guerin and Stotschek bores. In the G & S 2011 report which was attached to the development application PIPER diagrams are described. They are said to “plot the major ions of a water sample as percentages of milli-equivalents in a graphical form to show similarities and differences between water samples/locations through a visual clustering of data points”.
- [79] Mr Boyd agreed that there were differences but without undertaking any analysis himself was critical of Mr Sutherland for not quantifying the extent of the difference

with respect to inter-aquifer mixing and poor bore construction of the Gillion construction bore. Mr Sutherland's PIPER analysis referred to in the second experts report is reproduced in Exhibit 18 and Mr Boyd's response is Exhibit 20. For reasons I will later expose I prefer Mr Anderson's evidence to Mr Boyd as to the aquifer source of the number 1 bore on Mr Stotschek's property. Mr Sutherland thought that the nursery deep bore was "possibly" drawing from the same aquifer as the nursery shallow and the Gillion production bore but his reservations were based on Exhibit 18 i.e. that the nursery shallow and Gillion production bores sit together in all three diagrams on the PIPER diagram plot and the nursery deep and Gillion production bores sit together (or close) on only two. Mr Boyd also argued that insufficient hydrochemical sampling had been done but I readily prefer Mr Sutherland's evidence to the contrary. Mr Boyd was closely cross-examined by Mr Williamson in relation to Exhibit 20, his response to Exhibit 18. He agreed that the nursery shallow and the Gillion production bore appeared to come from aquifer 3. Aquifer 3 is a lower aquifer to aquifers 4 and 5. Although he agreed that chemically Mr Stotschek's number 1 bore appeared to have a different water signature to that of the Gillion production bore, nevertheless he still maintained (based on the other evidence including Mr Anderson's monitoring) that they drew from the same aquifer.

[80] In the G & S 2011 report the geology of Mount Tamborine and the site is described as:

"The basalt plateau that forms the top of Tamborine Mountain grades westward from the application site. Green (1964) and Wilmont (1981) indicate that the basalts associated with the site fall into two distinct layers:

- a single flow of up to 25 metres thick overlying
- a group of four or five flows (one highly vesicular) with a varying combined thickness.

The basalts then grade to steep basaltic slope to colluvial deposits on basalt debris and then to the steep sandstones of the Bundamba group (Wogarr sub-group).

On the eastern side the basalts grade to the steep slopes of the Nerang Fernvale group."

[81] Mr Boyd was cross-examined about a passage at p 20 of the G & S 2011 report:

"The bore log data and water level data suggests that rather than having contiguous layers of water-bearing material that stretch

extensively through the basalt cap there are distinct and localised water supplies that are connected indirectly by the jointing, fracturing and weathering of intervening hard basalts.”

- [82] He agreed with the sentence but again proffered his complaint of insufficient data because of a failure to test unregulated bores. The difficulty with that proposition is self-evident. Given that it is agreed that there are hundreds of unregistered bores on Mount Tamborine the task would be impossible. The same observation applies to his criticism that there should be data about unregistered bore construction, which all experts agree can (if poor) contribute to inter-aquifer mixing. Mr Anderson explained that as part of the registration process introduced in 2002 it was hoped by insisting that registered bores not intercept multiple aquifers inter-aquifer mixing could be mitigated.
- [83] Mr Boyd’s criticism of the hydrochemistry opinions of Mr Sutherland is unconvincing. I prefer Mr Sutherland’s evidence.

Issue 3 – Hydrology and Franklin Creek

- [84] No expert can ever be certain about the exact nature of the geology in a locality and the degree of fissuring and natural (and unnatural caused by badly constructed bores) interconnectivity between various groundwater aquifers. Mr Anderson’s conclusion based on the QUT report and his own firm’s work which at the DA stage was peer reviewed at the behest of Council, led him firmly to the conclusion that the Gillion production bore and the nursery shallow bore are drawing from aquifer 3. In the 2011 report, G & S undertake an analysis of the “age” of the water in aquifer 3. Age refers to the time taken for water to percolate through the above geology to the water table. It is generally agreed that at the locality there are probably three aquifers namely aquifers 3, 4 and 5. Aquifer 5 is lithologically and geologically above aquifer 4 which in turn sits above aquifer 3.
- [85] I accept Mr Sutherland’s evidence that on the basis of the hydrochemistry the Gillion production bore and the nursery shallow bore are probably drawing from the same source. Mr Anderson’s testing (in conjunction with a previous QUT and G & S peer review data) in 2012 demonstrated in Exhibit 17 that probably the bores are drawing from aquifer 3 which is separated (generally and certainly not uniformly)

from the above aquifers by 33 metres of dry basalt which forms an aquitard or barrier. His analysis also demonstrates that proximity will not necessarily provide a clue as to the source of groundwater being extracted by a particular bore. For example he referred to GW3, one of the unused bores on the Gillion site which is only 12 metres away from the production bore and yet is clearly connected to a different aquifer. His analysis satisfies me on the balance of probabilities that the abstraction from the production bore will not unacceptably impact on the SK1 (Stotschek) number 1 bore or the Guerin bore because they are drawing from different aquifers with little or no connection. GW3, which was initially the bore used for Wetfix, does draw from the same aquifer as SK1 but I accept Mr Anderson's evidence that since the production bore has been in use it appears that the groundwater level of SK1 has in fact risen. In Mr Stotscheks' affidavits in Exhibit 14, he seems to assert that the negative impact on his bores occurred at an earlier time when the Gillion production bore was not in use.

- [86] Mr Anderson opines that aquifer 3 is not impacted by rainfall events in the sense of there being an immediate impact and the data seems to bear this out. He disagrees with Mr Boyd that aquifer 5 drains into aquifer 4 which in turn drains into aquifer 3. Mr Boyd could not adequately explain in cross-examination by Mr Williamson why, if this was correct, the data did not show elevated levels in aquifer 3 at the time of high rainfall. He agreed that the large basalt aquitard between aquifer 4 and aquifer 3 would in general terms act as an aquitard but, essentially because of the insufficiency of data he did not share Mr Anderson's opinion about the relationship geologically between the relevant aquifers. He agreed that diagrammatically p 35 of Exhibit 17 accurately reflected the data that had been gathered and, if accepted by the Court, would not assist his opinion that aquifer 4 drains into aquifer 3. Even his own analysis of Mr Anderson's data produced at pp 82 to 83 of Exhibit 19 tends to show that aquifer 3 was responding to the abstraction from the Gillion production bore during the 2011 test period. Aquifer 4 was not. It also shows that the aquifer was recovering during the period albeit that was when, as he accurately notes, only 60 per cent of the maximum limit applied for was being extracted, and the period of no pumping. This analysis tends to support Mr Anderson rather than undermine his opinion.

- [87] In relation to the impact on the headwaters of Franklin Creek, Mr Anderson gave evidence, that in diagrammatical form, the headwaters of the creek are located approximately at a point indicated by the vertical line on the far left of p 34 of Exhibit 17. I did not understand Mr Boyd to dispute this. Mr Anderson's point is that if you accept that drawing as accurately representing the relative position of the Gillion production bore to the headwaters of the creek on the ground, it is separated approximately 90 metres from the headwaters and that the aquifer, in the vicinity of the bore, does not contribute to the headwaters and the use does not impact on those headwaters. Mr Boyd said this only presented some of the picture and essentially reverted to his complaint that there was insufficient evidence to say if the Gillion production bore impacted unacceptably on the headwaters of the creek.
- [88] He said that in his opinion, Franklin Creek derived 70 per cent of his water from groundwater seepage and run off. Given my conclusions as to source of the water being drawn off by the Gillion production bore i.e. aquifer 3, then I conclude that it is highly unlikely that water being extracted from the Gillion production bore is impacting on the recharge to the headwaters of Franklin Creek. I prefer Mr Anderson's evidence on this issue.
- [89] Mr Laidley has raised in his submission a necessity for the decision maker to have regard to the application of the precautionary principle. This is a reference to s 5(1)(a) of the SPA which is not materially different from its predecessor in the last version of the IPA s 1.2.3(1)(a) except for some inclusions which are not relevant. The meaning of "the precautionary principle" in s 5(2) of the SPA is again not materially different from the meaning ascribed in s 1.2.3(2) of the IPA. My analysis of the water evidence is to determine what impacts if any the proposed use will have on the local aquifer. Implicit in my criticisms of Mr Boyd's approach is that he appeared on many issues to be calling for close to scientific certainty which is not possible. Given the changes in the statutory meaning of the "precautionary principle" since the commencement of the IPA, which one could say has "watered down" the force of the principle, there is little utility in making reference to the cases at common law to which I referred in *Histpark Pty Ltd and anor v Council of the Shire of Maroochy* [2002] Q.P.E.L.R. 135 at 140-141. It is also of significance in my view that Council, the responsible authority for administering the Planning

Scheme, has not asserted any conflict with the Commercial Extraction or Groundwater Code in the Planning Scheme, apart from amenity.

Traffic

- [90] As a result of an agreement between the DTMR and Gillion reached on the eighth day of the adjourned hearing and after all three traffic engineers had given evidence, the areas in dispute on this issue have substantially narrowed.
- [91] Mr Stuart Holland gave evidence on behalf of Gillion, Mr Colin Beard on behalf of Council and Mr Stephen Williams on behalf of the Department.
- [92] At present, the haul route is from the site onto Power Parade into Main Western Road, Geissman Drive, and down Tamborine Mountain Road to Beaudesert-Beenleigh Road and Stanmore Road. The central issue raised in the traffic engineering evidence focussed on safety. Mr Beard, in his inimical style, was inclined to stray into amenity, acknowledging that this topic was beyond his expertise. The focus was on that part of the haul route from Power Parade eventually down Tamborine Mountain Road. That part of the roadway system from Main Western Road is part of the State-controlled road system.
- [93] The DTMR and Council and Gillion took the view at the DA stage that the Department was not a referral agency for the purposes of assessment. The 22nd, 55th, 63rd and 72nd Co-respondents supported by Mr Wright (on behalf of a large number of Co-respondents) disagreed, and successfully applied to the Court to bring the Department in as a referral agency: *Gillion Pty Ltd v Scenic Rim Regional Council & Ors* [2012] QPEC 33. The Department was joined as a result of that decision in the proceedings as the 84th Co-respondent by Election and retained Mr Williams.
- [94] By the time he was retained the first joint experts meeting had been held between Mr Beard and Mr Holland. The present haul route was the focus of their discussions.
- [95] By the time of the second meeting on 30 August 2012 Mr Williams had given advice to the Department which had given its referral agency response on 27 July

2012. The DTMR response was to approve subject to seven conditions which are helpfully summarised at p 1 of the second joint expert report:

- “1. The haul route is to be via Power Parade / Main Western Road / Geissman Road / Eagle Heights Road / Tamborine-Oxenford Road. It is noted that the development currently uses a haul route via Power Parade / Main Western Road / Geissman Road / Tamborine Mountain Road. That is, the approval condition establishes a route that restricts a development from using Tamborine Mountain Road (existing) as its preferred route for the haulage of extracted water, and requires the use of Tamborine-Oxenford Road via Eagle Heights Road and Long Road (known as “Gallery Walk”). It is noted that both roads are State-controlled (except Power Parade).
2. Haulage vehicles associated with the development are not permitted to use the haul route on weekends or public holidays.
3. Heavy vehicles are restricted to an articulated vehicle 15.3 metres in length which the appellant has informed DTMR is the length of the existing vehicle.
4. The haul vehicle is to carry clearly legible livery identifying the operator and proposed development and providing contact details.
5. The haul vehicle is to be well-maintained to ensure that they are able to travel to/from Mount Tamborine in a safe and efficient manner.
6. The Geissman Road/Eagle Heights Road intersection is to be upgraded (at no cost to DTMR) to accommodate the swept path of a 15.3 metre long articulated vehicle, generally in accordance with works identified in Figure 3 of Mr Holland’s report of 11 July 2012.
7. An assessment of sightlines is to be undertaken at the Power Parade/Main Western Road intersection and take any action identified in the assessment as necessary to improve sightlines at the intersection at no cost to DTMR.”

[96] As I have noted, after the engineers had given evidence, agreement was reached between Gillion and the Department in relation to conditions 1 to 6. Condition 7 was omitted and replaced with a condition requiring utilisation of the forward cab design prime mover presently used by Gillion.

- [97] To say that the relevant Co-respondents' decision to apply to this Court to compel DTMR to respond might be regretted, is perhaps an understatement.
- [98] Instead of the haul route proceeding down Mount Tamborine Road from the Geissman Road/Eagle Heights intersection, the DTMR conditions require the tanker to turn right at that intersection and proceed via Eagle Heights Road and Long Road (known as "Gallery Walk") down Tamborine-Oxenford Road. If this occurs, the tanker will be making a maximum of eight journeys per day (except on weekends and public holidays) past the intense tourist developments at the intersection (known as Curtis Falls), and through Gallery Walk which is a tourist hub of the Mount Tamborine community particularly on weekends and holidays. Not surprisingly, Council does not agree with the proposed new haul route nor do the Co-respondents.
- [99] At the second experts meeting on 30 August 2012 all three engineers agreed "that the most appropriate haul route up and down the Mountain from a traffic engineering perspective is Tamborine-Oxenford Road".
- [100] It is not disputed that the new proposed haul route from the intersection of Main Western Road and Power Parade is also over State-controlled roads including Gallery Walk.
- [101] By the time Mr Holland prepared his Court report on 23 October 2012 he had changed his mind on the basis of his analysis of crash data for both roads set out in Exhibit 22, and by reference to a report commissioned by the Australian Road Research Board in 2008 which he summarised in Exhibit 23. Neither Mr Beard nor Mr Williams found that the crash data affected their view as expressed at JER2.
- [102] Given the agreement between Gillion and the Department it is unnecessary for me to resolve the difference in opinion over the crash data. It is suffice for me to say that given the limits of the data itself (it only includes reported accidents to police), and the limits on the ARRB material, Mr Holland's "Damascus Road" change of mind (Mr Litster's expression) was not persuasive.

- [103] The disputed issues then focus on Power Parade, the intersection of that street with Main Western, any traffic engineering issues that may arise on the evidence as a consequence of the proposed upgrade of the Geissman Road / Eagle Heights intersection at Curtis Falls, and traffic engineering issues primarily to do with safety of the new haul route down Mount Tamborine / Oxenford Road. In both expert meetings and in his Court report and in his evidence, Mr Beard strayed from traffic engineering issues into amenity which other experts acknowledged were for others by reference to relevant portions of the Planning Scheme. I would add to that the uncontested evidence of the lay Co-respondents contained in Exhibit 14 which refers to safety but also to the wider concept of amenity to which I will refer later.
- [104] Mr Beard's concerns about Gallery Walk focus on the use of semi-trailers in an area heavily used by pedestrians and involving high traffic turnovers and forward angle parking. He acknowledges that low operating speeds in this area together with the relatively small number of movements and the restriction on movements on weekends and public holidays where pedestrian and small vehicle movement in this highly desirable tourist Precinct are likely to be at their highest, does tend to mitigate traffic hazards.
- [105] Mr Beard also expressed concern from a safety point of view about the large number of residential driveways on Eagle Heights Road, Long Road and McDonnell Road which enter onto the haul route, providing potential conflicts with a large semi-trailer. By far the most number of residential driveways occur along McDonnell Road and there is no doubt that sightlines for many will be extremely limited.
- [106] However I agree with Mr Williams that the DTMR conditions dealing with restricting movements to weekdays only which are not public holidays, and present speed control signage on those roads coupled with a relatively low number of movements contemplated by the proposal, does provide an acceptable solution to Mr Beard's concerns.
- [107] Because of the resolution between Gillion and the Department the disagreement between Mr Williams and Mr Holland about the DTMR document "Guide To Assessment Of Road Impacts Of Developments" (GARID), need not be resolved.

- [108] This is also because all engineers agree that notwithstanding the five per cent threshold, safety is not excluded in assessing a proposal from a traffic engineering perspective. It is not necessary for me to resolve the dispute about vehicle classification either, because of the relatively low number of vehicle movements and the DTMR restrictions on days of movements. The amenity impact of the passage of a 15.3 metre reticulated water tanker albeit at a maximum of eight trips per day from Power Parade onto Main Western Road through the Curtis Falls area and the Gallery Walk will be dealt with later.

Power Parade

- [109] Whatever its classification (there is a dispute between Mr Beard and Mr Holland about this), I agree with Mr Beard that it is not constructed for regular use by such a large vehicle even a use confined to eight movements a day over a relatively small section of the road. However, I am satisfied that the proposed widening of the pavement areas as contemplated by Mr Holland's sketch referred to at para 4(i) of his Court report and the widening of the culvert referred to in 4(ii), provide reasonable conditions which meet Mr Beard's concerns. There should also be a condition that requires at least annual inspection of the pavement by a traffic engineer at Gillion's expense, and provision that any necessary repairs as recommended be effected within a reasonable period. I agree with Mr Clegg however that from an amenity perspective the widening at this point will alter the form of the road and contribute adversely to the perception of locals as to the nature of the road.

The Power Parade / Main Western Road intersection

- [110] Mr Beard's reasonable concerns about sightlines at this intersection are met by Mr Williams' suggestion already adopted by Gillion that the tanker be of "cab-forward" design. As a number of experts recognise, the very size and slow speed of the water tanker should present to a reasonable motorist as a very visible hazard which should mitigate any unreasonable driver behaviour. Mr Williams has no faith in mirrors, but Mr Holland's suggestion (which Gillion accepts) that the current mirror at the intersection be replaced is worthwhile in my opinion.

Other issues

- [111] Mr Beard also has concerns about that part of the haul route that proceeds from that intersection to the Geissman Road / Eagle Street intersection, that is across the Mountain Plateau. His concerns are more to do with amenity given the very low even non-existence of the presence on that part of the route of such large vehicles, and the area through which the tanker passes, rather than to do with safety or traffic design issues.
- [112] Mr Litster SC makes a good point that traffic amenity concerns must be measured against the reasonable expectations of the public which are informed by a proper understanding of the role and function of these parts of the haul route that are over State-controlled roads. The Development Infrastructure Overlay Maps forming part of Exhibit 2 confirms that the intention of the Planning Scheme is to protect such transport routes both now and in the future for their intended use. Clearly these are roads where reasonable expectations include an expectation that heavy vehicles will be on these roads. This is confirmed by the evidence in this case. I do not think that Mr Beard's attempt to create sub-categories of heavy vehicles in relation to the DTMR 2009 traffic counts is very helpful.
- [113] Accepting that heavy vehicle movements are low across the mountain and even accepting his impermissible evidence about different perceptions of residents in relation to heavy water haulage vehicles, apart from Power Parade, all the roads in the DTMR's preferred haul route are State-controlled roads which do carry some heavy vehicles at times.

Conclusion on traffic

- [114] The preponderance of expert evidence favours Mr Williams' opinion that the alternative route envisaged by the DTMR conditions is the most suitable from a traffic engineering safety perspective. In my opinion the haul route safety concerns can be appropriately conditioned by adopting the DTMR conditions, and the conditions referred to above relating to Power Parade and the intersection with Main Western Road. The more detailed functional layout plan for upgrading the Eagle

Heights Road/Geissman Drive intersection as recommended by Mr Beard and Mr Williams in JR2 is such a condition.

- [115] In his final submission, Mr Lister SC again raises the issue that in the event the Court allows the appeal, about what is to be done during the estimated 12 month period required for the upgrade of the intersection. His client and Gillion's preferred alternative route is along Hartley Road and Long Road to Gallery Walk. This same issue came up on 21 December 2012 when the terms of the order suspending the operation at the enforcement orders were under discussion. My reasons for deciding to maintain the present haul route as the alternative are a matter of record, and some of those reasons are not applicable now. Clearly the present haul route has significant safety issues to which Mr Litster SC refers in his succinct and very helpful written submissions. Although in some minor aspects, Mr Williams was challenged by Mr Williamson in cross-examination, the agreement reached between his client and the DTMR lead me to the view that Mr Williams' evidence about the significant safety issues with the present haul route should be accepted. Mr Williams was not cross-examined about his reference in his trial report to the Hartley Road option. At pages 16 to 17 of his trial report Exhibit 13 Mr Williams said this:

“Hartley Road

As part of two JER-Traffic the potential for the use of Hartley Road to be used to gain access to Long Road from Main Western Road was discussed and it is noted that Mr Beard and I were of the opinion that his route could be explored further as an alternative to using Eagle Heights Road. Hartley Road currently provides access to a number of commercial ventures including commercial wineries and a landscape supplies business. There are also a number of residential dwellings also albeit on relatively large allotments.

The road width along Hartley Road is relatively narrow with widths generally between 5.8 metres and 6.2 metres. There are no formalised gravel or sealed shoulders on this road, with the form of the shoulders typically mowed grass verge treatments. It is noted that this road section is very straight and sight distance is relatively unconstrained with the exception being two crest curves.

At the intersection of Harley Road and Main Western Road there would need to be some localised widening at the throat of the intersection to accommodate swept paths for a 15.3 metre Articulated Vehicle. The right turn in and the left turn out of the Articulated Water Tanker (normally a 15 metre semi-trailer used) is shown (in a

figure next to Mr Williams' report) and indicates the extent of the widening that wouldn't be required.

While the pavement width is quite narrow and there are no formed shoulders, this road does not have the significant drop offs, relatively deep table drains and cliff faces immediately adjacent to the pavement edge. Nor does the road have the significant and constrained horizontal alignment characteristic of Tamborine Mountain Road. Vehicle tracking is likely to be more manageable.

While I do not have access to detailed traffic count data for this road, it would be reasonable to expect that traffic volumes on this road would be relatively low and the potential for vehicle conflicts would be commensurately low.

It is noted that the use of Hartley Road would result in the haulage vehicle associated with the proposal travelling past the existing school on Long Road. There is an existing school zone in place restricting vehicle speeds during the morning and afternoon set down and pick up period. However, to address any potential conflicts, if this section of road were to be used by the haulage vehicle it should be restricted such that there were no movements by the subject vehicle along this section of long road during school peak periods.

While not an ideal alternative, this road could provide a suitable "short term" solution for the haulage vehicle associated with the proposed use on the basis of the following:

- Speed restrictions were in place that limited the vehicle to a maximum speed along this section of road to 40 kilometres per hour;
- Localised widening was undertaken at the intersection of Hartley Road/Main Western Road; and
- Some localised shoulder widening/shoulder treatment was undertaken to provide passing locations that would not result in vehicles needing to travel on the grass verge."

[116] Council and the Co-respondents are understandably not happy with this route being an alternative whilst the upgrade is undertaken. Be that as it may the evidence of Mr Williams is unchallenged. The effect of that evidence is that a respected traffic engineer has stated that this is a significantly safer route to the present haul route. There is no evidence of any problems since 21 December 2012 involving the Gillion tanker and indeed there is no evidence of the Gillion tanker being involved in any accidents on the present haul route despite many years of operation. This may be because of the heightened sense of safety of users of that road because of its

problems to which a number of the experts referred in their evidence. It may also reflect the care taken by the Gillion driver in the daily journeys of the tanker up and down the mountain. Given the outcome of the appeal this issue is to some extent academic, but in the event that there is a successful appeal from my judgment, I indicate for the purposes of avoiding unnecessary costs that had I approved the development subject to the DTMR conditions, I would have opted for the Hartley Road alternative as that part of the haul route to be used while the intersection was being upgraded, subject to the proposals suggested by Mr Williams.

Noise

- [117] Noise is one aspect of amenity which to a significant extent can be measured. The acoustic experts who provided reports and gave evidence were Mr King (for Gillion) and Mr Savery (for the Council). Mr King provided a noise assessment report at the D.A. stage and a Noise Management Plan (N.M.P.) prepared by him has been in place for some time. By the time of the hearing a significant number of concerns raised by Mr Savery have been addressed by Gillion and others were agreed to during the hearing.
- [118] Although noise is not referred to in the definition of “amenity” in the Planning Scheme, there can be no doubt that noise emissions from a particular use are relevant to assessment of impact on overall amenity. In Council’s reason for refusal (11.4.4), it specifically takes up Overall Outcome 30 in Table 3.7.10 of the Tamborine Mountain Zone Code which, under the heading of “Noise, Air and Light Emissions”, provides that “Development protects and enhances the amenity and character of all Precincts within the Zone by avoiding or mitigating adverse emissions of noise and/or vibration” As Mr Beard’s evidence in relation to traffic engineering impacts demonstrates, it is not an easy task to tease out the specific impacts on amenity associated with noise emission from those associated with the “social and aesthetic”, but the Court has to do its best to do just that, based on the evidence of the noise experts and the residents living closest to the site. As will be noted later, many of the residents and/or submitter Co-respondents who have provided statements of evidence tend to associate noise impacts from the truck with the more general aspects of amenity and character which is perfectly understandable.

[119] As happened with Mr Beard, I think Mr Savery has to some extent transgressed into the more general and subjective aspects of amenity, and gone beyond the objective scientific assessment of noise emission impacts from the use. His reference in the JER 26.2.2012 (paras 26-27, p 1,061 Exhibit 1C) to scientific research conducted by a psychologist and acousticians is an example of this. It is understandable, and I am not being critical of Mr Savery, but it does flavour my assessment of his evidence in those few areas in which he now disagrees with Mr King.

[120] Later in the JER, (at 49) the experts record:

“49. Non-acoustic factors that may be related to adverse impact upon acoustic amenity may be gleaned from the submitted objections to this case. (sic) Non-acoustic factors that in the opinion of Mr Savery relate strongly to the acoustic amenity in the Power Parade locality are:

- (1) Road safety on Power Parade, including damage caused by the water truck to the road edge near the site entrance;
- (2) Water truck noise out of character with normal noise environment of locality;
- (3) Perceptions of unlawful use of the site and attitudes towards the proponents;
- (4) Perception of no local community benefit from the site activities;
- (5) Perceived negative impact upon groundwater resources of the proposed use.”

[121] The simple replication of the statement of Mr Savery from JER2 demonstrates how he has gone well beyond his area of expertise into areas that are for other experts (e.g. traffic engineers, town planners), or lay witnesses (the submitters), or are simply irrelevant e.g. attitudes to Gillion.

[122] Mr King did assess overall acoustic impact by reference to acoustic factors commonly referred to by acoustics experts as FIDO. His opinion in this regard is set out at para 28 on p 7 of Exhibit 5. This acronym means frequency, that is how often the noise occurs; intensity, that is the level of noise; duration, that is the time in which the noise occurs; and offensiveness, that is the perception of the noise in the context of the environment it occurs.

[123] I do agree with Mr King that the primary impact zone for assessment of noise impacts is the residences surrounding the site in Power Parade. Once the tanker is

on the State-controlled road system I agree with Mr King that the measurable noise impacts from its operation are subsumed as it were into the general noise emissions from other vehicles using the road system including the occasional heavy vehicle and other noise sources.

- [124] Gillion has mitigated the noise impacts both in Power Parade and on the haul route over the mountain by purchasing a modern forward cab design Hino truck which is much quieter than the previous truck, and includes an air brake release attenuator which removes a previous noise source from the older truck. This truck has GPS and other design features which, with the NMP, will go a long way to address driver behaviour concerns expressed by Mr Savery.

- [125] The major noise impacts occur when the tanker accesses and leaves the site. At the time of the joint inspection by the experts in 2012 a neighbour complained about the noise from the pump. The pump is in an enclosed shed and since then, on the recommendation of Mr King, Gillion have erected a new enclosure around the pump to minimise noise.

- [126] At the hearing, through Mr King, Gillion agreed to a number of other conditions which, in my opinion, will significantly mitigate adverse impacts resulting from noise emissions from the use. These include limits on the use of compression braking from Power Parade to the Curtis Falls intersection, and then through Gallery Walk and down Tamborine/Oxenford Road to the residence at 1596 Tamborine/Oxenford Road. Mr Savery was very concerned about noise emissions from the use of the compression brakes, and this will largely address his concerns including those relating to the haul route beyond Power Parade. Reasonably, Gillion's driver should be able to use the compression brakes over this part of the haul route in an emergency.

- [127] Mr Wright raised a completely new issue on this point in his closing address. I am prepared to accept (despite my very unfavourable view of his written outline referred to later in these reasons) that his (and the Co-respondents he appeared for) lack of understanding of Court procedures was a factor. He alleged that the failure to use compression breaks over this part of the haul route would present as a real danger to other road users and persons present in the vicinity of the road network.

Despite him asserting that he had expertise in this area, Mr Wright did not present any evidence on this point, did not cross-examine Mr Savery, and more importantly did not ask any of the three traffic engineers about the issue. Given that the condition is flexible to the extent of permitting the driver to use the compression breaks in an emergency, there is no merit in Mr Wright's belated submission.

[128] Gillion also agrees to other reasonable and relevant conditions proposed by Mr Savery, namely; a noise barrier near the truck turnaround on site, the truck not being left onsite overnight, GPS monitoring (this is already incorporated in the Hino and the NMP can provide that data from the truck's internal monitoring technology can be provided to an independent third party at reasonable intervals say every three months).

[129] In her final written submission, Ms Djohan submitted that the unchallenged evidence of the people most effected by noise omission from the use namely Mr and Mrs Guerin, Mrs Allender and Mrs Grey should be given "great weight" because their evidence is based on "actual experience and not some perception as to what the likely impacts are". It may also be observed that the noise emission levels measured by Mr King and Mr Savery were based on the actual noise and emissions from the use. Mr Savery has recommended an acoustic barrier along the boundary which Mr King does not think is necessary. In my view, given the extensive steps taken and to be taken as a result of the conditions designed to mitigate noise impacts and to bring noise impact emissions to an acceptable level, such a condition is not necessary. As Mr Clegg conceded given that the truck will make eight movements a day during the week on and offsite, for approximately 80 percent of the time the use will produce no noise at all. The concerns of the residents can, in my view, be reasonably met by the imposition of the conditions referred to above.

[130] The site is also heavily vegetated on both sides and at the front with mature closely-growing trees which I observed on inspection. It is uncontroversial that these trees provide a form of natural acoustic barrier to shield noise impacts on immediate neighbours. As a result of the severe storm in January a lot of the trees were damaged. Mr Guerin tendered photographs which, to some extent, show the damage. Gillion intends to revegetate to the pre-storm conditions which will take time. A condition can be imposed to this effect.

[131] A remaining area of disagreement between the experts concerns the noise criteria to be applied in assessing the impact of noise emissions from the use. Mr King undertook noise monitoring onsite in November 2010 (i.e. at a time when the older truck was in use) conventionally using the Environment Protection (Noise) Policy 2008 acoustic quality objectives. Even without the significant mitigating conditions that have now been agreed, by applying these objectives to his measurements taken in November 2010, his opinion was that the noise impacts were at acceptable levels. I agree with him that the use of a speech intelligibility measure proposed by Mr Savery is not reasonable in the circumstances nor is the setting of a noise level of 55 dB(A) and the installation of a permanent noise monitor.

[132] Ms Djohan did cross-examine Mr King about the accuracy of his noise logging in November 2010. In her final submission, she criticises Mr King because he was measuring noise emissions from the old truck, ignoring the fact that both experts agree that the new truck is much quieter. The results of these measurements are replicated in the tables reproduced at p 6 of Exhibit 5. Her cross-examination was by reference to Exhibit 27, an extract from the tanker log which Mr King agreed he had used. Mr King made the point that the highest noise level was adopted by reference to the tanker's arrival time taken from the log, and that the logger used records levels more or less every 15 minutes although this can vary slightly because of the design of the logger.

[133] She also took him to Exhibit 26, the Australian Standard for description in measurement of environmental noise, and to 4.3 of the Standard in particular this extract:

“Noise annoyance may have many causes, including the following:

...

(e) psychosocial factors, e.g. personal sensitivity to noise and attitudes towards the source.”

[134] She suggested therefore that there was validity in Mr Savery's use of such factors which of course are not capable of scientific measurement. Mr King's response was that (e) cannot be read in isolation from (a) – (d) and (f). He could also have said that the whole Standard, to the extent to which it is relevant to a particular assessment, should be considered. He could have also said that in these assessments in this State there is a Policy which he had regard to in his measurements, and 4.3 of

the Standard is to do with the assessment of “noise annoyance”, which in a planning case, is a factor of both scientific measurement (properly within the scope of opinion evidence from the noise expert), and other amenity impacts (properly within the scope of other experts and/or persons directly affected by a noise source). 4.2.1 – 4.2.5 of the Standard deal specifically with noise measurement.

- [135] Mr Savery’s criticisms of Mr King’s reliance on the Policy in his evidence in Court, seemed to rely on his interpretation of guidelines associated with the Policy which were not tendered. His criticism focussed on the Column 3 Acoustic quality objectives in the Policy reproduced at p 253 of Exhibit 1A. As I understand his evidence, he says these objectives are not helpful because the objectives are average i.e. per hour, whereas here we are dealing with a single event. I found his evidence on this point unconvincing given the environment, which includes other traffic including some trucks and other sudden noises (mowers, crows); and Mr King’s conventional approach by use of the Policy objectives is acceptable in the circumstances. I am satisfied that an approval can be appropriately conditioned to ensure that the use does not have unacceptable noise impacts.

The Planning Scheme Provisions

- [136] There is no dispute between the parties that the proposed use conflicts with the Planning Scheme. The real issue is the extent of the conflict. Gillion describes it as “mechanical” or “technical”. Ms Djohan in her oral submission said (at 1-32) “it is a major conflict because it is a locational conflict. We don’t want you here.”, and Mr Laidley on behalf of his clients variously described the conflict as “flagrant” and/or major. It can be assumed that the Co-respondents represented by Mr Wright agree with Mr Laidley. Mr Guerin submitted that the conflict was substantial and across the whole of the Planning Scheme.
- [137] At first blush the Planning Scheme does seem to “turn its back” (to use Mr Williamson’s expression somewhat out of context in his cross-examination of Mr Clegg at 11-19) on any Commercial Groundwater Extraction use in the Tamborine Mountain Zone or indeed in any other Zone in the Shire.

[138] The relevant principles for construing planning schemes generally are well-known and uncontroversial. They include:

1. planning schemes are to be construed broadly, rather than pedantically or narrowly, and with a sensible practical approach;
2. as a whole;
3. in a way which best achieves the apparent purpose and objectives;
4. in light of the *IPA*'s clear proscription in s 2.1.33 against prohibiting development or the use of premise (applicable at the commencement of the Planning Scheme);
5. although planning schemes have the force of law, they are largely the work of town planners and are not drawn with the precision of an Act of Parliament;
6. ambiguities or inconsistencies are to be determined in context, according to the intent of the planning scheme; and
7. a "purposive" approach is to be taken the construction of the planning scheme.

[139] In *Luke & Ors v Maroochy Shire Council & Watpac Developments* [2003] QPELR 447 his Honour Judge Wilson SC (as his Honour then was) set out these various principles at par 38 to 60 in a detailed and helpful analysis. At par 60 his Honour concluded his analysis thus:

"The proper method of construction is that adopted in the authorities set out above, involving identification of those parts of the planning scheme which are germane to the issues in the case, and their consideration to discern the tenor of the scheme, as a whole, and by that process, to discover whether or not the proposed development accords with the scheme."

[140] The Planning Scheme follows a typical *IPA* structure of identifying Desired Environmental Outcomes (DEO's) and Strategic Framework, and includes Zones Precincts and Codes. The Planning Scheme includes Planning Scheme Maps being Zone Maps and Overlay Maps. The Scheme sets out Assessment Tables and Consistent Development Tables. In relation to each Zone the structure of Assessment Provisions comprises an Assessment Table, a Consistent Development Table, and a Zone Code.

[141] Both Gillion and Council have approached the task of identifying for the Court the relevant sections of the Planning Scheme (in accordance with the sensible approach referred to in *Luke* above) by reference to the issues in the case. Mr Laidley has taken an approach that could be aptly described as “scatter gun” referring to many provisions in the Planning Scheme that cannot be sensibly related to issues germane to the appeal.

[142] Chapter 1 Part 2 sets out the structure of the Planning Scheme. Section 1.1.3 sets out the purpose of the Planning Schemes. It states (relevantly):

“The purpose of the Planning Scheme is to provide a frame work for managing development... by –

- (a) Identifying Desired Environmental Outcomes for the Planning Scheme area (the Shire); and
- (b) Identifying the Zones and the Overlays within the Shire; and
- (c) Identifying in respect of the Zones and the Overlays, Assessment Categories for development being Exempt development, Self Assessable Development and Assessable Development; and
- (d) Identifying in respect of the Zones and the Overlays, development which is Consistent Development and Inconsistent Development; and
- (e) Identifying in respect of the Zones and the overlays, assessment criteria in the form of codes for assessing Self Assessable Development and Assessable Development”

Part 2 Division 1 of the Planning Scheme sets out its Structure. DEOs are identified as “an expression of the Strategic Framework upon which the Planning Scheme is based”.

[143] Table 1.2.5 sets out the Zones and Precincts in the Shire. As I have noted, the site is in the Village Residential Precinct in the Tamborine Mountain Zone which appears at 3.7.1 of the Planning Scheme. Division 6 of this section of the Planning Scheme establishes Consistent Development Tables for all Zones. The Consistent Development Table for Tamborine Mountain Zone is at 3.7.7 of the Planning Scheme. An important part of Council’s case relates to the description of Consistent Development and Inconsistent Development in this part of the Planning Scheme:

“1.2.13 A Consistent Development

- (1) A Consistent Development is a development which is specified as a Consistent Development in a Consistent Development Table for the Zone (***Consistent Development***).

- (2) A Consistent Development is potentially consistent with the applicable Zone Code and the relevant Overlay Code.

1.2.14 Inconsistent Development

- (1) An Inconsistent Development is a development which is not specified as a Consistent Development in a Consistent Development Table for the Zone (Inconsistent Development).
- (2) An Inconsistent Development is Inconsistent with the Applicable Zone Code and the relevant Overlay Code.”

[144] By reference to 1.2.14(2), Ms Djohan makes a submission at [87] of her written submission to the effect that the wording “does not invite or permit demonstration or compliance with the relevant Zone or Overlay Code requirements to become Consistent Development”. That may be so, but care must be taken to ensure that by reading these provisions in isolation from other relevant provisions germane to the issues in the appeal, a mindset of impermissible prohibition is not adopted.

[145] Chapter 2 of the Planning Scheme sets out the Desired Environmental Outcomes and Strategic Framework. This section of the Planning Scheme sets out Consistent Development Tables for each Zone. Section 2.1.3 sets out the Desired Environmental Outcomes for the Shire under a number of subheadings. Under the subheading *Environment* at 2.1.3(1)(b) the Planning Scheme states that “the environment is conserved such that – ... loss of amenity...(is) avoided or otherwise mitigated; ...”. Under s 2.1.3(2) *Economic*, the Planning Scheme at (d) (requires Development that) protects the continuation of lawful but non-conforming uses or approved uses of limited duration, but only where there is a proven overwhelming community and economic need for such uses; ...”. Under the same subheading at 2.1.3(2)(l) the Planning Scheme states “(that development) is of a scale, form and intensity appropriate for the locality and is only developed at a greater scale, form or intensity where it can be demonstrated that there is both an overwhelming community need and overwhelming economic need for the development;”

[146] Part 2 Chapter 2 contains the Strategic Framework for the Shire. Broad and Local Strategies are set out 2.2.11 set out the Local Strategies for the Tamborine Mountain Zone including:

“ ...

- (2) All development is –

...

- (c) Designed to enhance the character and amenity of the local area.

...

- (4) The water quality of the Tamborine Mountain Zone is protected and groundwater resources are primarily used for agricultural purpose. ...”.

[147] The Consistent Development Tables at 1.2.11 refer the reader to 3.77 of the Tamborine Mountain Zone in Chapter 3. Tamborine Mountain Zone is divided into 12 Precincts. 3.7.4 sets out the Assessment Table for Material Change of Use in the Tamborine Mountain Zone. Commercial Groundwater Extraction is Impact Assessable by reference to Assessment Criteria including the Tamborine Mountain Zone Code at 3.7.8 and the Commercial Groundwater Extraction Code at s 5.2.11 and three other Codes. It is common ground among the town planners that Commercial Groundwater Extraction is not noted as a Column 1 Use in any other Assessment Table for Material Change of Use in any other Zone.

[148] 3.7.6 sets out the Interpretation of the Consistent Development Table for the Tamborine Mountain Zone. The Interpretation provision is in accordance with the terminology of 1.2.13 and 1.2.14 in Part 2 of Chapter 1 of the Planning Scheme.

[149] Commercial Groundwater Extraction is not referred to in the Consistent Development Table at 3.7.7 for the Tamborine Mountain Zone. It is common ground that the use is not included in the Consistent Development Table for any other Zone in the Shire.

[150] Division 4 Part 7 of the Planning Scheme contains the Tamborine Mountain Zone Code. Section 3.7.9 states, “The Overall Outcomes for the Tamborine Mountain Zone are the purpose of the Tamborine Mountain Zone Code.”

[151] 3.7.10 sets out the Overall Outcomes for the Tamborine Mountain Zone. For obvious reasons, these Overall Outcomes received significant scrutiny both in the Joint Expert Reports of the town planners and during the hearing.

- [152] Similar to other IPA Schemes, Overall Outcomes for the Zone are stated under various subheadings. OO1 under **Overall Visions** calls for development “designed and located to protect and compliment the existing natural environment, semi-rural character and scenic amenity values of Tamborine Mountain.” OO3 to 006 dealing specifically with **Amenity** received some attention. OO4 refers to development that “promotes a high standard of amenity compatible with the existing character.” Other Overall Outcomes refer to “enhancement of local character and the promotion of distinctive local identity and sense of place”. Under **Ecological Sustainability** in Overall Outcomes for the Tamborine Mountain Zone reference was made in the evidence to OO18: “Development contributes towards the sustainable use of groundwater supplies and avoids groundwater contamination”. Under **Noise, Air and Light Emissions** OO30 states: “Development protects and enhances the amenity and character of all Precincts within the Zone by avoiding or mitigating adverse emissions of noise and/or vibration...”.
- [153] Not surprisingly, much attention was given to OO46 under the sub-category of **Precinct Intent**. OO46 states: “Development within the *Village Residential Precinct* i (sic) is typically urban residential in character with a moderate to high level of amenity on lots not served by a reticulated water and sewerage system. The Precinct, in close proximity to the Business Precinct, provides a principal location for additional urban residential accommodation.”
- [154] 3.7.8 provides that development complies with the Tamborine Mountain Zone Code if in the case of –
- “(c) Impact Assessable Development, there is compliance with the Specific Outcomes of the Tamborine Mountain Zone code and the purpose of the Tamborine Mountain Zone Code being the Overall Outcomes for the Tamborine Mountain Zone.”
- [155] 3.7.11 sets out **Specific Outcomes and Prescribed Solutions for the Tamborine Mountain Zone** and typically of many IPA Schemes uses Tables settings out Specific Outcomes and Acceptable Solutions if self-assessable and probable solutions if Code Assessable is established.

“

Column 1	Column 2

Specific Outcomes		Acceptable Solutions – if Self-assessable	Probable Solutions – if Code-assessable
Consistent Development			
SO1	Development is limited to development which is ‘Consistent Development’ as identified in Table 3.7.7 Consistent Development in the Tamborine Mountain Zone.	S1.1	No Solution is prescribed.
Amenity, Environmental Management and Greenspace			
SO2	Development – (a) protects and enhances residential amenity, residential character and a pleasant and safe living and working environment; ...	S2.1	No Solution is prescribed.

...

Noise, Air and Light Emissions					
SO34	Development protects and enhances the amenity and character of the Zone and	S34.1	No Solution is prescribed.		

Precincts by avoiding or mitigating the adverse emission of noise and vibration.	
...	

”

[156] Chapter 3 then deals in Subdivision 6 with **Specific Assessment Criteria for the Village Residential Precinct and the Residential Precinct.**

“

Column 1	Column 2
Specific Outcomes	Acceptable Solutions – if Self-assessable Probable Solutions – if Code-assessable
SO1 Development provides for predominantly low-density urban residential development characterised by single dwellings on urban lots.	
...	
SO4 Development ensures a building height, bulk and setback consistent with the character of a typical country ‘village’.	
...	
SO7 Development provides for a	

limited range of non-residential uses where it can be demonstrated that the amenity and character of residential areas can be maintained.	

”

[157] As I have noted earlier, Council does not assert any conflict with the Commercial Ground Water Extraction Code apart from conflict with the Specific Outcome 1 in Table 5.2.13 which states “Development does not detrimentally impact upon the amenity of the surrounding area”.

[158] Amenity is defined in the Planning Scheme as:

“The physical, social and aesthetic elements of the environment that increases the desirability of the relevant part of the Shire to its community or the marketability of the relevant part of the Shire to the public”.

[159] The definition does no more than attempt to encapsulate descriptions of the concept in many decisions of this Court which often refer to what de Jersey J (as the Chief Justice then was) said in *Broad v Brisbane City Council and The Baptist Union of Queensland* [1986] 2 Qd.R 317 at 326. Amenity includes both tangible and intangible notions but intangible impacts on amenity are to be assessed by reference to the reasonable expectations of residents affected by the proposed use, which are in turn informed by reference to the planning controls in the Planning Scheme.

[160] In *Ackland Pastoral Co Pty Ltd v Rosalie Shire Council & Ors* [2008] Q.P.E.L.R 342 at [40] on p 348, Dodds DCJ observed:

“A person’s right to put their land to any lawful use they wish is, in these more enlightened times, tempered by town planning considerations, one of which is amenity. Consideration of amenity in a town planning context is not in the abstract. It is informed by the planning controls applied in the area under consideration and the notation of reasonableness. Proposed development will often affect existing amenity. What is unacceptable is that detrimental effect to an unreasonable extent according to the reasonable expectation of other landholders in the vicinity given the sort of uses permitted under current town planning controls. While the subjective views of

those whose amenity may be affected by a proposed development are not to be ignored, in the final analysis the question must be answered ‘according to the standards of comfort and enjoyment which are to be expected by ordinary people or plain, sober and simple notion not affected by some special sensitivity or eccentricity’. The weight to be accorded to subjective views can only be judged in the light of all the evidence about the subject. The views may be supported by other evidence or other independent evidence may show that in an objective sense they are overblown as in *Telstra Corp Ltd v Pine River Shire Council* [2001] QPELR 350”. (citations omitted).

- [161] In this case there were over 900 adverse submitters. Both Council and Mr Laidley submit that the evidence of the submitters should be given significant weight in relation to various issues including intangible impacts on amenity because their evidence is unchallenged. As well as the assessment of reasonable expectations in light of planning controls, and the evidence relating to amenity the Court must assess the weight to be given to that evidence. As de Jersey J said in *Broad* (at 325):

“Informing his own view on the likely affect of a proposed development on the amenity of an area, a Judge would I think prefer views from residents which find justification in specific, concrete likely affects of the proposed development”.

In any event, analysis of the evidence of the Co-respondents in Exhibit 14, which appears later in these reasons, indicates why care should be taken by an assessment manager not to be overwhelmed by the number of adverse submissions.

- [162] Gillion’s point that 93% of the submissions used a pro forma template being a template published in a free newspaper called The Tamborine Mountain News is not disputed. Mr Wright claimed some responsibility for the wording of the template in his closing remarks. A similar point arose in *K Page Main Beach v Gold Coast City Council* [2011] LGERA 180 where Rackemann DCJ observed:

“There were a large number of submitters, many of whom used a pro forma. The number of submissions is relevant, but of greater weight is the validity (or otherwise) of the grounds relied upon.”

- [163] Also of relevance, and a focus of evidence concerning the reasonable expectations of residents, is the definition of “House” in the Defined Use Section of the Dictionary in the Planning Scheme.

“**House** means a dwelling unit, used for residential purposes, ...
The term also includes the following - ...

(e) – The parking of one heavy vehicle on an allotment less than two hectares in size, or two heavy vehicles on an allotment equal to or greater than two hectares in size.”

[164] It is not disputed that all of the surrounding residences in Power Parade are less than two hectares in size. “**Heavy Vehicle**” is defined in the Planning Scheme as:

“(a) a motor vehicle, prime mover for the carriage of persons and/or goods with a combined gross vehicle mass in excess of 5 tonnes and a maximum length of 17.5 metres; ...”.

[165] The planners met on 21 February 2012 and produced the JER1. By a distillation of the disputed issues set out in the various lists of issues in disputed filed by the parties and the Notice of Appeal, they agreed on six key planning issues which they agreed could be summarised as follows:

- (a) **Key Planning Issue A** - Whether or not the proposed development generates any unacceptable adverse amenity impacts;
- (b) **Key Planning Issue B** – Whether or not the proposed development generates any unacceptable adverse traffic impacts;
- (c) **Key Planning Issue C** – The compatibility of the proposed development with the surrounding area;
- (d) **Key Planning Issue D** – Whether or not the proposed development generates any unacceptable adverse impacts on the sustainability of the groundwater resource;
- (e) **Key Planning Issue E** – Whether or not the proposed development compromises the achievement of certain DEOs of the Planning Scheme; and
- (f) **Key Planning Issue F** – Whether or not there is conflict with the Planning Scheme and if there is found to be a conflict, the demonstration of sufficient grounds to justify a decision to approve the proposed development, despite such conflict.

[166] The other issue raised by Mr Clegg and Mr Forsythe concerning the DTMR is no longer relevant. Their opinions relating to the truck parking on the site over night, and the use (described by them) of the house on the site as a “Caretakers

Residence”, arising partly out of the fact that one of the truck drivers lived there for some time, are also no longer relevant as Gillion has agreed to conditions that prevent the truck being left onsite over night or the driver or any “caretaker” residing in the house.

- [167] At the first JER, the planners agreed on a number of contextual facts and circumstances including orders described as “The Surrounding Area”, for the purpose of assessing impacts in light of the relevant Planning Scheme provision. As this part of the JER1 attracted some controversy during cross-examination of Messrs Brown, Clegg and Forsythe by Mr Williamson, it is helpful to set out in full this section which was said to be “Agreed by the experts, unless otherwise stated”:

“The Surrounding Area

- (17) The surrounding area is defined as the allotments bound by Alpine Terrace at the north-east, Fern Street to the east, St Bernard’s Street and Beaudesert Street to the south and Main Western Road to the west and north-west.
- (18) To the north-east the site directly adjoins land referred to as 38 Alpine Terrace, Mount Tamborine and more properly described as Lot 45 on RP168897, which contains a retail nursery business – “Birchgrove Nursery and Garden Centre”.
- (19) To the south-east the site directly adjoins land referred to as 28-30 Power Parade, Mount Tamborine and more properly described as Lot 88 on RP168897, which contains a detached dwelling located toward the rear of the allotment behind a fenced, open grass paddock.
- (20) To the south-west the site is adjoined by Power Parade, which has a reserve width at this location of approximately 20 metres.
- (21) To the north-west the site directly adjoins land referred to as 18-20 Power Parade, Mount Tamborine and more properly described as Lot 86 on RP168897 which contains a detached dwelling that is set back and in alignment with the tanker truck turn around.
- (22) Adjacent to the subject site, across Power Parade to the south is land referred to as 23-31 Power Parade, Mount Tamborine and more properly described as Lots 3 and 4 on SP197054, which contains a detached dwelling.

- (23) To the south-west, adjacent to the subject site and across Power Parade is land referred to as 19-21 Power Parade, Mount Tamborine and more properly described as Lot 2 on SP197054 which contains a detached dwelling.
- (24) An aerial photograph of the surrounding area is included (figure 2).
- (25) The surrounding area comprises predominantly large allotments that are not serviced by reticulated water or sewerage, containing predominantly detached dwellings. Other, non-residential land uses also operate within the surrounding area, including agricultural, animal husbandry, and retail plant nursery type uses.
- (26) A use involving both the extraction and bottling of groundwater is understood to operate from the nearby land at 18-20 St Bernard's Street, Mount Tamborine. According to the Scenic Rim Regional Council's PD online records, Scenic Rim Regional Council issued an approval in response to a request to change the approval for that use on 29 July 2010. The changed condition imposes a limit on the volume of water to be transported off site per week (i.e. 11,400 litres using a combination of 11, 15 and 19 litre bottles). That correspondence refers to the use as being a Home Occupation (Residential Use) under the superseded Planning Scheme.
- (27) Those allotments with a common boundary to Power Parade range in size from approximately 4,047m² to approximately 16,115m², with an average size of approximately 8,102m²."

[168] During cross-examination Mr Brown, and to a lesser extent Mr Clegg, made some significant concessions to which I will later refer. Regarding the controversy surrounding this description, and the opinions of Mr Brown and Mr Clegg and Mr Forsythe in the light of that description, I think the answer to the controversy is that there is none. The surrounding area includes a quite detailed description of properties surrounding the site in Power Parade, and generally the area surrounding the site which is predominantly in the Village Residential Precinct. On a proper construction of the Planning Scheme, the decision maker is directed to assess impacts, such as those on amenity and character, by reference to the site itself, the

nature of the use, Power Parade more generally, including its residents, the surrounding area and across the Zone along the haul route and residents who may be impacted by vehicle movements. In relation to the Key Planning Issues, reasonably all the planners deferred to relevant experts. It follows that issues B and D are resolved in favour of Gillion, subject to the conditions described earlier. In relation to A, ultimately, as a result of the joint experts meeting, Mr Brown, Mr Clegg and Mr Forsythe relied heavily on the Consistent Development Table in the Zone, taken up in SO1 of the Specific Outcomes Table for the Zone, and OO46 containing the Precinct Intent for development in the Village Residential Precinct.

[169] The manner in which the evidence of the four planners was tested during the hearing, tended to meld Key Planning Issues A and C together under the general descriptor of amenity and character impact. In stating Key Planning Issue E unfortunately the planners used the terminology of the IPA. The DEO's, to the extent to which they are relevant to any Impact Assessment of the proposal as against the Planning Scheme, are merely part of the verbiage to be considered by the Assessment Manager. It is true that the DEO's are part of the Strategic Framework of the Planning Scheme. When assessing impacts on amenity and character, and conflict with the Planning Scheme, the DEO's do not assume any greater or any less importance than other sections of the Planning Scheme which refer to these issues. Although they are expressed to be "the basis for the Planning Scheme measures", they are expressed in expansive and general terms, no doubt because of their application across the whole Shire, with its many distinct and different Zones. In any event, similar concepts such as "loss of amenity", "distinctive character" etc. find expression, albeit in slightly different terms, in the Overall Outcomes for the Tamborine Mountain Zone.

[170] The character of the surrounding area in Power Parade, as agreed to by all the town planners, is set out above. Mr Brown conceded (reasonably in my view) that the extraction of groundwater and its storage onsite were aspects of the use not out of character with the surrounding area. When a use is viewed as a whole, and in particular the eight heavy vehicle movements a day, transporting 28,400 litres on each journey to the factory at Staplyton, his opinion was that this directly conflicted with OO46. In the JER Mr Brown misdescribed the terminology of OO46, and conceded that he had proceeded on the basis at that time, that the Overall Outcome

for the Village Residential Precinct designated an area intended to have a high level of amenity, whereas it is intended to have a “moderate to high level of amenity”. To be fair to him, he made this correction in his evidence-in-chief, but he conceded in cross-examination that he had proceeded on the basis of an incorrect understanding of the wording of OO46. It is clear that all the planners regarded OO46 as an important part of the Planning Scheme for the purposes of assessing the proposal. Mr Lyons’ opinion was that it was drafted in such a way that it did not describe in any meaningful way the site and surrounding area.

[171] It is also clear that the statement of Precinct Intent set out in OO46 does not describe the character of the surrounding area as agreed by the planners. This is not in itself surprising as the Precinct Intent applies across the Shire, and it is rare to ever find an area which perfectly fits the description ascribed to it by the Planning Scheme: *Stappen Pty Ltd v Brisbane City Council & Ors* [2005] Q.P.E.L.R. 466 at 473 and at para [32]. That is why Planning Schemes are to be construed broadly and not pedantically and with a sensible and practical approach.

[172] Mr Brown agreed that the area surrounding the site described in the joint experts report is not typically urban, and he agreed that the Intent for the Precinct as “a principal location for additional urban residential accommodation” could not be achieved because the Reconfiguration of Lot Code discourages further subdivision because of the lack of water supply and sewerage.

[173] The same difficulty arises when the one drills down further in the Planning Scheme to the Specific Assessment Criteria for the Precinct at 3-389. Mr Brown fairly conceded that in the surrounding area in this Precinct in the Tamborine Mountain Zone, Specific Outcome SO1 could not be achieved, and could never be achieved without changes to settlement patterns and, inferentially the Planning Scheme, particularly the Reconfiguration of Lot Code. Mr Brown conceded that OO46 would have to be “read down” in order to achieve what it intends with the surrounding area in this Precinct. Neither Mr Clegg nor Mr Forsythe were prepared to concede the difficulties with OO46 accepted by Mr Brown.

[174] Given that I have earlier resolved the “hard” amenity impacts in favour of Gillion (noise, groundwater, traffic), the remaining issues raised by the Council and the Co-

respondent submitters, and Messrs Brown, Clegg and Forsythe relate to conflict with character in which the site is located, including Power Parade, and amenity (intangible) provisions of the Planning Scheme, particularly relating to the residences closest to the site, including those along that part of the haul route.

[175] At this point it is necessary to observe that as a matter of principle, when an Assessment Manager is required (as is the case here) to assess a proposal to regularise an actual use (in this case declared to be unlawful), the applicant receives no benefit merely because the use is already in place. However, there is no caveat on the Assessment Manager considering real evidence of actual impacts up to the time of hearing: *Leda Holdings Pty Ltd v Caboolture Shire Council and Ors* [2006] QCA 271 at [31].

[176] When one has regard to the deficiencies identified above in the Zone Precinct Planning Scheme Provisions and the evidence, the reasonable expectations of the residents informed by the Planning Scheme should include:

- (a) The character of the surrounding is predominantly large allotments with detached dwellings that are not serviced by reticulated water or sewerage. The area includes some uses that are non residential which are inconsistent uses under the present Planning Scheme but approved under the Superseded Planning Scheme such as Mr and Mrs Taylor's nursery business and the groundwater extraction and bottling use on a much smaller scale in Bernard Street.
- (b) The extraction and storage of groundwater of itself is not inconsistent to the character of the area nor is the scale of the pumping shed out of character.
- (c) Because of the definition of "House" in the Planning Scheme, heavy vehicles can be present on the road network and indeed Power Parade. As the definition of "Heavy Vehicle" in the Planning Scheme indicates, this can include vehicles longer than the Gillion semi-trailer. There is no evidence that any resident in the surrounding area has in fact parked a heavy truck overnight on their property, but the Planning Scheme permits this. Gillion has never submitted (as Mr Laidley seems to think) that this justifies eight heavy vehicle movements a day. It has always been its case that this

part of the Planning Scheme informs the reasonable expectations of residents.

- [177] None of this is meant to detract from the strongly held views of the residents, particularly those most impacted by the use such as Mr and Mrs Guerin, Mrs Grey and Mrs Allender. It is simply a reflection of longstanding principle that reasonable expectations of these people are to be informed by reference to the planning controls in the Planning Scheme.
- [178] A fair analysis of the “unchallenged” evidence of the submitter Co-respondents in Exhibit 14, does reveal that to a significant extent their concerns are directed at “hard” amenity impacts i.e. traffic, noise and ground water impacts. Some indicate that their concerns about traffic amenity along the haul route includes long standing concerns about the impact of water trucks, not only the Gillion tanker. This evidence tends to undermine Mr Beard’s speculation about differing attitudes of residents to other water trucks because of an understanding that such trucks are necessary because of the absence of a reticulated water supply.
- [179] Mr Stotschek referred to traffic amenity, referring to diesel fumes, noise, and visual impact of “trucks going up and down the Mountain’s roads and particularly Power Parade.” It is self evident, that the Gillion tanker will only travel over a section of Power Parade, and Mr Lister’s point about reasonable expectations being informed by the Planning Scheme’s protection of State controlled roads, is particularly germane when considering intangible amenity impacts in the light of this sort of evidence, which is common in Exhibit 14. Others such as Mr Pratt, in his capacity as President of the Eagle Heights Progress Association, talk about impacts at the Geissman Drive/Eagle Heights Road intersection, which he describes as a “regular and frequently used haul route”. Clearly the upgrade required by the DTMR will ultimately tend to alleviate, rather than compound impacts on traffic amenity at this intersection. The evidence of residents who conduct tourist businesses at Curtis Falls (such as Ms Mierzejewski) seems to me to emphasize the importance of this condition to the community. Ms Rip, a local real estate agent who lives in Alpine Terrace, is one of those who speaks of traffic amenity impacts from water trucks “not just the Gillion truck”. Evidence of this nature is not surprising given the status of the road system beyond Power Parade. Mrs Rip is one of a number of Co-

respondents who refer to the use as “Industrial”. Mr Laidley makes this argument in his closing submissions. It arises out of a debate among the town planners concerning the so called “nesting” provisions in the Dictionary section of the Planning Scheme.

- [180] In Figure 1.2 C. “Commercial Ground Water Extraction” is said to be a defined use within the “Extractive Resource” category, and “Industrial” use class. All the planners (perhaps with the exception of Mr Forsyth) seemed to regard these “nesting” provisions as not being particularly relevant in assessing impacts of the use against the other relevant provisions of the Planning Scheme, particularly the “Precinct” specific provisions. It is obvious from the limited number of Use Classes set out at s. 1.2(1), that the only Category or Class that could apply is “Industrial”. “Industry” is defined as a use in the Dictionary but “industry or industrial activity” is not otherwise defined. The absence of permanent employees on site, and the very nature of the use itself does not justify the description of “industrial activity” for the purposes of assessing impacts.
- [181] Mr Ellen is also a real estate agent who lives in Alpine Terrace. He concentrates on damage to the road surface of Power Parade and safety. My inspection of the street did not justify his observation to the effect that Power Parade had changed “from being one of the best streets on the Mountain to looking shabby”.
- [182] In my view, the evidence of Mrs Gray, Mrs Allender and Mr Guerin is most relevant to intangible impact on amenity and impact on character. All complain of breaches of the NMP which is concerning. However, since then, Gillion has taken steps and accepted conditions which will, in my opinion, alleviate their concerns about noise. I fully understand that they will probably never accept that – Mrs Gray talks of noise impacts “despite what any expert might try and say otherwise”. In relation to water, Mrs Gray says that the bore on her property dried up in 2000 i.e. well before the Gillion production bore was sunk. She concedes that the new tanker does not emit diesel fume smells to the extent of the older truck. Their concerns about truck movements outside the designated hours and days seem to relate more to the circumstances leading up to the enforcement orders.

- [183] Mr Guerin's evidence is the most comprehensive of all the Co-respondents. This is probably because his is one of the residences most significantly impacted by the use, and he has used his town planning (and probably police) skills in a long term effort to bring Council in and to oppose the use continuing. His evidence, perhaps understandably, does tend to exaggerate some of the problems e.g. he describes the noise of the truck as a "constant nuisance". In many respects, the Planning Scheme, despite all its verbiage about enhancing amenity and protecting character, is not particularly helpful to people like Mr Guerin, who find that despite the semi-rural nature of his street (it was in the Rural Zone in the Superseded Planning Scheme), at the Village Residential Precinct level only a "moderate to high" level of amenity is anticipated.
- [184] Having regard to the reasonable expectations of residents, I do find that there is unacceptable impact on amenity and character to the residents of Power Parade such as Mr Guerin, Mrs Gray and Ms Allender who are most directly affected by the truck movements in particular. It is unacceptable impact on amenity in the intangible sense but real impact on character. Having regard to my other findings, I would categorise this conflict with the Planning Scheme as minor if considered in isolation. Other nearby residents such as Ms Morgan (at 51 Power Parade) refer to noise issues emanating from tanker movements as early as 5:30 am, and as late as 10:00 pm. Her affidavit related to the enforcement proceedings and is of little weight now.
- [185] Mr Laidley refers specifically to Mr Craig's evidence. He lives in Alpine Terrace, about 500 metres from the site. His bores were sunk in 2007, around the same time as the Gillion production bore. At first blush, and if one has regard only to the summary in Mr Laidley's final submission, this evidence does suggest some impact directly on Mr Craig's groundwater supply. It is not clear to me that his bores are registered. They should be given the date. His bores were not tested by Mr Anderson. However, Mr Craig notes that his bore does operate effectively for short periods after heavy rain. This suggests to me that it is probably connected to the higher Aquifer 5 and not Aquifer 3.
- [186] Some of the other Co-respondent's affidavits from the enforcement proceedings are part of Exhibit 14. Some are very general e.g. Mr Attwater who lives at 2 Power

Parade. I assume this is on the haul route, but unfortunately the Smart Map said to be exhibited to his affidavit showing his residence has been omitted.

Categorisation of Conflict

- [187] Gillion argues that the real conflict in this case comes down to the conflict arising from the inconsistent use point. It describes it as mechanical or technical. It submits, in effect, that a proper reading of the Planning Scheme suggests that Council has not properly considered this particular use in the formulation of its Planning Scheme. It points to the absence of any planning studies, such as the QUT study on groundwater to which earlier reference is made, as indicating a lack of policy objective in preparing the Planning Scheme in its present form relating to this particular use.
- [188] I cannot accept that argument. Commercial Groundwater Extraction was not a use defined in the Superseded Planning Scheme. In this Planning Scheme however, not only is it a defined use, a Commercial Groundwater Extraction Code is provided and the use is specifically provided for in the Assessment Table for a Material Change of Use in the Tamborine Mountain Zone. It follows that its exclusion from the Consistent Table of Uses in the Tamborine Mountain Zone and indeed in all other Zones in the Shire was as a result of a deliberate policy decision.
- [189] Council may have had this particular use in mind. There is no evidence of that. However when it is read as a whole, and in a practical and sensible way, it is clear from its Planning Scheme that Council did not want a use such as this anywhere in the Shire but, in anticipation that such a use may be applied for, it set a high bar in by making the use an inconsistent use in all Zones and relevantly, in the Tamborine Mountain Zone.
- [190] Its designation therefore as an inconsistent use in the Tamborine Mountain Zone is significant in this case. I agree with Ms Djohan that to concentrate too much on assessing the proposal against the Overall Outcomes for the Zone and the Specific Intent for the Precinct, to determine the degree of conflict would be an error, as (a) it would offend the principles applicable to the construing of Planning Schemes and (b) would, contrary to the proper construction of s 1.1.12 of the Planning Scheme

together with SO1 in Table 3.7.11, have the unintended tendency of converting “Inconsistent Development” into “Consistent Development” subject to Impact Assessment. Gillion refers to a lack of “higher order” provisions in support of its argument that Council did not properly provide for this use in its Scheme. I have rejected that argument. If it is saying rather that in drafting its Planning Scheme, Council could have been clearer in relation to its attitude to this use, the same observation could apply to the circumstances of almost every merits appeal. In particular, Gillion refers to 2.2.11 (4) and makes the point that this is the only direct provision dealing with groundwater on Mount Tamborine in the Strategic Framework section of the Planning Scheme, and it does not refer to the use and inferentially does not exclude the use in the Tamborine Mountain Zone. This can be accepted as the whole of the Planning Scheme reveals. It is not a consistent use in any Zone but it is only in the Tamborine Mountain Zone that a level of assessment is provided specifically for the use whereas in other Zones it would come within the “catchall” “Other Defined Uses” and still be Impact Assessable.

Grounds

a) Need

- [191] Need was identified as a ground in paragraph 14(f)(i) of the Notice of Appeal. Gillion relies on the evidence of its principal Mrs Pamela Gill in support of this ground. No evidence was called from a needs expert and Mr Laidley objects to large parts of Mrs Gill’s trial affidavit on various grounds. He is not joined in that objection by Ms Djohan.
- [192] The objection to large parts of Mrs Gill’s trial affidavit was made on the afternoon of the last day of evidence, and given the fact that the hearing had far exceeded its estimated time of eight days, and the need to conclude the evidence I determined to deal with the objections in my judgment. A marked copy of Mrs Gill’s trial affidavit, Exhibit 8, was handed up by Mr Laidley together with a series of three letters commencing with his instructing solicitors letter dated 5 November 2012, setting out the objections and requesting further disclosure. Council’s solicitors joined the request for further disclosure by letter dated 9 November 2012. This led to a letter from Gillion’s solicitors dated 12 November 2012 in which it proposed

further disclosure on the basis of Fielder Gillespie undertakings. I assume because Ms Djohan did not join Mr Laidley in objecting, that her client was satisfied that the further disclosure was appropriate. I have reviewed that letter and am satisfied that the representative documents therein disclosed (or indicated that they would be disclosed) was sufficient to overcome the objection.

[193] Mrs Gill was never presented as an expert on water quality and any opinions she expresses which qualifies as an opinion are not admissible. That does not mean she cannot give evidence gathered over eight years of operation of a business in which she has been intimately involved as CEO. She is also not presented as a “needs analysis” expert, although Gillion relies solely on her evidence and the customer list FG1 tendered through her, in support of its argument that there is a town planning and community need for the proposal which (with other grounds) is sufficient to overcome any conflict with the Planning Scheme.

[194] Having regard to the contents of the letter from Gillion’s solicitors I am satisfied that the documents disclosed were sufficient to enable the Co-respondents to appropriately and fairly test Mrs Gill’s evidence. Indeed Mr Laidley actually tendered one of these disclosed documents during his cross-examination of Mrs Gill.

[195] In *Baptist Union of Queensland v Brisbane City Council & Anor* [2003] QPELR 61 at 71 [55] to [56] his Honour Judge Brabazon QC said of need:

“‘Need’ can mean rather different things. In the abstract, it might refer to anything which might be provided for the benefit of the community. Usually, if there is a demand for something, then there will be a need for it, even if some members of the community may disapprove of that need. So, there is a need for hospitals, shops, housing, hotels and bottle shops. ... There may be an issue about whether or not there is an actual need for land to be used to provide a particular benefit to the community.”

[196] In that decision his Honour referred to a statement from the judgment of Carter DCJ (as his Honour then was) in *William McEwens Pty Ltd v Brisbane City Council* [1981] 1 QPLR 33 at 35. In context, the statement is as follows:

“..the basic assumption must be that there is in existence at the time of the application a latent unsatisfied demand on the part of the persons affected by the planning scheme which is not met at all, or being adequately met by the scheme in its present form”.

“It should not, in my opinion, be thought that a rezoning can be justified by merely contriving a need which is, essentially, nothing more than an exercise in entrepreneurial skill, the effect of which is to give the applicant some commercial advantage. Nor will land be rezoned in favour of (an applicant) who seeks to create the need by the use of his land in the manner he desires.”

[197] The question of whether a need is shown to exist is to be decided from the perspective of a community and not that of the appellant, commercial competitor or even objectors. A community consists of more than just particular members of it. The concept of community need has moved on some what since Carter DCJ made the above statement.

[198] Having noted that, the evidence of Mrs Gill and the customer list does not bespeak of any significant benefit to the community of Mount Tamborine or indeed the community covered by the Planning Scheme. This observation is not fatal to the establishment of town planning need. In this context, I should also note that, despite it being a ground asserted the Notice of Appeal, Gillion has called no evidence to suggest that any member of the Mount Tamborine community, or indeed any member of the community encompassed by the Shire, is employed at the Wetfix operation at Staplyton. It can be accepted that the relatively small number of customers identified in the customer list from Mount Tamborine who purchased water from Wetfix is relevant to this issue. Having said that, the evidence of Mrs Gill suggests the water bottled at her company’s factory at Stapleton is sold by way of commercial contract to a number of retailers and distributors. It is not suggested that any of these retailers and distributors form part of the Mount Tamborine community. Mr Williamson also referred to water as essential to life. It is, but there is no evidence of drinking water shortages on the Mountain, and water once came from taps. Because this water is bottled, that does not give it any special quality when assessing a town planning need for it.

[199] Before setting out her evidence and considering it, I refer to the cross-examination of Mrs Gill by Mr Laidley on the afternoon of the last day of the hearing, suggesting that she had been duplicitous in her dealings with the Council over increased loads required for emergency purposes in the wake of the Queensland floods. He suggested by reference to affidavits filed in the enforcement proceedings, that Mrs

Gill had underestimated the amount of that water sold by Wetfix commercially, and overestimated the amount used for philanthropic purposes. Despite this, he does not rely upon it in his final submissions as affecting her credit. It is an unseemly example of a barrister seeking to wound but not to strike for apparently no forensic purpose. It smacks of the same completely unfair attack on Mrs Gill and the integrity of her companies encapsulated in Mr Wright's final submission. I appreciate and understand the passion generated by this development application and the appeal amongst members of the community of Mount Tamborine. This does not justify a totally baseless attack on Mrs Gill's credit and integrity and that of her companies. The approach taken by Mr Wright, and to a lesser extent by Mr Laidley, contrasts with the approach taken throughout the appeal by Mr Guerin. Given the long history of complaints he has made to Council about the use, most of which fell on deaf ears, until finally Council commenced the enforcement proceedings in 2009, he has more reason than most to feel angry and embittered. Despite this, he conducted himself throughout with decorum and in an attempt to address dispassionately the many controversial issues in the appeal. Unjustified vituperative attacks on Mrs Gill's integrity seriously undermines the credibility of the Co-respondents. It provides ammunition to those who would have submitters excluded from the appeal process and/or subject to adverse cost orders.

[200] In her evidence I found Mrs Gill to be honest and convincing. I accept the submission made by Ms Djohan that the absence of any needs analysis evidence does undermine the weight that the Court should ascribe to her evidence on this issue. I agree with her that in relying upon her evidence it tends more towards reliance upon the abstract understanding of need demonstrated in some of the authorities referred to above.

[201] Mrs Gill says that once the water is bottled in the factory at Staplyton, it is sold to a number of retailers and distributors with whom Wetfix has contracts at a fixed price. The company also has 1,000 home and office customers which are supplied with bottled water. I accept from the evidence of Mr Sutherland that the groundwater extracted from the Gillion production bore is water of an extremely high quality. He describes it as coming from a "sweet spot" which is a layman's way of describing water with great purity. Clearly from Mrs Gill's evidence the purity of the water is an essential factor in the success of the business.

- [202] The business, which included the site, was purchased in August 2004 and then included a prime mover, a tanker and three small delivery trucks. In May 2007 Wetfix built two factories on a block of land at Staplyton, and in that year built a new warehouse to store finished product and raw materials with appropriate access and ingress for customers and suppliers. It has invested many millions of dollars in the enterprise.
- [203] Wetfix now employs 23 people. When Gillion purchased the business in 2004 it employed only 3 people. As I have noted, there is no evidence to suggest that any of these 23 people are residents of Mount Tamborine.
- [204] Paragraphs 26 to 30 of her trial affidavit indicates that Wetfix donates generously to many charities, local fundraising events and volunteer organisations including the Tamborine Mountain Rural Fire Brigade. As Mrs Gill notes, the company also provided bottled water in times of disaster for example, during the 2009 bushfires in Victoria, Cyclone Yasi in 2011 and the Brisbane floods in the same year.
- [205] Her evidence based on her extensive knowledge and understanding of the bottled water business throughout Australia is that there are approximately 57 bottled water producers in Australia, with the dominant producers being Coca Cola Amatil and Asahi Holdings (Australia). She notes that the bottled water market in Australia has been consistently growing by an estimated 5% per annum.
- [206] In her evidence before me, she referred to the collapse of a bottled water producer in Cooroy in 2011. Wetfix have taken over approximately 1,000 customers as a result of the collapse of that business. She described horrific working conditions and she described a business that was at absolute capacity.
- [207] It can be accepted that there is a demand for bottled water. Mrs Gill's evidence demonstrates a demand for groundwater by Wetfix Pty Ltd which in turn equates to a demand for bottled water of a high quality within the community generally.
- [208] One of the difficulties for Gillion in relation to this ground is that to a significant extent Mrs Gill's evidence tends to be more relevant to the private interests of both Gillion and Wetfix Pty Ltd and this is not a ground under the SPA.

[209] In accepting Mrs Gill’s evidence of continuous demand over the years for bottled water from the plant at Staplyton operated by Wetfix as some evidence of need, I am also conscious of the caveats imposed on this Court, whereby no advantage can be given to the applicant as a consequence of an unauthorised use, particularly as discussed in paragraph [31] of Jerrard JA’s judgment in *Leda Holdings* referred to above.

[210] I cannot accept Gillion’s submission that Mrs Gill’s evidence demonstrates a strong and sustained demand for the groundwater beneath the subject land. Because I have rejected Gillion’s argument that the Planning Scheme makes no proper provision for Commercial Extraction of Groundwater, the point made at [276] of its final written submission has very little weight. Mrs Gill did give evidence about the inability of suppliers other than Gillion to meet any shortfall if the proposal is refused. While I accept that evidence, in the absence of any needs analysis evidence, and direct evidence therefore about the ability of other suppliers of bottled water to meet any unsatisfied demand as a result of the use ceasing, it is of little weight. Although on the basis of Mrs Gill’s evidence and the customer list, I accept that there is some evidence of town planning and community need for the proposal, I don’t accept that the need is significant even accepting that there is a need for bottled water in the community generally as demonstrated by the increasing demand.

b) Intersection upgrade

[211] It is in the public interest that the intersection at Geissman Road and Eagle Heights Road be upgraded. There is no doubt, that on the basis of the traffic engineer’s evidence, the intersection needs upgrading now irrespective of Gillion’s proposal. The upgrade will facilitate safer and more convenient turning movements of trucks and large vehicles travelling to this intersection on a regular basis. Mr Laidley makes reference to the tourist facilities at Curtis Falls and the difficulties associated with reverse parking along that section of the road network in connection with this intersection which he describes correctly as “chaos corner”. Mr Litster’s response to that is a complete response. As he noted, all of these parking facilities are within the road reserve of a State controlled road, and the DTMR has overall control of that section of the road network which would include any associated issues of safety which it can address if such issues arise.

c) Absence of unacceptable amenity impacts

[212] The absence of unacceptable amenity impacts has been controversial as a factor to be taken into account in exercising the sufficient grounds “discretion”. This is because it has been argued that a negative cannot be converted into a positive for the purpose of this exercise. However, in *Lockyer Valley Regional Council v Westlink Pty Ltd & Ors* [2012] QCA 370 at paragraph 25 Holmes JA (with whom White JA and Atkinson J agreed) noted that:

“It must be a matter of public interest, for example, that the project under consideration will not destroy local amenity.”

[213] Whether this amounts to an acceptance by the Court of Appeal that the absence of unacceptable amenity impacts can amount to a matter of public interest is moot. For present purposes however I am prepared to regard it as a ground but not a ground that attracts much weight. Gillion has done much to overcome impacts of the use and has accepted conditions that will largely overcome hard impacts.

[214] The grounds are not sufficient in my opinion to overcome what is a significant conflict with the Planning Scheme. I can indicate that if I had accepted Gillion’s argument that the conflict with the Planning Scheme amounted to a technical or mechanical conflict, I would have been persuaded that the grounds, despite my reservations, were sufficient to overcome the conflict and allow the appeal.

[215] The appeal is dismissed.

Appendix 6 – Woolcott judgment



Land and Environment Court New South Wales

▼ Amendment notes

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Medium Neutral Citation:	Woolcott Group Pty Limited v Rostry Pty Limited & Anor [2016] NSWLEC 1113
Hearing dates:	29, 30 October, 2, 3, 5, 6, 9 and 21 November 2015
Date of orders:	08 June 2016
Decision date:	01 April 2016
Jurisdiction:	Class 1
Before:	Dixon C
Decision:	See paragraph at [265]
Catchwords:	APPEAL - designated development – five poultry broiler farms – s 98 objector appeal — biodiversity – contamination by live bird feathers of lucerne crops – conflict between the primary industry of lucerne production and poultry production – contrary to the zone objective-unacceptable environmental impacts; unacceptable increase in the number of truck movements through the town of Manilla especially B double trucks from the farms to the processing plant along designated state road - amenity impacts for the residents residing along the haul road to the processing plant - truck noise and dust
Legislation Cited:	Environmental Planning and Assessment Act 1979 Environmental Planning and Assessment Regulation 2000 Protection of the Environment Operations Act 1997 Land and Environment Court Act 1979 Roads Act 1993 Water Management Act 2000 Stock Food Regulations 2010 Tamworth Local Environmental Plan 2010 Tamworth Regional Council Development Control Plan 2010 New England North-West Strategic Land Use Plan 2012 Namoi Catchment Action Plan Manilla Matters Program – Community Strategic Plan 2006 Road Transport (Mass, Loading and Access) Regulation 1996.
Cases Cited:	CEAL Limited v Minister for Planning & Ors [2007] NSWLEC 302 Telstra Corp Ltd V Hornsby Shire Council [2006] NSWLEC 133 Bencloth Pty Limited v Liverpool City Council [2012] NSWLEC 1284 Hoxton Park Residents Action Group Inc v Liverpool City Council [2001]NSWCA 349 Australian Leisure and Hospitality Group Pty Ltd v Manly Council (No 4) [2009] NSWLEC 226; (2009) 172 LGERA 1 Milne v Minister for Planning [No2] [2007] NSWLEC 66 Goldberg V Waverley Council [2007] NSWLEC 259
Texts Cited:	The Route Assessment Guidelines for Restricted Access Vehicles (2002) New South Wales Route Assessment Guide for Restricted Access Vehicles – Publication No: RMS 12.450 (30 October 2012) NSW Roads and Traffic Authority Practice Note 3 (NSW Roads and Traffic Authority 2008a) Best Practices Management for Meat Chicken Production in NSW – Manual 1 The National Farm Biosecurity Manual for Chicken Growers (ACMF, 2010)

	Best Practice Management for Meat Chicken Production in New South Wales – Manual 2 Operation Manual
Category:	Principal judgment
Parties:	Woolcott Group Pty Limited (Applicant) Rostry Pty Limited (First Respondent) Tamworth Regional Council (Second Respondent)
Representation:	Counsel: Michael Staunton (Applicant) Tom Howard SC with James Smith (First Respondent) Rob Mallik (solicitor) (Second Respondent)
	Solicitors: Jaku Legal (Applicant) Henry Davis York (First Respondent) Mallik Rees Lawyers (Second Respondent)
File Number(s):	10605 of 2014, 10606 of 2014, 10607 of 2014, 10608 of 2014, 10609 of 2014

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The appeals – the parties

- 1 These appeals concern whether development consent should be granted for the establishment and operation of five poultry (broiler) farms and associated activities on a rural property known as Strathfield (Strathfield), located about 11 kilometres north of the rural township of Manilla and approximately 40 kilometres north-west of the regional city of Tamworth in New South Wales (the site).
- 2 They were commenced pursuant to s 98 of the *Environment Planning and Assessment Act 1979* (the EPA Act) by an objector, Woolcott Pty Limited (Woolcott) which is dissatisfied with Tamworth Regional Council's decision on 16 July 2014 to grant approval to the development applications (DA 0273/2014, DA 0274/2014, DA 0275/2014, DA 0276/2014 and D80277/2014) (the DAs) made by the developer, Rostry Pty Limited (Rostry).

The Applicant (objector)

- 3 The objector is the registered proprietor of a rural property called "Yarrenbool Farm" (Yarrenbool), which is located close to the site at 570 Namoi River Road Manilla. Mr Robert Moore, its sole director, lodged a formal objection to the DAs by letter to the Council dated 27 February 2014.
- 4 Mr Moore grows lucerne on Yarrenbool for sale as remnant stock feed. The lucerne paddocks are located adjacent to the Namoi River and within the first 10 kilometres of travel from Strathfield to the processing plant in Tamworth. Given the intensity of the proposed broiler pick-up trips along Namoi River Road, Mr Moore is concerned that feathers from the trucks will contaminate his lucerne paddocks and cause significant economic loss of productive land, future income and sunk investment (Exhibit R15 p8). He contends that the effect of "feather-drop" will cause a distinct conflict between the primary industry of lucerne production and poultry production - contrary to the zone objective. Apart from issues of biosecurity, Woolcott contends that the development will generate several other unacceptable amenity impacts for residents along the haul road as well as unacceptable environmental impacts.
- 5 The objector submits that the Court should refuse the DAs because the site is fundamentally unsuitable for broiler farms of this scale due to the impacts they will cause.

The developer

- 6 The developer, Rostry, is a wholly owned subsidiary of Baiada Poultry Pty Limited (Baiada), which is the largest privately owned producer of poultry meat in Australia. Baiada supplies approximately 35% of the national poultry demand - which equates to around 5 million birds per week. The New South Wales operations (including the Tamworth region) accounts for 33% of Baiada's total production volume. With a capital

- investment in the order of \$150 million, the Tamworth poultry industry presently generates \$107 million of annual economic activity, and directly employs over 750 people. The poultry meat cluster within the Tamworth region is one of the largest economic and employment contributors to the region's economy and social infrastructure (Environmental Impact Statements (EIS) prepared by PSA Consulting lodged with the DAs (Bundle at Tab 9 p122)).
- 7 According to the Australian Bureau of Agricultural and Resource Economics and Science (ABARES) the demand for poultry products in the Australian marketplace is projected to continue to rise. To meet this increasing demand, Baiada contends it needs to increase the number of broiler farms in New South Wales by about 150 with a larger proportion to be sourced in the Tamworth region. It submits that without Baiada's contribution to meeting this demand there is likely to be a significant shortfall of poultry in Australia. In response to that demand, the EIS records that Baiada intends to substantially increase its capital expenditure in the region over the next five years by about \$250 million and complete the Oakburn processing plant and supporting infrastructure (including growing farms, fertile egg production farms and hatchery facilities). The expenditure is expected to generate an additional 600 full time positions within the region.
 - 8 The Strathfield site is described by the developer as one of a small number of properties within the Tamworth region which satisfy the broiler farm site requirements and the crucial locational factors necessary to support a poultry farm operation. As this combination of factors is only present in a handful of areas across New South Wales, this means that the long-term protection and support of the poultry industry in Tamworth is vitally important.
 - 9 Rostry contends on its evidence that the Strathfield site is ideal, and that any potential negative impacts generated by the development can be sufficiently mitigated or managed to a level commensurate with the expected function of an agricultural operation in an existing rural area EIS (Bundle at Tab 9 folio 239-241). In those circumstances it submits that the objector's appeals should be dismissed and that conditional development consent should be granted for each of the five development applications.

The Council

- 10 The Tamworth Regional Council, as the local consent authority, is joined to these proceedings as the Second Respondent.
- 11 The Council has provided the Court with access to all relevant Council files and assisted in the notification of the hearing and the coordination of the local residents' evidence and representation and participation at the hearing in Tamworth and Sydney (Exhibit 2R).
- 12 The Council has also provided a written response to the parties' draft conditions (letter dated 13 November 2015 forwarded at my direction after the close of the hearing - which the parties as expected have elected not to respond too).

Background

- 13 The five adjacent poultry broiler farms which make up the Strathfield site are located on Crow Mountain Road and Namoi River Road about 4.2 kilometres west of the Namoi River. The property has an area in excess of 1,600 hectares and covers 22 property titles. The property identifiers are detailed on Appendix A.
- 14 There are significant variations in the topography over Strathfield. The land generally rises from the flatter section to the east, steepening as it rises to the Nandewar Ranges ridgeline on the western edge of the site. The property is punctuated by an intermittent creek which runs parallel to Byrnes Gap Road and drains the site to the west.
- 15 Baiada purchased the site on 4 July 2014. At the time, the site was used for agricultural activities, including low intensity cropping (pastures) and cattle grazing. The surrounding uses are typically rural and the area is characterised by a range of agricultural activities including livestock grazing and cropping.
- 16 Both Strathfield and Yarrenbool are located within the RUI Primary Production Zone under the *Tamworth Local Environmental Plan 2010* (LEP 2010). The proposed poultry farming operation falls within the definition of "intensive livestock agriculture" under the LEP, and is permissible with consent in the RUI Zone.
- 17 The objectives of the RU1 Primary Production Zone are reproduced below:

Zone RU1 Primary Production

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To permit subdivision only where it is considered by the Council to be necessary to maintain or increase agricultural production.
- To restrict the establishment of inappropriate traffic generating uses along main road frontages.
- To ensure sound management of land which has an extractive or mining industry potential and to ensure that development does not adversely affect the extractive industry.
- To permit development for purposes where it can be demonstrated that suitable land or premises are not available elsewhere.

- 18 They include the objectives to minimise conflict between land uses within the zone and land uses within adjoining zones and to encourage diversity in primary industry enterprises and systems appropriate for the area. The objector believes the development is contrary to these zone objectives. I will deal with this matter at a later time.
- 19 The Manilla township along the haul road route is variously zoned R1 General Residential and RU4 Primary Production Small Lots under the LEP.
- 20 Also relevant in my assessment of these applications under the EPA Act are the relevant provision of the *Tamworth Regional Council Development Control Plan 2010*, the *New England North-West Strategic Land Use Plan 2012* and the *Namoi Catchment Action Plan* and a plan called *Manilla Matters Program – Community Strategic Plan 2006* (the Manilla Matters Plan). (Although, the Court notes the parties' traffic and planning experts raise no particular issue with compliance with the Manilla Matters Plan. The document has no statutory force and, at its highest, is relied upon by the objector as offering some assistance in understanding the public interest and social impact of the proposal as it lists the "goals and objectives of the community in relation to its economic and social future" (Exhibit 19 OWS at [3.85]).
- 21 As noted, each of the DAs is accompanied by an EIS (as required by s 78A (8) (a) of the EPA Act) because the proposed use is designated development within the meaning of s 77A of the EPA Act. It is defined as a "livestock intensive industry" pursuant to clause 21 (4) of Schedule 3 (clause 21(4) (a)) of the *Environmental Planning and Assessment Regulation 2000* (the Regulations).
- 22 The developments are also integrated development under the EPA Act and, as such, separate approvals are required under the *Roads Act 1993* (the Roads Act) for the water supply to cross beneath the Namoi River Road and other works on public roads (Exhibit R41), the *Water Management Act 2000* (the Water Management Act) for any necessary controlled works approval, and the *Protection of the Environment Operation Act 1997* (the POEO Act) for an environmental protection licence.
- 23 At the time of the hearing, the Environment Protection Authority (EPA) had issued its general terms of approval (GTA), and the RMS had provided some comments and recommendations in respect of the applications. Some of the RMS' recommendations are reflected in Rostry's proposed conditions of consent e.g. certain road upgrade works along the haul road (Exhibit R29) .
- 24 As the DAs did not seek consent as integrated development for the approval of roadworks under s 138 of the Roads Act, the Court has no jurisdiction to deal with these matters (Exhibit R 19 Vol 1, Tab 8 folio 70). These matters will need to be the subject of a separate application to the Council - as reflected in the terms of the consents.

The detail for each farm

- 25 As was explained to me by Ms Dickson, Baiada's National Environmental Manager, each DA provides for a poultry broiler farm which will comprise:
- (i) 14 tunnel-ventilated, fully closed, climate-controlled broiler sheds;
 - (ii) A maximum of 42,000 birds per shed giving a maximum bird population of 588,000 birds on each farm;

- (iii) Approximately 5.5 production cycles per year; and
 - (iv) Ancillary supporting infrastructure, including caretaker residences, an office, an ancillary maintenance shed, water pipes, pumps, tanks, water-storage dam and other related infrastructure and access driveways. A number of vegetative buffers are also proposed.
- 26 The 14 tunnel-ventilated sheds will be erected on each farm in two parallel rows of seven. Each shed will be 160 metres long, 18 metres wide and has a height of 4.75 metres. The 14 poultry sheds will be constructed on a concrete slab, and comprise coolroom insulated sandwich panels (two metal faces with a fully insulated core) and non-reflective Colorbond walls and roof, in muted colours that are consistent with surrounding development (EIS in respect of each application: Exhibits 9, R19, Vol 1, 6 and 7).
- 27 Collectively, the 70 sheds will have a capacity to accommodate 2.94 million birds at any one time.
- 28 There are approximately 5.5 growing cycles per annum at 9.45 weeks (66 days) per cycle. Each cycle comprises an eight-week (56 day) growing period followed by a 1.45-week (10-day) cleanout, sanitisation and restock program. Rostry proposes some flexibility in the ownership and management of each of the farms in that they will be allowed to be owned, leased or contracted to Baiada (Vol 2 Tab 24 page 5, item 6 – Exhibit R 19).
- 29 It is proposed that each of the farms will take delivery of broiler chicks, grow them and then likely supply broiler chickens for processing at the existing Out Street processing plant (operated by Rostry's parent company at Out Street Tamworth) until the new Oakburn processing plant located on the Oxley Highway, approximately 11 kilometres north-west of the Tamworth CBD, is operational, at which time the Out street processing plant is to be decommissioned for this use.

Which processing plant or plants will the Strathfield farms utilise?

- 30 The objector believes that the potential for Strathfield to utilise the two processing plants owned by Baiada is a concern and submits that there is no sure way of containing the processing in the way suggested by Rostry. Should both plants be available for processing from the farms, it is submitted that there will be opportunity for the growing of more birds than approved on each farm.
- 31 However, this submission is not supported by any objective evidence and is at odds with the expressed intention of the developer and its application to the Court.
- 32 In short, I have no basis upon which to assume that Rostry will operate the farms other than in accord with its development application and the terms of any consent granted. The fact is that Baiada holds development consent for the new Oakburn processing facility (and rendering plant) and Baiada's executives have instructed Ms Dickson and its traffic expert, Mr Hollyoak that the company intends to operate Strathfield using the one processing plant at Oakburn once fully operational - not both.
- 33 Baiada's Managing Director, Mr Simon Camilleri, has given the same undertaking to the Court in his letter dated 9 November 2015 (Exhibit R42) which states:
- Baiada Poultry Pty Limited (Baiada) confirms by this letter that once the Oakburn processing facility has been constructed and is fully commissioned and operating, then it is Baiada's intention to decommission and shut down the Out Street processing plant as it is commercially unviable to operate both facilities in parallel.
- 34 The Oakburn processing plant will have a maximum processing capacity of one-million birds per week. This equates to 200,000 birds per day for a five-day processing week; or approximately 166,667 birds per six-day processing week; or approximately 143,000 birds for a seven-day processing week. The Oakburn facility, when fully operational, has the capacity to accommodate the processing of all of the birds from the Strathfield farms. Mr Hollyoak's assessment of the applications proceeds on this basis. He articulates this in his statement:

The Farms will supply a single processor (regardless of whether the Farms are sold, leased or licensed) which is owned and operated by Baiada. This underpins the assumption that there will be co-ordination of poultry numbers and scheduling between the 5 Farms, which is organised by Baiada.

(Exhibit R 5 at 2.2.2 -2.3.4).

So there can be doubt I wish to make clear that I have assessed these applications on the basis that the birds grown at Strathfield will be hauled by trucks to one single processing plant - whether it is Out Street or Oakburn –but not both or at some time in the future another processor in the same location. In short, the farms will only ever supply a single processor (regardless of whether the farms are sold, leased or licensed), as it happens the two processors in the area are presently owned and operated by Baiada. A condition reflecting the undertaking of the company to this effect needs to be drafted and imposed on the consents. The condition will state that the farms will utilise one processor only at all times. While I accept the objector's submission that there is no legal obligation to close Outstreet and there is no evidence that the Oakburn capacity will not be increased in the future the relevance of such submissions eludes me.

- 36 The Court is required to assess the application based on the actual evidence not hypotheticals. Rostry seeks consent for the farms to utilise one processing plant located on a particular haul route.
- 37 However, as the Oakburn processing plant is not yet operational I need to consider the impacts of the developments on two bases: Scenario 1 - that the birds from Strathfield will be hauled to the future processing plant on the Oxley Highway (Lot 100 on DP197471) (the Oakburn plant), and the interim Scenario 2 – that the birds from Strathfield will be hauled to the current processing capacity of the existing facility at Out Street Tamworth.
- 38 Relevantly, as I said the central issue is that in the both instances the same haul route from the farms to Tamworth will be utilised to access one processing plant whoever owns it at the time. A condition requiring this aspect of the development applied for is in my view clearly within power.

The terms of operation of the farms

- 39 The five farms are proposed to operate 24 hours a day, seven days a week. The grown bird collection and transportation will typically occur during the hours of 6.30 pm and 6.00 am (Tab 9, folio 130, [4.8] – Exhibit R19). Ms Dickson, the National Environmental Manager for Rostry, gave oral evidence that:
- (a) Truck drivers will leave the depot and arrive at the first farm for the evening at around 6.30 pm (Transcript date 2, page 146, lines 15 to 30);
 - (b) "Bird catchers" working crews are typically dispatched around 5.00 pm to prepare birds for transport; and
 - (c) The birds are received at the processing plant typically between 8.00 am and 9.00 am the following day (Transcript date 2, page 146, lines 35 to 50)
 - (d) The broiler pick-ups will occur on 220 nights of the year. At a loading of 6500 birds per truck across 220 nights, 11-12 trucks per night would transport all of the 16.7 million birds the farms, collectively, are capable of producing over a year.

Council's determination

- 40 Following notification of the DAs from 20 January 2014 to 3 March 2014 and an assessment of the applications, the Council determined the five designated development applications by the grant of consent subject to conditions at the Ordinary Council Meeting on 8 July 2014.
- 41 The same conditions were imposed on each consent, with the exception of Farms 2, 3 and 5 which were subject to Conditions 19, 20 and 19 respectively, which require compliance with the additional conditions imposed by the GTA issued by the EPA on 6 May 2014.
- 42 The EPA GTA for Farms 2, 3 and 5 requires the livestock limits where initially only seven sheds are stocked (each containing 42,000 birds in each shed), subject to approval for further stocking of the remainder after Condition L6.4 of the GTA is satisfied.
- 43 The conditions of consent proposed by Rostry are based on the Council's conditions but adapted to address amendments such as the relocation of the dams and the further evidence. The objector's draft conditions are different again. They rely on several deferred commencement conditions.

The other objectors (local residents)

- 44 There are a large number of local residents who oppose the farms. I have considered their written submissions which were lodged with the Council in response to the notification of the DAs and this appeal hearing (Exhibits 2R1, 2R2 and 2R3). I have also considered the oral evidence of the 16 local people who gave evidence at the hearing in the Tamworth Courthouse and the additional evidence received in Sydney via the telephone from two residents of Barraba Street, Mr Dutton and Mr Tobin.
- 45 Generally, the local residents are concerned about the impacts of the farms on the Namoi River and the local water supply, road safety along the haul road, the amenity impacts of B-double trucks at night, truck noise during the day and night, health issues from dust and feathers and general amenity. To a large extent, their concerns overlap with the contentions raised by the objector and therefore have been dealt with by the expert evidence. As to be expected where there is overlap of issues I have considered the lay evidence of the local residents in light of the extensive expert evidence before the Court.

Expert Evidence

- 46 The Court has received some 22 expert reports in these proceedings, in addition to the material in the DAs and accompanying EIS.
- 47 Where necessary, the parties' experts have engaged in joint conferencing and prepared joint reports and given concurrent oral evidence to the Court.
- 48 Joint reports were received from:
- Mr Cooper (Rostry) and Dr Tonin in relation to acoustics (Exhibit R14)
 - Mr Hollyoak and Mr Ireland (Rostry) and Mr Coady (objector) in relation to traffic, road safety issues and town planning (Exhibit R17)
 - Dr Robertson (Rostry) and Mr Travers (objector) in relation to ecological issues (Exhibit R16).
- 49 Additional joint reports were tendered during the hearing prepared by:
- Mr Welchman (Rostry) and Mr Omerod (objector) in relation to odour and air quality (Exhibit R13)
 - Dr Matthew, Dr Anderson and Mr Sutherland (Rostry) and Dr Martens (objector) in relation to water supply (surface and groundwater), stormwater and soil issues (Exhibit R11)
 - Mr Scott (Rostry) and Dr Arzey (objector) in relation to contamination by bird feathers
 - Mr Hack (Rostry) and Mr Leyson (objector) in relation to economic impacts (Exhibit R15).

The contentions

- 50 Fortunately, the joint conferencing by the parties' experts has reduced the number of contentions. Of the 44 contentions initially raised in the objector's Amended Statement of Facts and Contentions (ASOFC - Exhibit F) a large number have been withdrawn or satisfied by further evidence or dealt with by way of condition.
- 51 Annexure A of the objector's written submissions (OWS) sets out the contentions not pressed and the contentions which may be dealt with by way of condition it needs to be read with the document headed "Contentions no longer pressed by the Applicant" filed at the commencement of the hearing . For the purposes of my consideration, I believe the central issues can be distilled into the following main topics:
- (i) Preliminary matters – adequacy of Council's notification of the haul road, and the alternative site investigation undertaken by Rostry;
 - (ii) Traffic safety issues associated with queuing at the Manilla Bridge;
 - (iii) Acoustic impacts from trucks at night/early morning along the designated B-double haulage road;
 - (iv) Bio- security – the impact of fugitive feathers escaping from trucks transporting live birds and the economic impact and viability of the growing of lucerne crops on Yarrenbool; and separation distances;

- (v) Unacceptable environmental impacts - water, ecology;
- (vi) Public interest – local objectors' concerns, including the economic benefit of the development for the Tamworth region.

(i) Preliminary matters – jurisdiction

- 52 The first matter I need to address is the objector's assertion that there has been no real analysis of alternate sites undertaken in the EIS in accordance with the Director's requirements.

Analysis of alternate sites

- 53 Rostry's Consultant Town Planner, David Ireland, prepared the analysis of the project alternatives contained within the EIS submitted with the DAs (Vol 1, Tab 9 - Exhibit R19) in response to the Director's requirements. His findings are summarised in an assessment table entitled "Table 40: Proposal Alternatives" (Exhibit R19 at folio 339).
- 54 Mr Ireland's analysis starts with an explanation as to why there is a poultry meat cluster within the Tamworth region and then reasons why any new broiler farms need to be located within that same region.
- 55 The report concludes that the poultry meat cluster in the Tamworth region is the result of a number of crucial locational factors which are only present in a handful of areas across New South Wales. They are:
- Access to large quantities of locally grown grain (particularly wheat and canola);
 - Strategic location proximate to key New South Wales markets (Sydney) and south-east Queensland and direct access to the state road;
 - Ideal land types for the construction of suitable shedding for poultry production;
 - The region offers ideal climate in terms of temperature and humidity for poultry;
 - Access to guaranteed and high quality water sources including bore water, dams, rivers and reticulated networks;
 - Suitable site for location of poultry farms away from sensitive receptors and population centres; and
 - Support from existing major investment infrastructure covering all facets of the integrated business.
- 56 Mr Ireland states that the Tamworth region poultry cluster ideally meets all of the above locational requirements because it contains the following entities.
- Poultry hatcheries;
 - Farms for the production of fertile eggs;
 - Farms for growing of birds for the production of meat;
 - Farms for the production of table eggs;
 - Processing plant (abattoir);
 - Waste treatment facilities;
 - Protein recovery plant;
 - Feed mills, grain silos and grain storage areas;
 - Grain farms (contracted and independent);
 - Administrative centres;
 - Direct retail outlets;
 - Dedicated livestock research centres.
- 57 In addition to the locational requirements, Mr Ireland states that the nominated site must also have the requisite physical characteristics to ensure its suitability for the operation. The broiler farm site requirements are also listed in the EIS. They are:
- Be free from environmental (significant flora or fauna or threatened ecological communities) and physical constraints (steep gradient, unsuitable geology, flooding and other natural hazards);
 - Have adequate water supply from riverine extraction, groundwater town water, dams or a combination of sources;

- Suitable road access allowing for the movement of heavy vehicles and staff to and from the site;
- Be located as close as possible to the feed mill (in Tamworth) and within a grain-growing region to minimise transport costs associated with feed haulage;
- Have suitable separation distances to other poultry farms, intensive livestock operations and other land uses which may introduce a bio security risk;
- Located in proximity to a population centre which can provide employees and accommodation to support the operation;
- Have suitable separation distances to surrounding residents to ensure no odour impacts; and
- Be available for purchase at a price which makes the operation financially viable.

58 Mr Ireland is of the opinion that the Strathfield site satisfies **all** of the listed locational criteria and the broiler farm site requirements and that there are no viable alternatives to the proposed development site.

59 After analysis Mr Ireland concludes that no other identified site in the region can accommodate the maximum number of birds that can be produced on Strathfield to a level consistent with the capacity of the land and also meet the selection and locational criteria. Despite actively pursuing additional sites which exhibit these characteristics (because the five Strathfield farms provide only 47% of the necessary broiler capacity needed in the Tamworth region), Mr Ireland reports that Baiada has not been able to locate an alternate site suitable for the scale of development proposed and which has the potential to satisfactorily mitigate or manage any potential adverse impacts. Nor is it feasible to expand existing sites. Mr Ireland is of the opinion that the expansion of existing farms, while providing minor opportunities to accommodate additional broiler capacity, is not a viable alternative to the development of a greenfield site such as the proposed Strathfield farms to accommodate the bulk of the projected growth.

Finding - analysis of alternate sites

60 The fact that Mr Ireland has not been able to nominate an alternative development site does not mean that there has been no proper analysis or search for an alternative site. The evidence is that despite a search there is no other identified site in the region.

61 This is not a case where the objector has put forward an alternative site which has been ignored by Rostry. Rather, this is a case where the evidence is that there is no viable alternative for this development despite a thorough and documented search.

62 Accordingly, I accept Mr Ireland's evidence and I am satisfied that the Director's requirements for alternative site analysis have been met.

Adequacy of notification of the proposal

63 The second matter concerns the assertion that there was a failure on the part of the Council to properly notify the DAs to residents along the entire length of the haul road. I am referring to contention 19(b) of the objector's Amended Statement of Facts and Contentions (ASOFC) and the objector's submission at [3.243–3.254 of (OWS)].

Contention 19(b) states:

The development application (including the EIS) was not publicly notified in accordance with section 79(1) (b) of the Act as residents along the whole of the proposed transport routes were not notified of the proposal.

64 The objector contends that the notification process has been inadequate and that the concerns of these residents are not before the Court and therefore a proper assessment is not able to be carried out.

65 The relevant public notification requirements for a designated development are set out in s 79 of the EPA Act. Subsection (1)(b)(ii) requires the consent authority to give written notice, **if practicable**, of the application to "such other persons as appeared to it to own or occupy land, the use or enjoyment of which, in its opinion, may be detrimentally affected if the designated development is carried out" (at [3.2.45] of its OWS).

66 The objector contends that the traffic generated by the development along the haul road is significant and substantial, with impacts on adjoining landowners ranging from moderate to extreme. It submits that there may be a detrimental effect on the

- enjoyment of those lands; therefore, if the Court accepts that it is “practicable” to notify those landowners then the application cannot be approved until such time as that notification has occurred.
- 67 While conceding that the notification of the property owners adjoining the proposed haulage route between Strathfield and the existing and proposed rendering plants would be extensive, the objector maintains that it is not “impracticable” and should have been carried out by the Council. It submits that the Council need only have sent out a letter to each affected property and invited inspection of DAs’ documents. As this is a “hearing de novo”, the objector contends that it is reasonable that the concerns of persons affected by the proposal should be before the Court and considered in the Court’s assessment of the applications (s 98 of the EPA Act and s 39(3) of the *Land and Environment Court Act 1979* (the Court Act).
- 68 The Council disagrees. It submits that the notification of landowners along the entire 40-kilometre length of the haul road is not “practicable” and, therefore, there is no requirement to carry out such notification under s 79 of the EPA Act. In any event it submits the extensive public notification undertaken is more than compliant with the requirements under the EPA Act.
- 69 In support of this submission, the Council relies on the affidavit evidence of its Senior Development Assessment Manager, Amanda Elizabeth Faulkner, dated 20 November 2015 which sets out a chronology of the public notification of the DAs undertaken by the Council. Relevantly, as Ms Faulkner’s affidavit is not contradicted by any other party, I accept that the information in the affidavit (exhibit R8) is correct and accurately records the public consultation and notification carried out by the Council before and after lodgement of the DAs.
- 70 The exhibit to the affidavit is a large bundle of documents (the bundle) comprising pre-DA communications received by the Council from interested residents prior to the lodgement of the DAs and copies of documents which Ms Faulkner believes were forwarded by the developer’s planner to various residents and property owners on 31 July 2013 inviting public consultation and feedback prior to the lodgement of the development application.
- 71 Included in the bundle are copies of the press releases issued by the Council, and a newspaper article resulting from that press release inviting community members to register their interest and receive notification of the public exhibition period when the application is publically exhibited. There are also copies of articles published in the Manilla Press and the Northern Daily Leader and media releases about the development, including a statement made by Baiada giving advance notice to the residents of Manilla of the proposed development.
- 72 The affidavit records that on 17 January 2014 the Council’s Team Leader Development Assessment, Ms Lucy Walker, arranged to be sent to persons who had registered an interest about the development an e-mail advising of the exhibition period for the application from 20 January 2014 until 3 March 2014. In that e-mail the recipient is also advised how to access the applications online at the Council’s website or invited to attend in person at specified locations in Tamworth and Manilla to inspect the application where Council’s planners would be available to assist with any enquiries about the applications. Ms Walker apparently sent this e-mail to Catherine Clifford from (ABC Radio Tamworth), Kerrin Thomas (ABC Tamworth) and other registered local residents, including Matthew Fletcher who resides along the haul road in Arthur Street and was the community spokesperson for the Namoi River Community Group at the Tamworth Court hearing.
- 73 The affidavit records that each of the sites exhibited a notice of the proposed development, and that the Council sent a letter notifying adjoining landowners to the Strathfield site (except for Mr Fernance) of the lodgement of the original DAs. The Council also notified the DAs in the local newspapers.
- 74 In addition, the Council’s Development Assessment Planner attended the Manilla branch office between 10.00 am and 3.00 pm on 22 January and 5 February to assist with any enquiries about the proposal. The affidavit annexes notes of the meeting and records the names of the residents who attended. Some of those residents addressed the Court at the hearing in Tamworth. Council issued a further media release on 25 February 2014 regarding a further informal session on 28 February 2014. The news release was published in the Manilla Express on 27 February 2014.

- The Namoi River Community Group (Bob Wales) responded with its own media release on 25 February regarding the information session and this was published in the Manilla Express.
- 76 Forty members of the community are recorded as attending the information session on 28 February 2014 held at the Manilla Mechanics Institute between 1.00 and 4.00 pm. Council staff, representatives from Baiada and staff from the New South Wales EPA and New South Wales Department of Primary Industries also attended.
- 77 A further information session was notified and held on 28 April 2014 at the Manilla Town Hall. The Council held a session between 9.00 am and 3.00 pm and another session was held by Baiada, which was a one-to-one consultation. On 8 May the Council forwarded an e-mail to parties who had made submissions, advising them that the Council had received amended information in response to a request from the NSW Office of Water, the EPA and New South Wales Office of the Environment and Heritage. An amended Traffic Impact Assessment, dwelling plans and elevations were received. The e-mail advised that the amended information was available on the Council's website.
- 78 On 12 June 2014 the Council sent a letter to all persons who had made submissions advising that the Council had received GTA from the Office of Water. The GTA were available on the Council's website.
- 79 In addition to the above, the Council also notified this hearing to all those who had earlier made submissions in respect of the DAs, including the residents whose properties front the haul road of Barraba Street Manilla. The correspondence sent to the Barraba Street residents during the hearing included information detailing a breakdown of the trips to and from the farms per cycle, per annum and per day (Exhibit 2 R9).
- 80 Mr Tobin and Mr Dutton of Barraba Street responded to the Council's notification and the invitation to address the hearing. They gave evidence by telephone and said that they were concerned about the safety of children who currently play on their quiet, rural street, the noise - day and night - from the trucks, glare from headlights on the trucks, dust and feathers drifting onto their properties and a general loss of their existing residential amenity.
- 81 Mr Tobin, whose family home is built very close to the corner at 53 Barraba Street, understands road construction. He said that the RAV road and intersection proximate to his property (which is part of the haul route) needs to be widened to ensure safe turning by large trucks irrespective of the development – it is problematic corner. However, it will be made more unsafe by the increased truck traffic anticipated by the development. While he accepts that he may choose to shut bedroom windows fronting the road at night, or opt for the air-conditioning offered by the developer, he believes that this development will cause an unacceptable loss of amenity to his family's existing quiet, rural lifestyle. For example, the noise will impact upon his enjoyment of his barbecue area and other outdoor family activities.
- 82 Mr Dutton told me that the local school bus is operated from his property at 52 Barraba Street. He employs a driver to take the bus from his land along Namoi River Road and surrounding streets to collect the school children from the local area and deliver them to school in Manilla. When school finishes the bus drops them home along the same route. In the past, Mr Dutton drove the bus and, based on that experience, he told me that the roads are narrow in the immediate area of the development and that there are safety concerns associated with large trucks turning and passing on the narrow, rural roads more generally. He also told me that the school bus currently stops at unmarked intervals along the pick-up/drop-off route as there is no designated off-road area. The situation, he said, is presently unsafe, passing of vehicles is difficult and the problems will be exacerbated with more large vehicles using the area. The Court heard, also, evidence from Jennifer Brown, a retired school teacher, who is concerned about the noise impacts on children; learning in the classrooms fronting the haul route, as well as the safety of children of Manilla Central School who regularly cross the haul route to access a split campus. Another local resident, Judith McNamara, raised concerns about directing traffic through Manilla. She was of the opinion that this would result in conflicts between large transport vehicles and the local residents of Manilla and their access to community facilities such as schools, the town's pool, the long day-care centre and the children's playground.

Glare from headlights on the B-doubles and increased noise and dust allergies, asthma were also a concern for some of the residents whose properties front the haul road.

- 84 As the Court travelled along the haul road at the commencement of the hearing with the parties' lawyers and experts I can confidently say that I generally appreciate the location of the objectors' homes and the distances between the haul roads their residences, the cemetery, the school, childcare centre and other businesses. At that time I had opportunity to observe the existing daytime amenity of the area along the haul road and understand the evidence about the existing nighttime amenity. I believe I fully appreciate the matters raised by objectors like Shane and Judy McNamara of 44 Namoi Road who expressed a concern in their written submission and oral evidence about an increase in heavy vehicle traffic on a minor rural road and the impact on the school, daycare centre, entertainment and recreational venues and businesses along the proposed route of the haul road. I have watched the two short videos tendered by Mr Fletcher depicting loaded B-double trucks travelling along the haul road outside his property in Manilla and appreciate his concerns expressed in the Court at Tamworth, both on a personal level and as a representative of the Manilla Community Group. I understand that Mr Fletcher, and some of the other local objectors, are critical of the Council's notification processes and the developer's efforts to communicate with the locals. I have read all of the written submissions and the transcript of the oral evidence received in Court. The resident's concerns are summarised in the objector's written submissions (OWS) at p27.

Finding - Adequacy of notification of the proposal

- 85 Having regard to all of the information before the Court as outlined, I cannot agree with the assertion that there was a failure on the part of the Council to properly notify the DAs to residents along the entire length of the haul road.
- 86 In circumstances where the DAs have had a high media profile (as was evident in the local papers and local television on the day the Court arrived in town) and notified in the manner deposed by Ms Faulkner, it is difficult to imagine how anyone residing along the haul road, or in the region for that matter, did not know that the DAs had been lodged and that Council was inviting submissions from the public and offering assistance in accessing information about the developments. The evidence also suggests that the developer was active in communicating with the Council and locals at the pre-DA stage and after lodgement. While the information about the number of trucks on the haul road and other matters has been refined by the provision of further information through the hearing process the obligation under the Act is to notify the application lodged in accord with s 79(1) (b) (ii).
- 87 In my assessment the Council has complied with this obligation.
- 88 For the reasons stated, I find that it would not have been practicable for the Council to notify every resident along the entire length of the 40-kilometre haul road in the way suggested by the objector. Having reached that conclusion, I am satisfied on the evidence that the Council has adequately notified the development in accordance with s 79 and, in particular, subs (1)(b)(ii) of the EPA Act:

...to such persons as appear to it to own or occupy land, the use or enjoyment of which in its opinion may be detrimentally affected if designated development is carried out.

- 89 Furthermore, any suggestion that the Court does not understand the impacts of the development for the residents/property owners along the entire haul road and is unable to carry out a proper assessment under s 79 of the EPA Act and s 39 of the Court Act is not supported by the evidence.

The haul road

- 90 The application proposes a haul route through Manilla and the villages of Attunga and Hallsville whether the processing of the Strathfield birds takes place at the Out Street or Oakburn plants.
- 91 The haul road will carry the B-double trucks and other rigid vehicles and light vehicles generated by the farms along the following roads:

Strathfield to Manilla

- Crow Mountain Road (within the site) (unsealed)

- Strathfield Road (unsealed)
- Namoi River Road (sealed)
- Arthur Street (north of Barraba Street) (sealed)
- Barraba Street (sealed)
- Manilla Street (Fossickers Way) (sealed)
- Market Street (sealed) and
- Arthur Street (south of Market Street) (sealed)

Manilla to Tamworth (preferred route)

- Manilla Road (south of Manilla)
- Jewry Street Tamworth
- Ebsworth Street
- Plain Street
- Denison Street
- Bridge Street
- Out Street (to the processing plant)
- Gunnedah Road (Oakburn rendering plant)

92 Rostry also proposes alternative routes in the event of emergency where access to the nominated haul route is prevented:

Emergency Route A

- Strathfield Road (unsealed)
- Crow Mountain Road (unsealed)
- Burns Gap Road (unsealed)
- Buena Vista Road (sealed)
- Manilla Street (Fossickers Way) (sealed)

Emergency Route B

- Strathfield Road (unsealed)
- Crow Mountain Road (unsealed)
- Namoi River Road (sealed)
- Arthur Street (sealed)
- Barraba Street (sealed)
- Manilla Street (Fossickers Way) (sealed)

93 Relevantly, the proposed haulage route travels along a gazetted restricted access vehicles (RAV) route - apart from a section of Crow Mountain Road which is presently not dedicated to the RAV route and will necessarily require an application to the RMS for such approval. (It is proposed that this be conditional on any consent in terms similar to Condition 38 originally imposed on Farm 1 (Exhibit R29)).

94 The evidence is that the MR63, on which the Manilla Bridge is situated, has long been a gazetted RAV route, but that the route from MR63 to the farms was gazetted in 2012.

A Restricted access vehicles (RAV) route

95 Restricted access vehicles (which includes B-double trucks) operate according to national regulations which are implemented in New South Wales under the *Road Transport (Mass, Loading and Access) Regulation 1996*. This regulation establishes the regime for the Minister of Roads to specify areas and routes on which RAV can travel. *The Route Assessment Guidelines for Restricted Access Vehicles* (2002) (which was the relevant guideline in force at the time the subject route was gazetted) contains the procedures and assessment criteria for the Minister's delegate to select routes and areas which are suitable for RAV.

Appendix 3 of the guidelines sets out the assessment criteria for proposed B-double routes. At ss A3.2.1 and A3.2.2, the guidelines require an assessment of routes passing through noise-sensitive areas and the consideration of the views of the local community balanced against economic, road safety, traffic management and other technical issues. Additionally, Appendix 3 provides for assessments in relation to dimensional capacity, road safety, traffic management and structural capacity of the proposed route. Section 5.3 of the guidelines states:

The Regional Freight Route Co –coordinator is to con –ordinate the preparation of an impact statement as part of the route assessment. The impact statement is to address safety, technical, economic and environmental issues, along with any community concerns.

- 97 There is no evidence before the Court to suggest that in designating the roads for a B-double truck, the Authority has not complied with the relevant guidelines, although I understand that the assessment of the gazetted RAV route from MR63 to the farms was undertaken on an expectation that there would be "...minimal use by RAVs generally " (Tamworth Regional Council Traffic Committee Report May 2010 - Exhibit 2R8), and after further assessment of the projected number of truck movements along the haul road by the parties' traffic experts (Exhibit R15 Annexure D) it is now clear that this will not be the case.

The maximum number of B-double trucks generated by the development

- 98 Based on assumptions derived from the operational evidence given by Ms Dickson, the traffic experts accept the number of *truck movements* on a busy night of broiler pick-ups from the Strathfield farms to the Oakburn facility is likely to be in the order of 22-24 movements within the acoustic night-time for 220 nights per year. (Exhibit R17 Table B1 at page 6). This equates to a maximum of 11 to 12 trucks. However, Mr Coady questioned the reliability of the operational parameters as stated by Ms Dickson in her oral and written evidence on the basis that there was a potential for overlap of the farm activities (Exhibit R8). And, while Baiada does not accept that this will occur very often (if at all) it agrees that if the cycles were to overlap, there would be necessarily an increase in B double truck movements and a decrease in the number of nights of the year that they occur. That said, Mr Hollyoak told the Court that there could be a possible overlap between periods of the 10 day clean out/ and sanitation/restock period for each farm and the 4 week (2 nights per week in weeks 5-8) broiler collections for each farm in the 5.5 cycles per year although he believed this would be infrequent. Nevertheless, these opportunities were further assessed and the position is outlined in Appendix C to the traffic joint report.
- 99 The reason why the developer says that overlap is unlikely is because Baiada strictly controls co-ordination of the farm activities. As Ms Dickson explained to the Court this is necessary because the farms will be part of the integrated production and transport systems for Baiada's Tamworth operations, no matter what ownership structure for each farm exists at the time. Accordingly, co-ordination of the truck movements across the five farms is in the best interests of the farmers and Baiada to ensure consistent and timely supply of poultry to the processing plant to meet demand. Given the inputs (supply of poultry feed, day old chicks) and the processing activities of the farms are controlled by Baiada, Ms Dickson's evidence is that it is virtually impossible that a farm would be able to operate outside of Baiada's integrated transport system. As such, Baiada submits that all haulage traffic will be directed by Baiada and therefore able to be controlled.
- 100 Accordingly to Ms Dickson the operational factors which influence the number of trucks are: (a) the demands of the market; and (b) the processing capacity of the plant.
- 101 Having regard to those operational factors the traffic experts derived a maximum number of B double trucks based on the operational limitations of the processing plants namely: the maximum number of B double movements on any one night for the Oakburn processing plant would be 48 movements and for the current capacity of the Outstreet processing plant 24 movements assuming no overlap.
- 102 In order to ensure that the B-double truck numbers do not exceed the maximum number the developer has agreed to the imposition of a condition in each of the consents which would restrict the maximum number of B-double broiler pick-up movements during the acoustic nighttime period from 10.00 pm till 7.00 am to a maximum of 48 movements (which equates to a maximum of 24 trucks).

While Mr Coady is of the opinion that a maximum of 24 vehicles along certain parts of the haul road is still too much (Transcript D4, page 349 at [10]) he accepts that the imposition of the condition on the consents will provide some certainty for residents about truck numbers and ensure some degree of improved amenity at night for the residents of the properties along that haul route. Mr Hollyoak agrees – although he believes the truck numbers during the acoustic night time will not reach the maximum provided for in the condition and are more likely to be the 12 B-double trucks as anticipated by Ms Dickson's evidence.

A Transport Management Plan which includes a Heavy Vehicle Operator Code of Conduct

- 104 In addition to the restriction of truck numbers at night along the haul road Mr Hollyoak also supports the formulation and implementation of a Transport Management Plan which includes a Heavy Vehicle Operator Code of Conduct (the Plan) imposing a speed restriction for the length of Barraba Street and a code of conduct for Strathfield truck drivers (including contractors) requiring compliance with the speed limit. He is of the opinion that this would reduce the emission of noise as compared with what would be emitted if the trucks were merely to observe the ordinary road speed limits. He also suggests that the Plan require that the Strathfield truck drivers limit the use of air brakes in urban areas and along the haul road from Strathfield to South of Manilla. A traffic management plan was also recommended by the RMS in their letter to the Council dated 21 February 2014 (annexed to Exhibit N).
- 105 Baiada's draft Condition 16 of Exhibit R29 adopts these recommendations. The condition requires the preparation of the Plan prior to construction with a provision that requires drivers not to exceed 60mk/h along Namoi River Road between the cemetery and Arthur Street, and at or below a speed of 20 kilometres per hour along Barraba Street between Arthur Street and Fossicker's Way. The proposed condition also requires that the Plan include a phone number or email address for members of the public to use to lodge complaints in relation to heavy vehicles; and a complaint register to be maintained of all such complaints made, and actions taken as a result of the complaints, to be provided to the Council quarterly.
- 106 Additionally, Baiada has agreed to restrict B-double truck movements between school hours of 8.00 and 9.30 am and 2.30 and 4.30 pm on school days, and offers acoustic treatment of individual dwellings along the haulage road between Manilla Historical Cemetery on the Namoi River Road and Fossickers Way (MR63) the front façade of which is located within 70 metres of the haulage road; and the installation of air-conditioning units of an appropriate size for any bedroom window.

Mr Tobin's property

- 107 As referred to earlier, Mr Tobin family home is located about 20m from the tight Barraba/Arthur Street intersection of the RAV road, and I accept his residential nighttime amenity is likely to be adversely impacted by the increased B-double traffic generated by the proposed development. And, while Mr Tobin appreciates that the upgrade works proposed to this intersection will address the safety/engineering issues for trucks turning in this section of the RAV road the upgrade works do not address his other amenity concerns at detailed at [81]. He maintains his objection to the development given the close proximity of his family home to the haul road. Based on the evidence before me I accept that his corner property is perhaps the most affected by the development's truck movements.
- 108 Baiada has responded to Mr Tobin's evidence with an offer (on terms) to purchase his land at 53 Barraba Street, Manilla, if desired (condition 1 on separate tender included with Exhibit R29). Although, Baiada maintains that this offer of purchase is not necessary in order for the Court to form that view that the impacts are satisfactorily mitigated by the other proposed conditions of consent it makes the offer just the same.
- 109 In the circumstances, I think the condition is appropriate given the likely impacts of the increase in traffic including B double truck movements day/night on his family's residential amenity in light of its proximity to the intersection. These impacts, in my assessment, are not satisfactorily addressed by the other mitigation measures proposed in the application.

The RMS's involvement

As discussed already the RMS has been consulted in the preparation of the DAs since August 2013, and its comments and recommendations have informed the content of the EIS and the draft conditions of the consent in this appeal.

- 111 For example, as recommended by the RMS, the applications address the current “Guide to Traffic Generating Developments”, and are supported by a road safety audit prepared by Road Net dated 10 June 2014. The audit report has assessed part of Namoi River Road and Buena Vista Road and recommended a number of roadworks to the haul route (and the emergency routes) to improve the safety of the road network, noting that the works are prioritised as low to high (Exhibit 19Vol 4, Tab 30, folio 3187 -3212). The RMS has reviewed the audit report and provided comments to the Council in its letter dated 21 February 2014 (Exhibit N). These matters have been the subject of further discussions between the Council and Baiada’s experts and resulted in the preparation of additional traffic evidence (Exhibit R19).

The parties’ traffic evidence

- 112 The traffic evidence before the Court is extensive. It extends to a peer review by Mr Hollyoak of the RoadNet Safety Audit report and the RMS ‘comments about that report and further traffic surveys and reports from Mr Coady and PSA Consultants.
- 113 Before I deal further with the topic of traffic I need to acknowledge the qualifications and experience of Mr Hollyoak with respect to road design and road safety. In short he is a IPWEA/RTA Level 3 Road Safety Auditor with over 30 years’ experience in major road projects. His experience and qualifications is detailed in his CV which is attached to his statement of evidence (exhibit R5). Relevantly, Mr Coady does not hold the same road safety qualifications or experience. Therefore, I consider Mr Hollyoak is well placed to advise the Court in respect of the road safety issues in this case, and for that reason I have attributed significant weight to his evidence.
- 114 With respect to road safety Mr Hollyoak has identified particular upgrade works which he considers are necessary to the haul road route (including Byrnes Gap Road in order that it is passable by B-doubles in the event of that road being used in an emergency (Exhibit R37)). The identified works however do not incorporate all of the upgrade road works listed in the RoadNet Safety Audit report for the emergency road. This is because Mr Hollyoak is of the opinion that not all of the works are necessary because that route will only be used in an emergency event (possibly once every few years). Notwithstanding this, he does identify two works to improve the emergency route. The first improvement is a recommendation to widen the four boundary fence gate openings on the property by about 300 millimetres, and the second is to fill the “dip” in the roadway about 2.1 kilometres west of the intersection of Byrnes Gap Road to provide a more even grade. Baiada has agreed to carry out these road upgrade works in accordance with its proposed conditions prior to commencement of the operation of any poultry sheds.
- 115 Mr Hollyoak also recommends further guidance be provided at the bends of the haul road to ensure safety. To that end he has suggested the provision of advisory speed signs, chevron alignment markers, road alignment marker posts etc along the haul road. In making these recommendations however Mr Hollyoak has told the Court that these advisory signs are needed, irrespective of the development, and would normally be carried out after appropriate survey by the Council. His evidence is that appropriate guidance on bends is a common problem on rural roads.
- 116 The complete list of the upgrade works recommended by Mr Hollyoak to the haul roads is contained within exhibit R41. They are also identified in Rostry’s draft conditions of consent (exhibit R 29 -condition 15).
- 117 The works include:
- A guardrail culvert to be constructed on the Namoi River Road, 7.35 kilometres north of the Manilla Road/Barraba Street intersection,
 - Another at 10.30 kilometres north of Manilla Street/Barraba Street to improve safety on that turn (Condition 15(iv));
 - The removal of a tree at chainage 4.85 kilometres along the Namoi River Road to improve sight distance (Condition 15(iii));

- Widening at Barraba Street/Arthur Street/Namoi River Road intersection to allow for a legal swept path movement of a RAV and to allow two heavy vehicles to pass each other (Condition 15(i));
- Lighting and signage at Crow Mountain Road/Namoi River Road intersection (Condition 15(v));
- Removal of existing or replacement of cattle grids on all roads within Strathfield(conditions 15 (vi));
- Engineering assessment of the structural capacity and width (for road safety purposes) of the culvert on Crow Mountain Road (100m south of intersection with Byrnes Gap Road)and if deficiencies with the capacity of the culvert are identified it will be replaced(Condition 15(vii));
- The construction of a school bus stopping area and kiss-n-ride drop-off and pick-up zone at the Crow Mountain Road/Namoi River Road intersection aimed at improving the safety of children alighting or waiting for the school bus (Exhibit R29 Condition 15(ii)).

118 Some of the road works require separate applications/approvals from other authorities such as the RMS for the gazettal of a section of Crow Mountain Road as a RAV route, and the Council approval of the roadworks under s138 of the Roads Act. (I note that the RMS will oversee these works through the Works Authorisation Deed (WAD) process). As stated earlier the need for these additional approvals from the council for the road works arises because the DAs lodged did not seek to have roadworks assessed as “integrated development” under s 138 of the Roads Act, and therefore the Court is not in a position to approve these works as part of these proceedings: *Goldberg v Waverley Council* [2007] NSWLEC 259. That said, the requirement for further approvals after the issue of development consent is not novel in circumstances where the Court has had opportunity to understand the nature of the works the subject of the further approvals.

119 Provided the Court is satisfied on the evidence that the proposed haul route (and emergency routes) are capable of being made safe based on the evidence about the identified further works, and can provide appropriate access to the development then there can be no suggestion that the Court has not adequately assessed the application under s 79C. In this case there is extensive written and oral expert evidence about these matters. In short, the experts agree that ultimately the entire haul route will only travel along a gazetted RAV route. This means that the route has been designated as a B-double route and has been considered to be safe and suitable for B-double traffic by the RMS, irrespective of this development. In fact, the only condition that the RMS has placed on the RAV route is that B-doubles do not pass each other on the Manilla Bridge. In the circumstances I must assume that the issues concerning the suitability of the route for B-doubles trucks have been properly assessed under the relevant statutory processes.

120 Over and above that, the proposed RAV haul route has been assessed for the purposes of this development. It has been the subject of a road safety audit by RoadNet (which has been reviewed and commented on by the RMS) and subsequently reported on and peer reviewed by Mr Hollyoak.

121 In carrying out his final assessment for the Court Mr Hollyoak has reconsidered his initial traffic assessment (Exhibit R5), having regard to the final agreed maximum number of B-double truck movements able to be processed, and has taken into account the Tamworth Regional Local Traffic Committee report dated 9 June 2010 (Exhibit 2R6) which is based on an assessment that there would be minimal use of the haul route by RAVs generally.

122 Whilst acknowledging that, from a policy perspective, if a roads authority designates a route as a B-double route it can be expected that the route should be safe for B-double traffic Mr Hollyoak does not stop there in his assessment of the present applications. Rather, he has undertaken a review of the haul roads from the farms to and through the Manilla township with a view to identifying issues of potential road safety, and as a result he has recommended several upgrades to ensure that operationally the roads can properly accommodate the vehicle movements contemplated by the farms. His recommendations in fact endorse a number of the improvements itemised in the RoadNet Safety Audit Report (also recommended by the RMS) which the developer agrees to carry out – but not all of them.

As already noted at [115] Mr Hollyoak does not recommend the works for the emergency route outlined in items 33, 34 and 35 of the RoadNet Safety Audit Report because in his assessment they are not necessary given the likely infrequent use of the emergency routes (Exhibit R37). Although, he does endorse some other works to this emergency route (Exhibit R37).

- 124 The objector is critical of Mr Hollyoak's resistance to some of the proposed emergency works suggested by the RoadNet Safety Audit report. It submits that in making his assessment about the adequacy of the emergency routes he has adopted double standards and abandoned his earlier evidence that "...road safety audits have nothing to do with frequency of use, merely safety matters" (OWS at p52 at [3.260]).
- 125 I do not accept this submission based on my understanding of Mr Hollyoak's evidence which in my assessment is entirely consistent. Firstly, he accepts that the RoadNet safety audit report identifies certain upgrade works for the alternative route to address safety matters. The identification of those matters is not based on use but safety. However, that does not mean that each of the itemised works has the same safety priority for every development. Each itemised work needs to be assessed having regard to the context of the development and prioritised accordingly. This is exactly what Mr Hollyoak has done for the purposes of his evidence. After assessment, based on his extensive experience and particular expertise with road safety, Mr Hollyoak has prioritised the itemised works and concluded that those items (at [123]) are unnecessary for the purposes of this development based on the infrequent use of the road (once every few years).
- 126 I accept his informed assessment and for that reason I am satisfied that the road upgrade works detailed in the conditions recommended by Mr Hollyoak will ensure the safety of the designated haul route and emergency routes for this development. In any event, they are assessed by Mr Hollyoak as minor works (eg localised widening on bends and signage), which will not have any significant environmental impact. While Mr Hollyoak is not an ecologist based on his extensive experience with road construction and safety upgrade works to existing roads I accept that he has some understanding of the impacts of roadworks on the natural environment. Therefore, his opinion about the nature of the works and their potential for environmental impact is of some relevance particularly when it accords with the expert opinion of Dr Roberson - who is an ecologist with extensive experience of the environmental impacts of road upgrade works.
- 127 Based on his inspection of the site and his familiarity with the area of the proposed works Dr Robertson is of the opinion that they will not cause any unacceptable environmental impacts. They are in his assessment minor upgrade road works (see at [117]). Although Dr Robertson told me at the time of his evidence that he has not inspected every culvert along the haul road he has inspected the site and is familiar with the area of the proposed works having travelled the haul route. In the circumstances I am satisfied that Dr Robertson is in a position to give an informed expert opinion to the Court about the environmental impacts of the minor works proposed in this case. In essence Dr Robertson's evidence is that the proposed conditions will ensure appropriate ecological assessment before the work is undertaken. The conditions refer to the need for relevant approvals from the RMS and the Office of Water at a later time but before the works are under taken. According to Dr Robertson this is normal practice. The appropriate ecological assessments will be made at the time of the assessment of the relevant approvals. I accept Dr Robertson's ecological evidence based on his extensive qualifications and experience in supervising and assessing the environmental impacts of both minor and major road upgrade works over many years (I deal further with this issue when I discuss the ecological issues at a later time).

(ii) Traffic safety issues associated with queuing at the Manilla Bridge

- 128 Given that the objector and the residents have raised particular concern about the capacity of the Manilla Bridge to safely accommodate the increase in B-double trucks, it is appropriate to deal with this issue separately. Generally, they fear an accident is likely to occur as truck drivers to and from the development will not appreciate the limitations of the bridge which the locals understand and accommodate each day. They are also concerned about an increase in queuing to cross the bridge at times when a B double truck is passing.

Although the Manilla Bridge does not accord with current design standards, it forms part of the Manilla Road/Fossickers Way State Road route for the crossing of the Namoi River just north of the Manilla town centre. The bridge is part of the proclaimed Tamworth-Warialda Road B-double route. It currently accommodates, on average, 2,224 vehicles per day, including 21 B-double trucks. According to the traffic studies in the daytime, between the hours of 7.00 am and 7.00 pm, bidirectional traffic flows on the bridge are 1,972 VPD including 16 B-doubles (Exhibit N).

- 130 The evidence is that the approach to the bridge is more than half a kilometre long (570 metres) and it has a narrow carriageway some five to six-and-a-half metres wide. The constraint imposed by the narrow carriageway is recognised by the condition imposed by the RMS on the Tamworth-Warialda Road B-double route that there will be “no more than one heavy vehicle at a time on the bridge at Manilla”. I understand that the locals have lived with this constraint on the use of their bridge without major incident for many years however, they have told the Court it is inconvenient and frustrating. At times vehicles (including the school bus) have been caught out half way across the bridge and have been required to back off the bridge to allow a larger vehicle to pass first. Given the constraints of this historic and narrow Manilla Bridge which will not accommodate trucks passing at the same time, the traffic experts have agreed that, to avoid conflict, vehicles will need to queue on either side of the Manilla Bridge to await the passing of a truck (B-double).
- 131 Mr Coady is of the opinion that the increased wait time is likely to exacerbate the current frustration experienced by drivers waiting for another vehicle to cross the bridge. And, if the additional traffic generated by this development (up to five B-double trucks per hour) is realised, then waiting drivers may attempt to cross the bridge in a more anxious and uncalculated way and this will result in more frequent collisions of vehicles. Mr Coady said that he has observed cars waiting some distance from the entry to the bridge and if that practice continues and the queuing starts from that point (which is identified in the photograph taken by Mr Hollyoak in his Statement of Evidence (Exhibit R5)); he is of the opinion that this will increase the potential for conflict.
- 132 Table C7 of the joint report (Exhibit R17) sets out the conflict analysis of the traffic experts. Mr Hollyoak’s evidence is that there is likely to be a 3-4% increase in conflict generated by the proposed increase in B-doubles. This is based on a bridge distance in the order of 400 metres (300 metres being the bridge and 50 metres either side being the lead-up to the bridge) and the proposed increase in B-doubles as anticipated by this development over an hourly timeframe. In Mr Hollyoak’s opinion a 3-4% increase in risk is not a significant increase and from a safety audit perspective does not present an unacceptable risk. In short, it is not a basis for the refusal of this development.
- 133 Even accepting Mr Coady’s evidence that vehicles presently queue some distance from the bridge entry (at a point 570 metres distant), and that this will increase the risk of conflict in the order of 4-5%, Mr Hollyoak is of the opinion that this is a marginal difference. Based on his expertise as a traffic safety expert, Mr Hollyoak is firmly of the view that the traffic generated by the proposal, including B-double trucks will not cause an unacceptable safety risk to motorists using the Manilla Bridge; he believes that the Manilla Bridge is safe for the proposed traffic generated by this development.
- 134 The Court observed the operation of the Manilla Bridge from both approaches on the site inspection and appreciates the queuing of traffic on each approach as required. Mr Hollyoak’s evidence about the suitability of the bridge for the B double trucks generated by this development is based on a conflict analysis of its current use both day and night (Exhibit 5) and a consideration of the agreed number of additional B double trucks from the farms generally at nighttime. The objector submits that given the uncertainty of the traffic generation from the proposal the analysis undertaken by Mr Hollyoak is unhelpful. It relies on Mr Coady’s evidence that, notwithstanding the classification as a State road, the bridge is totally unsuitable to accommodate the additional B double traffic demand generated by the proposal and for that reason the applications should be refused.
- 135 After careful consideration of all of the evidence including that of the residents I accept Mr Hollyoak’s expert opinion on this issue based on his traffic safety qualifications and experience (as outlined earlier). Mr Coady does not have the same qualification in respect of road safety.

With respect to the fears expressed by the residents of the frontage properties, both as pedestrians walking on the public road and damage to their property as a consequence of traffic/truck accidents, Mr Hollyoak says that their fears are unfounded. In his expert assessment there is no valid reason to believe that the proposed maximum of nine vehicle trips per peak hour along an existing B-double route will result in any adverse safety conditions for pedestrians. Nor is there any evidence to support the view that the increase in B-double activity (generally at night-time) will have a significant effect on pedestrian ability to cross roads or road safety generally.

- 137 The evidence is that the development will not generate any increase in truck traffic in the Manilla town centre because the trucks will be required to travel to and from the farms along the designated haul route. While there may be some slight increase in car activity as a result of employees stopping to buy provisions etc, Mr Hollyoak expects this to be a modest increase which will be unlikely to affect the traffic capacity or pedestrian safety within the town (Revised Traffic Impact Assessment dated 17 April 2014, exhibit 19, tab 25 folio 2953).
- 138 Accordingly, I can see no basis on the evidence before me to refuse the applications because of traffic safety issues associated with queuing at the Manilla Bridge generated by the development.

(iii) Coady's evidence in respect of the farm impacts of traffic on residential amenity

- 139 Apart from being a traffic expert Mr Coady is also a town planner. In that capacity Mr Coady has carried out an assessment of the development's traffic impacts on the residential amenity of residences along the haul route. His reasoning is outlined in his Statement of Evidence (Exhibit N) and his conclusions are detailed in the table at page 38.
- 140 In carrying out his assessment, Mr Coady has had regard to the *New South Wales Route Assessment Guide for Restricted Access Vehicles – Publication No: RMS 12.450* (30 October 2012) and he has adapted the risk evaluation process outlined in that document to classify the problem as either LOW, MODERATE, or EXTREME.
- 141 The impacts he has considered are listed as dot-points on page 38 of this report. His analysis involves a consideration of each impact having regard to the land use and the type of development on the land: either residential rural, more dense residential, together with the amount of traffic (particularly B-doubles) travelling on that road, and the proximity of the road to the residences.
- 142 Before I consider his conclusions, I must acknowledge that Mr Coady holds no qualifications in acoustic matters. Therefore, as Mr Howard submits, his evidence about the impacts of the noise of trucks on the residents along the haul route needs to be disregarded in circumstances where there is extensive acoustic expert evidence before the Court (which I will deal with in due course).
- 143 In relation to the other impacts listed in Mr Coady's statement, he concedes that there is some overlap in the criteria and agrees that they are not weighted risks. Upon closer examination of the exercise undertaken by Mr Coady, I must accept the submission of Mr Howard that, without any working documentation to supplement the material in his statement, it is difficult to understand how he has objectively derived a rating for the particular impact which can provide me with any reliable foundation.
- 144 In the ultimate Mr Coady's evidence is that increasing the number of trucks will have unacceptable impacts on the properties along the haul road. Unfortunately, under cross-examination, Mr Coady was not able to tell me which particular residence would be most impacted, nor how or why, and instead referred me back to his table and offered the comment "...that the quieter the road within the rural amenity of the area the more likely the impact".
- 145 Despite the limitations of Mr Coady's planning assessment, I am confident that the Court has sufficient reliable and comprehensive evidence about the proposed truck movements to assess the development's impacts on the residents of the haul road as required by s79C. In the main that evidence is derived from the affidavit of Ms Dickson which provides a carefully calculated and quite precise summary of what type of vehicles will travel to and from the farms, the operational purposes which those vehicle movements serve and the number and total of each of the categories of vehicle movements per farm every 9.5 week production cycle and per all of the farms cumulatively over the production cycle and per annum (Annexure A to exhibit R8, a table entitled Total Traffic Generation Summary). There is nothing conservative about

these figures and in so far as they pertain to broiler transport at night time they are based on the conservative assumption that the trucks will carry 6500 birds. The range of truck loadings is between just under 6000 birds per truck for the largest broilers (50 -60 days old) and up to almost 10,000 birds per truck for the smallest birds (32 -36 days old). For ease of reference I set out (again) Ms Dickson's evidence about the movements of B doubles during the night time period:

- (a) The maximum number of B doubles truck movements that would be feasible on the assumption that Oakburn plant was operative (and that Outstreet does not operate contemporaneously) and that all birds capable of being processed at that plant in a night are all picked up from Strathfield farms (and NONE from any of the other 22 farms currently operating in the district) would be 48 truck movements per night;(exhibit R8 at [36]-[38]);
- (b) In practice Ms Dickson told the Court however, that it is not likely that all birds on any night would be picked up from the Strathfield farms and it is much more likely that there will be far fewer B double truck movements from the Strathfield farms on any given night in which birds are being picked up from any of those farms (exhibit R8 at [39]-[40]).

146 The traffic experts accept those figures and ultimately agreed that on a busy night the broiler pickups from the farms is likely to be in the order of 22 -24 movements or 11 or 12 trucks (exhibit R17 ,p2 at [2.1] plus Table B1 at p6). With that in mind I accept the oral and written evidence of Mr Tobin and Mr Dutton and the other local residents that there will be a demonstrable impact on the existing amenity of some of the residents who reside along the haul road particularly during the acoustic night. Generally, they will experience, depending on their position along the route, a change to their present amenity and at times adverse impacts caused by additional truck noise, glare, dust and traffic. In acknowledging the increase in truck movements I appreciate that the residents currently experience some truck traffic in the day along the RAV route. While Mr Coady did not record any B double trucks during his survey of Barraba Street as Mr Ireland's statement of evidence discloses Mr Hollyoak's evidence does (Exhibit R7 p2). The Table 2,4 of Mr Hollyoak's statement (Exhibit R5) records that the existing average weekday traffic flows at Barraba Street on the day of survey were 86 vehicles per day, including 16 heavy vehicles (including 7 articulated or B doubles) Of these, none were recorded between 10pm and 7am. The existing average weekday traffic flows at Namoi River Road (East of Arthur Street) was 288 vehicles per day including 61 heavy vehicles (including 11 articulated or B doubles trucks of which 4 heavy vehicles were recorded between 10pm and 7am).

147 As already noted the Tamworth Warialda Road (Manilla Road or State Road 63) has been classified under the Roads Act as a Main Road. Consistent with Mr Coady's evidence Mr Ireland states in his report that Main Roads are intended to function as the primary network for the movement of goods and people throughout the state. Relevantly, the proposed haulage route along Tamworth Warialda Road is identified as a RAV route which services vehicles up to 25m B doubles , conditional on no more than one heavy vehicle at a time on the Namoi River bridge.

148 The reasonableness of the objector and the local residents expectations to maintain their existing amenity within the designated urban and rural areas, as the objector submits, needs to be assessed within the context set by the planning scheme. Section 79C(1)(b) of the EPA Act requires the Court consider, where relevant, the provisions of :

- (i) any environmental planning instrument, and
- (ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and
- (iii) any development control plan, and
- (iii) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and
- (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and
- (v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979), that apply to the land to which the development application relates,
- (b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
- (c) the suitability of the site for the development,

- (d) any submissions made in accordance with this Act or the regulations,
- (e) the public interest.

149 With respect to the above, Mr Ireland and Mr Coady agree that the haul route passes through a number of zones under the LEP which at times have competing objectives (Exhibit R19, Vol 9, Tab 91 folios 7079–7089). I appreciate the different zones and the existing nature of the development along the haul route because I travelled the route and observed large rural properties proximate to Strathfield, smaller rural/hobby farms/properties, single residences, businesses, schools, a medical centre, the cemetery and recreation areas. I believe that I have a general understanding of the existing amenity of the area based on my observations and the evidence of the local residents. In particular, I appreciate the fact that the haul route is a designated B-double route which presently has very light B-double traffic along certain areas of that route. In fact, based on Mr Coady's traffic counts, there were no B-doubles counted in the period along Namoi River Road or Barraba Street Manilla in the night period.

150 That said, I accept that an aim of the LEP, as set out in cl 1.2(2) (b), is:

To allow flexibility in the planning framework so as to encourage orderly, economic and equitable development while safeguarding the community's interests and residential amenity."

151 And, as the objector submits, this can be interpreted as encouraging investment and business opportunities where the community's interests and residential amenity is safeguarded. However, safeguarding does not mean "no change" - particularly where the development is permissible and when the evidence is that the impacts can be acceptably managed and/or mitigated. The proposed use in this case will generate both investment and business opportunities for the town and the region. This is clear from the EIS and the evidence generally. This outcome is obviously in the community's interests. The Tamworth Regional Strategy, while having no legislative force, which was prepared to inform the LEP, assists the Court understand the importance of agriculture for Attunga, particularly cattle, sheep and poultry farms (Exhibit 19, Vol 9, Tab 80, folio 6584). Similarly, the Manilla Matters – Community Strategic Plan assists the Court in its weighing up of the public interest and social impact of the proposal. The strategy encourages "Economic development – developing and strengthening local business and developing opportunities for new businesses/industries to provide a sustainable economic base."

152 If approved, it is stated that the development will provide jobs and generate revenue at both a state, regional and local level because the farms are interdependent with other local businesses. These economic benefits are relevant and need to be considered in the Court's overall assessment together with the other impacts on the community and, in particular, the residents situated along the haul road that, I accept, will experience change and a loss of their existing amenity.

153 Putting aside the acoustic impacts along the haul road and Mr Tobin's concerns in respect of his property situated on the corner block of Barraba Street, there is no expert town-planning evidence provided by Mr Coady or anyone else which supports a refusal of these applications on the basis of impacts on residential amenity along the haul road or the character of the Manilla township. As Mr Ireland explains in his evidence, transient truck movements on a gazetted B-double route in a principally rural area (except for Barraba Street which is zoned residential) will not fundamentally change the character of Manilla township or the localities within the townships on which the haul route would be located, particularly as no vehicles, including B-double trucks generated by the development, are required to pass through the historic town.

154 Accepting as I do that the most adversely affected residents on the haul route are those between the Manilla Historical Cemetery, on Namoi River Road and Fossicker's Way, and the properties along Barraba Street, between Namoi River Road and Fossicker's Way, the evidence is that the proposed conditions will acceptably mitigate and/or manage those adverse impacts and that any change to these residents' existing amenity after a weighted assessment of all relevant matters under s 79C is not a basis to refuse the development.

155 Ultimately, each case must turn on its own facts and it is often unhelpful and entirely irrelevant to compare one decision of the Court with another as the objector invites me to do in this case. For example, the Court's particular determination in *CEAL Limited v Minister for Planning & Ors* [2007] NSWLEC 302 that 24 B double trucks was too many in an application for a quarry - in an entirely different local government area - has

no particular relevance to the case at hand about a poultry farms operation (AWS at page 28 at [3.101-3.103]). Although matters of legal principle can be relevant and in fact CEAL offers useful comment in that regard as referred to at [159] below.

156 I accept that the likely impacts of development (s 79C(1)(b)) include impacts on amenity and that these extend to the character of a place and the attributes of a place which a community values as important contributors to its character: *New Century Developments Pty Ltd v Baulkham Hills Shire Council* (2003) 127 LGERA 303 at [53] to [64] per Lloyd J and *Telstra Corp Ltd v Hornsby Shire Council* (2006) 146 LGERA 10 at [190] to [208] per Preston CJ.

157 However, after a consideration of the evidence of the local objectors as expressed orally and in writing in the context of the expert planning evidence, I cannot accept that it is reasonable to assume that a designated B-double route will only ever service one livestock haulage operator (Exhibit 2R6) and that the intensity of the haul road which has been historically low must remain unchanged and, if intensified, that the character of the town of Manilla will change. The character of Manilla, which the local objectors describe in their evidence, is made up of rural and rural/residential and non-residential uses. The proposed development is a permissible rural use on the land. As Mr Ireland states in his evidence the character of Manilla is an aggregate of qualities and is not static. It is comprised of physical space occupied by town which is developed over time and will continue to change and develop in the future.

158 The township is bisected by Tamworth –Warialda Road (State Road 63) which has a historic presence in its location and has continually functioned as an important route for goods, people and services to, from and through Manilla. As Mr Ireland explained to the Court an approval of the development and use of the RAV route does not of itself change the character of the town of Manilla. As Rostry submits, it is the impacts of the development which the residents believe or fear will change the character of Manilla.

159 The impacts of the proposed development on the Manilla residents need to be assessed within the context of the LEP and the other relevant planning controls for the area - which I have considered. The passing of the trucks along public roads to reach the processing plant from the permissible development is a consequence of the permissible use, and any impacts generated by that use outside the site need to be assessed under s 79C. However, impacts outside the site generated by a use are not unusual. The impacts of development can, and often do, cross zone boundaries. Whether the impacts of any development are acceptable or not depends upon balancing all relevant factors contained in s 79C (1) and the particular evidence before the Court: *CEAL* at [60] per Jagot J. The extent of the obligation under s 79C (1) to consider the likely impacts of the development is dictated by the consent authority's view (Court) about the extent of the impacts.

160 The likely impacts, for the local residents, are summarised in the objector's written submission at page 24 at 3.91 and after careful consideration of the likely impacts I am satisfied that the mitigation/management measures proposed in this application, and generally summarised in Rostry's written submission dated 6 November 2015 at [87], satisfactorily address the likely impacts.

(iii) Acoustic impacts from trucks at night/early morning along the designated B-double haulage road

161 A repeated concern expressed by the residents' evidence is truck noise, day and night, along the haul road. The evidence about that issue is set out below.

162 A particular consequence of this development is the impact on the occupants of the houses located on Namoi River Road, west (south/west) of the cemetery, and on Barraba Street, between Arthur Street and Fossicker's Way (also known as Manilla Road), which forms part of a section of Main Road 63 (MR 63) who, the experts agree, will experience up to a maximum of 22 B-double trucks during the acoustic night period between 10.00 pm and 7.00 am for up to 220 nights per annum.

163 Some of these residents are concerned about traffic noise and sleep disturbance at night.

164 According to the objector's submissions, the real dispute between the parties in relation to acoustic impacts at night is:

(a) Whether there is any requirement to assess sleep disturbance events caused by traffic from a proposed development along a haul road; and

(b)

Whether the traffic generation from the proposal will cause sleep disturbance events to residents along the haul road and, if so, whether those impacts are reasonable in the circumstances.

165 Both Dr Tonin and Mr Cooper agree that the New South Wales Environment Protection Authority Road Noise Policy (RNP) applies to the development (Acoustic Joint Report Exhibit R14 at [12]).

166 They also accept that the RNP provides guidance on assessment of traffic-generating noise, including in relation to any potential for sleep disturbance.

167 The document is structured in the following way:

- The scope and application of the RNP is set out in Section 2.1.
- Section 2 sets out the “Assessment Criteria” which are the criteria intended to be satisfied upon assessment.
- Section 3 addresses how noise assessment criteria are to be applied.
- Section 4 deals with mitigation and management of road traffic noise; and
- Section 5 deals with “Other road traffic issues”.

168 The issue of sleep disturbance is considered in the “Other road traffic noise issues” in Section 5 of the RNP, which falls outside the section of the RNP which identifies the noise assessment criteria. Therefore, the noise assessment criteria in the RNP do not include sleep disturbance criteria.

169 That said the primary purpose of the RNP is set out in Part 1.2. The section states “... this document is to provide assessment criteria for road traffic noise based on protecting amenity and wellbeing”.

170 The acoustic experts agree that the noise assessment criteria at Part 2.3 of the RNP applies, and that the proposal meets the criteria in Table 3 which is measured by reference to LA eq (15 hour) (day time) and LA eq (9 hour) (night time) values.

171 Both Dr Tonin and Mr Cooper agree that Table 5 of Dr Tonin’s evidence shows there is compliance with the RNP criteria for that range of B-double truck movement scenarios (Exhibit R14, page 3 at [13]). On that basis, I accept that there is a reasonable degree of protection of the amenity and wellbeing of the occupants of the subject houses which, as noted, is the primary purpose of the RNP.

172 However, Dr Tonin does not believe that the assessment process ends there. He is of the opinion that it is appropriate to assess if the noise levels of the B-doubles during the nighttime period will create sleep disturbance to residents living along the haul route.

173 Initially, Dr Tonin assessed sleep disturbance by reference to the EPA Industrial Noise Policy (INP) but, when challenged about this in cross-examination, he accepted that the INP makes clear in its introductory section that it is not a policy that is appropriate to use for developments that generate road traffic noise. Ultimately, he argued that it was appropriate to rely on the research of Mathias Basner (Basner) (Exhibit M, page 15) and the *NSW Roads and Traffic Authority Practice Note 3 (NSW Roads and Traffic Authority 2008a)* (RTA Practice Note 3) protocol for assessing and reporting maximum noise levels and the potential for sleep disturbance.

174 It is necessary to go outside the RNP because, as it recognises in Part 5.4, the RNP does not provide particular indicators for sleep disturbance. The section states:

Triggers and effects of sleep disturbance from exposure to intermittent noise from road traffic are still being studied and that there is insufficient evidence to set new indicators for potential sleep disturbance due to road noise traffic.

175 However, as Rostry submits, a consideration of sleep disturbance outside of the framework of the Section 2 assessment criteria must be tempered by a recognition of the fact (as is clear from Part 5.4 of the RNP), that the EPA has expressly refrained from setting any criteria for a good reason, namely, the ongoing uncertainty in determining whether, how and in what way a person’s sleep is disturbed by road noise. As stated in *Telstra Corp Ltd V Hornsby Shire Council* [2006] NSWLEC 133 at [98]-[99], per Preston CJ:

It is not appropriate for a Court to set aside or disregard such an authoritative and scientifically credible standard as the Australian Standard RPS3; Nor is it appropriate for a Court to pioneer standards of its own. The creation of new standard is the responsibility of other authorities with special expertise, such as ARPANSA.

176 While these remarks are pertinent, I am not suggesting that the Court should ignore the potential for sleep disturbance in its assessment of this development under s 79C but, rather, in carrying out such an assessment in respect of road noise generated by the

development, a primary focus must be directed to whether the noise assessment criteria in Part 2 of the RNP are likely to be achieved.

- 177 The evidence of both acoustic experts on that issue is that the RNP criteria are complied with by this development.

Applying the RTA Practice note 3 on sleep disturbance

- 178 As noted, the RTA Practice Note 3 identifies a protocol for RTA road projects and provides that intermittent noise from vehicles will produce noise peaks (maximum levels) 15dBA louder than the LA eq (1 hour) and if those maximum sound levels are 65dBA or higher, as measured at the façade of the receptor, then there should be reporting of that in order to rank and prioritise design options and noise mitigation measures (Exhibit 36, page 91-94).
- 179 The 65dBA level is derived from an accepted position that “maximum internal noise levels below 50-55dB(A) are unlikely to awaken people asleep” (Part 5.4 RNP). It is typically accepted that the level of sound within a room with an open window will be 10dBA below the level of sound at the outside of the façade. Therefore, the protocol adopts a sound level of 55dBA within a bedroom as being the level which triggers reporting and consideration of mitigation measures’ strategies because of potential sleep disturbance.
- 180 Despite the terms of the protocol, Dr Tonin has decided to adopt, in this case, a maximum level of 45dBA (based on Basner’s research level) as being the level at which the Court should assume that there is significant potential for sleep disturbance. (Mr Cooper drew the Court’s attention to the fact that, in an earlier case of *Benclutch Pty Limited v Liverpool City Council* [2012] NSWLEC 1284; he took a different approach because he said he was not aware of the Basner research at that time - albeit the facts were different.)
- 181 Dr Tonin’s assessment of the LA maximum noise levels is set out at pages 9-19 of Exhibit R14.
- 182 In summary, if one adopts the protocol of the RTA Practice Note 3, then the movement of trucks past the houses in the lower end of Namoi River Road and in Barraba Street during the nighttime hours of 10.00 pm till 7.00 am may be expected to reach levels of 65dBA at the outside road-facing facades of some of the houses in the lower part of Namoi River Road and in Barraba Street, as is identified in the Acoustic Experts Joint Report (Exhibit R14 , Figures 2 to 7 inclusive at pages 11, 13 and 15-18).
- 183 If no noise mitigation measures were to be introduced, this would then be expected to have the consequence that, assuming open bedroom windows, some of the bedrooms in those houses facing the road would experience peak sound levels at the moment when a B-double truck travels past at or above 55dBA level, being the level at or below which most people will not awaken from their sleep, according to the results of research referred to in Part 5.4 of the RNP.
- 184 In order to achieve the ENMM Practice Note 3 criterion of 65 LA max at 44 Namoi River Road, eastbound trucks would need to travel at approximately 20 kilometres per hour. The existing background level is 37 LA eq.
- 185 At Barraba Street, assuming all trucks were in perfect condition, even trucks travelling at 20 kilometres per hour would exceed the ENMM criterion of 65 LA max and, if Dr Tonin’s criterion of 55 LA max is adopted, it is submitted that, regardless of compliance, there will be significant change to the existing background noise level which he measured at 45 LA eq (9 hour) in Barraba Street.
- 186 Noise levels at 238 Fossicker’s Way and 46 Market Street will be 77 LA max and 76 LA max, respectively, which will also be above the 65 LA max criterion.
- 187 When compared to the 55 LA max (external façade) criterion for sleep disturbance, the exceedances are further again.
- 188 The fact that the levels outlined above were recorded does not mean that the development should not proceed. Mr Cooper and Dr Tonin both agree that it is appropriate to consider whether there are any reasonable mitigation measures that could be implemented to reduce the sleep disturbance criteria. Accepting that the proposal before the Court is distinct from an RMS upgrade which seeks to install infrastructure for public benefit whilst mitigating private impacts, I consider the mitigation measures offered by way of condition (to which I have earlier referred and are detailed in the draft conditions proposed by the developer) appropriate in this case.

- 189 They include the offer to purchase the Tobin property because his property is uniquely affected by the development (given its location - on a corner site and the intersection and with turning trucks).
- 190 The objector and Mr Tobin were critical of the use of artificial ventilation systems in their bedrooms, and the introduction of a speed limit of 20 kilometres in Barraba Street to mitigate the impacts of road noise in the night. They believe that the imposition of these measures represents an unreasonable impost on their existing residential amenity and that driver compliance with the proposed speed restrictions is unrealistic. Despite their views I am told that the RMS regularly recommends ventilation of bedrooms, and the introduction of a transport management plan and/or the adoption of a code of conduct for drivers to regulate behaviour on public roads to mitigate acoustic impacts. Dr Tonin concedes that he has endorsed such measures in the past. Mr Cooper believes that they have some value in mitigating acoustic impacts. The RMS, in fact had earlier recommended a transport management plan and code of driver behaviour as acoustic mitigation measures in its correspondence to the Council in this case.
- 191 In the circumstances I cannot accept, on the evidence including the views of the acoustic experts that the mitigation measures proposed by the conditions are entirely unrealistic or futile as the objector submits. The haul road is an approved route for B-doubles, and the RMS has had regard to the amenity impacts of such vehicles on the residents along the whole route in its assessment process before gazettal of the RAV route MR63 on which the Manilla bridge is situated and more recently from MR63 to the farms. The developer has agreed to the imposition of a condition which limits the number of B-double truck movements to a maximum of 48 movements during the acoustic nighttime despite the evidence of Ms Dickson that 48 movements is very much a maximum and is not likely to be realised. As stated Rostry intends to load 6,500 birds per truck over a period of 220 nights. The truck movements during busy broiler pick-up periods are likely to be significantly lower than 48 movements and are more likely to be in the vicinity of about 22 movements per night – 11-12 trucks. If it was to be 48 truck movements then that would be all birds picked up over 103 nights.
- 192 Having regard to the above I am satisfied that the movement of trucks during the acoustic nighttime when the broilers are picked up from Strathfield will not have an unacceptable acoustic impact upon the residents along the designated B-double haulage route. I also accept, subject to the proposed conditions, that the trucks will be unlikely to cause sleep disturbance to the occupants of the houses in the lower end of Namoi River Road and in Barraba Street based on the evidence as summarised in parties' submissions.

(iv) Biosecurity

- 193 There are two contentions concerning biosecurity, one of which also involves alleged unacceptable economic impact on the objector.
- 194 The first contention is that the feathers from the trucks transporting the broilers will contaminate the three lucerne pivots on the objector's property, Yarrenbool, and this will mean that the lucerne crop grown will be contaminated by "restricted animal material" as defined in cl 3 of the *Stock Food Regulations 2010* (the SF Regulations) and, therefore, be unable to be sold or used by the objector, thereby occasioning economic impact on the objector (contention 9).
- 195 The second biosecurity contention is that there is an insufficient separation distance proposed between the farms (contention 17).

Feathers from the trucks transporting the broilers will contaminate the three lucerne pivots on the objector's property, Yarrenbool

- 196 Feathers from bird carcasses (dead birds) are "restricted animal material" for the purposes of cl 3 of the SF Regulations.
- 197 "Ruminant" is defined under the SF Regulations as "an animal that has a rumen, and includes an animal belonging to any of the following classes of animal, namely, cattle, sheep, goats and deer".
- 198 Section 7 of the SF Regulations provides that the regulations may prescribe the proportion or amount of foreign ingredient permitted in stock feed. Relevantly, cl 11 and Schedule 1, Part 1 to the SF Regulations provides that there is "nil" tolerance for restricted animal material in stock food for ruminants.

Mr Moore now maintains, based on a letter from the DPI (Exhibit S), that the feathers from carcasses of birds are restricted animal matter and that lucerne contaminated by such feathers cannot be fed to ruminant stock. His earlier affidavit (Exhibit O) and oral evidence was different. Mr Moore's initial evidence to the Court was that he had been advised from DPI that **any** feather from a broiler landing on his lucerne precluded him from labelling his lucerne as "not containing restricted animal matter". He now seems to agree with Rostry that feathers from live broilers pose no threat to his lucerne crop sales as ruminant stock feed.

200 The issue, therefore, is now about feathers from dead carcasses landing on his lucerne crops.

201 As noted earlier, Mr Moore's property, Yarrenbool, is located adjacent to Namoi River Road and within the first 10 kilometres of travel from Strathfield to the processing plant. Mr Moore's evidence is that he supplies 80% of the lucerne hay grown on his property, Yarrenbool, for ruminant stock feed.

202 Depending on scheduling, the farms will introduce between 22 and 48 B-double trips to pick up grown birds each night (Table B1, Joint Report of Coady, Hollyoak and Ireland (Exhibit R17)).

203 The Court observed video footage taken by Mr Fletcher showing poultry broiler trucks dropping a few feathers as they transport broilers past his home (oral evidence of Matthew Fletcher on 26 October 2015 and video (Exhibit 2R3)).

204 The report to the Council on the DAs dated 8 July 2014 states that "it is generally accepted that the most significant pollution from feathers is likely to be within with (sic) 10 kilometres of the farm" (Exhibit 19, Vol 5, Tab 36 folio 3372).

205 As Mr Moore bales hay at night, he submits that he has no way of knowing whether the feathers that escape the open trucks are from live birds or dead carcasses. And, given the intensity of the broiler pick-up trips at night along the Namoi River Road, he is of the opinion that it is likely that feathers from dead broilers will contaminate his lucerne paddocks. As a result, he will not be able to discern whether the feathers are from dead or live birds and therefore cannot make the declaration required by s 6A of the SF Regulations and sell his lucerne as ruminant stock feed.

206 The Court received evidence from two biosecurity experts, Dr Arzey and Dr Scott, about the feather-drop issue.

207 Accepting that birds do die in transit between broiler farm and processor, Dr Arzey estimated that the mortality rate of birds in transit is approximately 0-1%. On that basis, the objector submits that this equates to a maximum of 16,170 dead birds per annum in transit past his property.

208 Ms Dickson did not have any record of any statistics about birds dying in transit but conceded a few might. Relevantly, she also has no record of any complaint received by the company about feather-drop by trucks along any haulage routes.

209 While the objector accepts that materials like hay are excluded from the definition of manufactured stockfeed in cl 7 of the SF Regulations, it submits that the SF Regulations do not permit any level of contamination of stock food by restricted animal material (Exhibit R12 page 4). Furthermore, it maintains that the letter from the DPI relied upon by the Council in its assessment of the application failed to take into account the requirements of the SF Regulations.

210 As Rostry has not explained in its evidence how the company might mitigate this problem, the objector contends that it is left facing an economic loss as it is not able to sell that material for ruminant stock feed. Based on the evidence of its economic expert, Mr Leyson, the objector submits the economic impacts of an approval of the farms for Yarrenbool are significant and include loss of productive land, future income and sunk investment. In short, the type of economic loss envisaged in *Alphatex Australia v The Hills Shire Council (No 2)* [2009] NSWLEC 1126; and *Kentucky Fried Chicken v Gantidis* [1979] HCA 20; (1079) 140 CLR 675 at [17].

211 As Strathfield and Yarrenbool are both located in the RU1 Primary production zone, the objector contends that the effect of the feather-drop will cause a distinct conflict between the primary industry of lucerne production and poultry production. This result is at odds with the objectives of the zone, which include "minimise conflict between land uses within the zone and land uses within adjoining zones". The objector submits that

the impacts of the farms' poultry operations on existing lucerne production at Yarrenbool, and then livestock properties owned by John Allen and Lynette McCarthy, must weight in the balance for a refusal of the applications.

212 Rostry submits that this feather issue is devoid of merit. The evidence is that Mr Moore's property has in the past used chicken manure as fertiliser and no evidence has come forward to suggest that this has precluded selling his lucerne as stock feed for ruminants. The Court observed birds' nests in the rafters of his hayshed and, when cross-examined about this, Mr Moore gave evidence that wild birds would be excluded as the wild birds are naturally purified by the sun and did not pose a threat to his selling of lucerne (Transcript 302 line 45 to Transcript 303 line 11).

213 Despite the objector's submissions as summarised above, I must record that Mr Moore's oral evidence in Court was quite unsatisfactory as it did not demonstrate any reasonable belief that feathers coming from the trucks transporting birds from the proposed farms along the Namoi River Road would contaminate the lucerne and prevent him from declaring the lucerne to be free of restricted animal material. In fact, Mr Moore's contradictory evidence to the Court concerning his inquiry of the DPI before the production of Exhibit S - and his denial of any knowledge about the receipt of chicken manure at Yarrenbool for periods between April, May and June 2010 and July and August of 2011 from a supplier which had charged his company and been paid a total of \$30,173 (Exhibit R30) seems somewhat disingenuous. The exchange between Rostry's counsel, Mr Howard, and Mr Moore is recorded in Rostry's written submissions with references to the transcript which I recall vividly and need not repeat in this judgment.

214 Based on the evidence, I find it highly improbable that feathers from dead carcasses of broilers travelling on the haul route will find their way onto the three lucerne pivots on Yarrenbool and result in an economic loss for Mr Moore's company. The DPI has not taken this position. Moreover, Dr Scott, in his statement (Exhibit R6 at page 6,) concludes that:

There is no objective reason why Yarrenbool or 'North Cuerindi' cannot be used for lucerne production for ruminant livestock feed as a result of any potential contamination of bird feathers in the hay/fodder...

Based on studies by Chinivasagam et al (2010) of dispersion of particulate material (dust) from controlled environment tunnel ventilation sheds, which involves forced expulsion of air, and extensive field experience, it is considered highly unlikely that a significant level of feathers will blow into the fields adjoining the transport route as a consequence of the passive displacement of feathers from moving vehicle. These field observations include at operating broiler farms, at broiler farms during cleanout, on transport routes and finally at processing plants.

Section 2.16 of the Best Practice Management for Meat Chicken Production in NSW Manual - 2 outlines best management practice recommendations in regard to Managing Traffic. Those best management practice recommendations are commonly implemented by industry and responsible authorities. It is noted that the focus of those recommendations is on vehicle noise, as amenity issues related to feathers and dust from transport vehicles are uncommon.

The proponent for the Strathfield broiler site (and its parent company, Baiada) currently implements the recommendations contained in the [Manual] throughout its national operations.

215 Having regard to the above, I am satisfied that there is no satisfactory evidence to support the proposition that the proposed use will conflict with adjoining land uses contrary to zone objectives. I prefer Dr Scott's expert evidence on the issue of feathers to that of Dr Arzey's because of his extensive experience with the Australian poultry industry, as outlined in his statement. Accordingly, I find that there is insufficient evidentiary foundation to support a finding that an approval of the applications should be refused on this basis.

Insufficient separation distance proposed between the farms

216 As noted, the second biosecurity contention is that there is an insufficient separation distance proposed between the farms. The issue is particularised in the objector's written submissions at page 33.

217 The first concern is in respect of the separation distances between the farms and neighbouring farms.

218 Part 3 of the *Best Practices Management for Meat Chicken Production in NSW – Manual 1* (the Manual) provide guidance for farm locations. Clause 3.2.5 of the Manual states that the bioseparation distance can be reduced through appropriate farm-siting

and management. The best practice management recommendations in the Manual are to locate new poultry farms at a minimum distance of 1000 metres to other intensive poultry farms and 500 metres when there are extenuating circumstances, such as farms with a common owner or farms supplying the same processor. (In this case it is accepted that the farms may meet the “extenuating circumstances” definition in the Manual.)

- 219 In any event the DAs provide for a separation distance which is generally compliant with the recommendation in the Manual at just under one kilometre. And, if the sheds are moved slightly in response to the additional flooding information required by Dr Martens, the shift in location, if any, will be minimal and is likely to be a raising of the height of the shed.
- 220 The objector's expert, Dr Arzey, is critical of the industry standard separation distance of one kilometre established by the DPI. He believes it is based on economic considerations rather than biosecurity issues. In his assessment the separation distances should be based on the scope of airborne disease when considering the scale of the development, as any outbreak will cause a significant economic impact and also impact on the community during the clean-up period.
- 221 For that reason Dr Arzey believes that the separation distances for the farms in this case should be at least three kilometres (Exhibit L pages 14-16) and, as there is insufficient information about how a mass mortality event will be managed, he is of the opinion that the applications should not be approved.
- 222 Dr Scott, the developer's expert, takes a different position. In his assessment a mass mortality event would be managed in accordance with AUSVETPLAN and the EAD and need not be further addressed by these applications. With respect to separation distances, Dr Scott supports the applications because they follow the relevant guidelines and recommendations in the Manual.
- 223 In short, they adopt best practice for meat poultry production in New South Wales. According to Dr Scott:

...the nature of husbandry of broilers in controlled environment shedding has enabled established broiler complexes in various locations to perform with favourable outcomes provided that available best practice is implemented”

(Exhibit R6 p31)

- 224 Dr Scott accepts that the Baiada Group (which will control the operation) currently operates in New South Wales and nationally in compliance with the best practices in the Manual (Section 3.2.5) which includes reference to *The National Farm Biosecurity Manual for Chicken Growers* (ACMF, 2010) and separation distances. And, as the company has adopted the same industry standard for best practice in the operation of the proposed farms, Dr Scott is of the opinion that the applications are acceptable. Again, because of his particular expertise, I prefer Dr Scott's expert evidence on this issue to that given by Dr Arzey. Accordingly, in my assessment I have no reason to find that the separation distances proposed in the present applications are unacceptable.

Water and soil

- 225 In addition to the extensive material in the EIS and associated documentation (RWS 6 November 2015 page 3 at [3]), Rostry's experts have also responded to the objector's Statement of Facts and Contentions in Reply (SOFACR) (Exhibit F) and Dr Martens' evidence (Exhibit J) by carrying out further assessments in respect of the water and soil impacts of the farms. The further assessments are discussed in the Statements of Evidence prepared by Dr Matthews, Mr Sutherland and Mr Anderson (Exhibit R10).
- 226 As a result of a new daily water balance model (including modelling some 122 years of water usage and balance) (Exhibit R10 Appendix 6) the experts prepared :
- A new stormwater management plan addressing:
 - (a) A new MUSIC water quality model
 - (b) Water quality grab samples
 - (c) Revised sediment and erosion controls measures
 - A new site soil survey comprising:
 - (d) Three-day filed testing and subsurface exploration
 - (e) 73 new Emerson Aggregate laboratory tests

- (f) Extensive soil mapping and assessment
 - (g) Soil sampling at 18 locations with boreholes to 4.2 metres
 - (h) Field soil salinity testing at soil sampling locations
 - New groundwater pump test information (Exhibit R10 Appendix 7):
 - (i) Installation of further monitoring groundwater observation bores
 - (j) Supplementary 48-hour groundwater pump testing
 - (k) Groundwater yield modelling
 - (l) Groundwater quality test data
 - (m) Revised (reduced) groundwater yield estimates
 - Additional flood modelling covering (Exhibit R10 line 410-425):
 - (n) A new Watershed Bounded Network Model (WBNN) flood model
 - (o) Flow calculations for various parts of the site
 - Development improvements including:
 - (p) Relocation and resizing of the five 50-megalitre storages
 - (q) Additional drainage works around each of the farm sites
 - (r) Inclusion of a rainwater harvesting system
 - (s) Rerouting of some existing constructed watercourse as part of historical soil conservation works
 - (t) A range of soil erosion control maintenance works
 - Effluent disposal details for the residences, including area estimates for effluent disposal fields (Exhibit R10 at lines 1585-1620).
- 227 Following the above additional information, the parties' experts prepared a further joint report - Joint Statement of the Water Engineering Experts (Exhibit 11) - in which they agreed that the relevant contentions were resolved subject to the production of a further conceptual plan for surface water infrastructure (Exhibit 11 at [8]). This plan is now before the Court (Exhibit 31).
- 228 The detailed specifications of the surface water infrastructure will also be submitted at the time when the "water supply works approval" is sought from the NSW Office of Water under s 90 of the Water Management Act as identified in the GTA (Exhibit 19 Tab 28) which are included in condition 20 of (Exhibit R29).
- 229 All of the recommended conditions agreed by the water experts in the Joint Water Report have also been incorporated into Rostry's proposed conditions of consent (Exhibit R29 conditions 13, 13A, 13B, 14, 25A, 26, 26A, 28A, 40A, 41A and 53 as summarised in [87] of RWS dated 6 November 2015).
- 230 The evidence is that there is an adequate and reliable supply of water for the development (Transcript 517 line 45, Transcript 518 line 7 and Exhibit R11 page 3 "Agreement point 3") and, if groundwater is required, a groundwater licence has been obtained for 1,000 megalitres, although the evidence is that only 13 megalitres will be required (Transcript 533 line 8).
- 231 Despite his agreement in the Joint Report (Exhibit R11), Dr Martens, during concurrent evidence, raised issue with the sufficiency of the flood model in the EIS (although he did not elevate this concern to a level which suggested he believed that the development should be refused on this basis).
- 232 The developer maintains that the existing flood model is adequate as it identifies the flood extent of the natural watercourse and "maps the worst possible flood footprint", and it is "appropriate for a conceptual assessment" (Exhibit R10 line 403). Despite that, a further WBNN was undertaken and it also concluded that the proposed farms and associated infrastructure is flooding-free (RWS at page 6 at [10]).
- 233 Ultimately, as Mr Sutherland told the Court, the issue raised by Dr Martens about the survey relates to the level of detail necessary. In Mr Sutherland's assessment, the site survey undertaken over approximately 1,900 hectares of the site, and completed to an accuracy level of +/- 150 millimetres, together with Dr Matthews' site assessment of the soil conservation measures, is enough to underpin the developer's position that the farms are sited correctly (Appendix A RWS dated 6 November 2015).
- 234

Despite Mr Sutherland's opinion, the experts agreed, in the Joint Water Report, to complete further 2D modelling prior to the issue of a construction certificate for the purposes of accurately setting the floor levels of the farm sheds in response to the claim by the objector that further flood modelling was required to confirm the capacity of the relocated waterways to convey overland flows.

235 The evidence is that the location of the farm sheds was signed off by Dr Martens in the Joint Water Report as "not appearing to be affected by flooding" (Exhibit R11 at [5.3]). Within the context of the 1,900-hectare site, I accept that the homesteads are located close to the farms and the same conclusion could be drawn for them. In any event, Mr Sutherland's evidence is that any minor change in location required at the construction certificate stage (ie more like raising the height of the building than moving it) can be accommodated as the development footprint only represents 5% of the site (Transcript 545 line 25).

236 After a careful consideration of the parties' submissions, I am satisfied on the evidence of Dr Matthews, Mr Sutherland, Mr Anderson and Dr Martens (as stated in the joint report) that there is sufficient information before the Court to understand the impact of flooding on the development and that the additional 2D modelling and detailed site survey provided for in condition 14 will identify precisely the finished floor level of the farm sheds.

Deferral of essential aspects of the development including: on site detention basins, wastewater and dam size and locations, road upgrade works

237 The objector contends that the application is lacking in detail in respect of several matters. In short, it submits that the applicant is deferring essential detail and thereby precluding a proper assessment under s79C of the EPA Act. I wish to deal with these issues now and collectively although I am conscious that I may be repeating some matters already addressed under another heading for a different purpose.

238 With respect to on site water disposal Dr Martens again changed his agreed position during concurrent evidence. He told the Court that he now requires the location of the on-site water disposal system to be detailed. Dr Martens did not require that level of detail at the time he signed the joint report (Exhibit R11 page 6 "Agreement point 3 and 54").

239 Having regard to this issue, including Mr Sutherland's oral evidence in response to Dr Martens' changed position, I am satisfied that any additional detail that is required about the on-site disposal system is not needed for the purpose of assessing the impacts of the development under s79C, but rather to inform the design and engineering specifications as is appropriate prior to the issue of a construction certificate.

240 Similarly, I do not agree with the objector's submission, based on Mr Travers' evidence, that the deferral of the road upgrades is inappropriate because the Court is unable to undertake a proper assessment of the potential environmental impacts of the road or understand matters affecting the way the development is constructed as is required by s 79C of the EPA Act. In making this submission the objector relies on the reasoning of the Court of Appeal in *Hoxton Park Residents Action Group Inc v Liverpool City Council* [2011] NSWCA 349; 81NSWLR 638 at [49], [54]-[56]. In that case, the Court found that s 79C required that all impacts external to the land on which the development occurred are properly considered, even where there is a parallel assessment process, to ensure that the cumulative impacts (of the two developments in that case) did not escape assessment.

241 The facts of the *Hoxton Park* case are very different to the case at hand. It concerned the development of a new school which required the construction of a bridge across a public reserve and waterway. The bridge, however, was to be constructed on a public reserve and did not require development consent. Therefore, the bridge was not part of the school development application. The Court of Appeal proceedings dealt with two issues. The first was a challenge to the validity of the notice published by the Council, in the absence of which time did not commence to run for commencement of proceedings challenging the validity of the development consent. The second issue was whether the Council's failure to consider the impacts of the construction of the bridge when considering the school development application was an error because

those impacts fell within the phrase “likely impacts of that development” in s 70C(1)(b). The bridge was generated by the development in that case and, therefore, was relevant to the Council’s s 79C assessment.

242 Accepting that the roadworks in the present case are responsive to the development, I am satisfied that the likely impacts of these minor road works have been adequately considered by the evidence of the experts, including the ecologists, for the purposes of s 79C of the EPA Act and, where necessary, are dealt with by the developer’s draft conditions. The applicant does not seek to defer the assessment of works such to preclude the Court from exercising its function under s79C. The fact that the roadworks will also be the subject of separate applications and assessments under the Roads Act is, as the objector submits, irrelevant to the exercise of the Court’s assessment under s 79C in these proceeding at [78] per Preston CJ in *Australian Leisure and Hospitality Group Pty Ltd v Manly Council (No 4)* [2009] NSWLEC 226; (2009) 172 LGERA 1.

243 As my earlier discussion indicates Dr Robertson did not know the exact location of the new road drainage culverts to be constructed on the Namoi River Road, and on the Crow Mountain Road, at the time of giving his evidence. However, he has inspected the site and is familiar with those parts of the site and the haul road/ emergency routes in which these activities are to be carried out. He has recommended an ecological assessment of the works when details are finalised and an overarching EMP is required by the conditions of consent. That said, Dr Robertson is of the expert opinion that the proposed works “...can be designed and constructed without causing significant ecological impact” (Exhibit 16, page 6). Dr Robertson has reached the same conclusion after assessment of the impacts of the construction of the pumping devices and associated infrastructure at the extraction points from the Namoi River. Again, Dr Robertson believes these can be constructed and operated in a way that will not significantly impact the Namoi River ecology which he has inspected and assessed. I accept Dr Robertson’s expert opinion about these matters. He has extensive qualifications and experiences with various road upgrade works, including upgrades proposed in this case which include revised culverts, the erection of road signage, road widening, the filling of dips in roads etc. His company, Cumberland Ecology, has worked on many road projects, including the M2 upgrade. In explaining his experience with these matters, Dr Robertson told the Court:

We have done small roads and various sized culverts. ... So I’m aware of the array of issues that you need to have regard to in ecology when for example you’re replacing a culvert on a road. The sort of things that come up that might be of issue; sometimes you can have threatened bat species living in the culverts. You’ve got to have regard to the vegetation surrounding the area that is to be disturbed in order to have the culvert replaced or upgraded. By and large, and I think almost without exception in all the years that we’ve been working on these sorts of things, there hasn’t been significant impacts as a result of that.

There have been smaller, manageable impacts on the vast majority of situations where we’ve had to be called in to investigate say upgrading a road culvert etc. it’s been really minimal ecological impacts. We have due diligence look at the area that works done there’s no significant impact.

... But what I am saying is based on experience and given that it’s not a new road going through uncleared habitats, existing roads where there’ll be revised culverts or upgraded culverts, I believe that such works can be designed and constructed without causing significant ecological impact using the meaning of the EPA act for “significant”.

244 Having regard to the above, I do not accept the objector’s assertion, based on Mr Travers’ evidence, that the required road upgrades involve a real potential for material environmental impacts. There is no evidence to support such a submission. Rather, when teased out in cross examination Mr Traver’s principle concern relates to timing. Mr Travers said that the replacement of culverts, signage and road widening should only proceed after ecological assessment. I agree. So too does Rostry and that is exactly what the proposed conditions require. They refer to the requisite approvals from the RMS, the council and Office of Water at a later time and before the works are carried out. They include a requirement for the employment of a qualified ecologist to carry out relevant inspections for fauna before the removal of the single tree proposed to be removed to improve sight lines on the haul road after requisite approval (condition 15A exhibit R29). The Court appreciates the competing views of Dr Robertson’s and Dr Travers’ about the likely impacts of the upgrade works and the pump infrastructure and the timing for ecological inspection and in its assessment under s 79C (1) of the EPA Act, and has taken these matters into account and finds that these issues are appropriately handled by the proposed conditions.

245 With respect to Dr Martin's concern about the lack of detail of the location of the water pipes and the size of the pumps within the waterfront land he ultimately agreed that this was a matter for the Office of Water to assess and determine whether the design is substantially the same as what the GTAs envisaged. He was more concerned to understand the location of the pipes and infrastructure outside the area controlled by the Office of Water. – and that is why he required the concept plan (Transcript D6 p516 at [40]). However, after careful consideration of the evidence of Mr Sutherland about this issue I am satisfied that the Court has sufficient information before it in relation to the water supply network to assess the 5 pipes from the river to the farms located alongside the historical water pipe to the site to issue the consents and after the water licences are in place the next stage of the detailed design can be prepared and approved by the Office of Water and any other relevant authority. Importantly, the main issue about the water security for this development (which was the principle concern for the objector) is resolved by the agreement of the experts.

Ecology (contentions 10 and 16)

246 The objector also contends that the proposal will have an unacceptable impact on the highly modified EEC on the site, and will unreasonably contaminate stormwater runoff leaving the site which will impact on downstream waters.

247 To avoid this, Mr Travers' gave evidence that there should be a comprehensive Environmental Management Plan (EMP) finalised before any consent is issued, including in relation to the construction of the water extraction infrastructure, to ensure that there is no unacceptable environmental impact (including on the platypus or the Bell's River turtle). Mr Travers' primary concern about the impact on the Grassy Woodland EECs, however, was largely addressed by Dr Robertson's draft Biodiversity Management Plan (Exhibit H pages 3-6).

248 Separating the issues out, I will deal with stormwater runoff first.

249 It seems that Mr Travers' concern about polluted stormwater runoff from poultry litter was based on a premise that at the end of the 9.5-week cycle the poultry litter would be used or stored on the site and make its way by surface water to the watercourses and then downstream to the Namoi River .

250 This is not the case. As explained by Ms Dickson, the developer intends to remove all of the poultry litter from the site at the end of the 9.5-week cycle in covered trucks (Exhibit R8 at [53]). The poultry sheds will also be constructed on individual level concrete slabs with a block-work bund wall on each side, and 100-millimetre bund outside each shed entrance, to ensure no interaction with external water movement (roof water and stormwater) (condition 13 Exhibit R29). After appreciating these features of the development, Mr Travers agreed with Dr Robertson that the clean out of the sheds and transfer of waste to a proper place was well managed (Exhibit R16 page 2 para 4). On that basis, I am satisfied that there will be no stormwater pollution issue from this source, as initially feared by Mr Travers, entering the waterways on the property and flowing into the Namoi River.

251 The Gilbert & Sutherland Soil and Water Management Plan (Exhibit R32) (which must be complied with as a condition of each consent) includes careful and detailed mitigation measures to prevent nutrient-laden runoff flowing into the waterways. It includes a proposal to install detention and bioretention basins to ensure that any nutrients in runoff will not pollute downstream waterways. The water experts believe that waste from the farms can be managed satisfactorily without significant risk either on site or downstream. Dr Robertson is satisfied with the measures proposed in the joint report. I also accept their expert evidence as detailed and agreed in the joint report, and have confidence that there will be no unacceptable impact on the waterways and river.

Should an EMP be required as precondition to the grant of consent?

252 The experts agree that the poultry farm operation should be governed by an overarching EMP which includes component parts of various environmental plans, the transport management plan, the *Best Practice Management for Meat Chicken Production in New South Wales – Manual 2* and an *Operation Manual*. At this stage, Dr Robertson has prepared a draft Biodiversity Management Plan which will be integrated into the overarching EMP.

253

The developer accepts a condition of consent requiring the preparation of the overarching EMP document prior to the issue of the construction certificate (draft condition 28A of Exhibit R29).

254 The debate then concerned whether the EMP should be finalised before the grant of consent rather than required by a condition. Dr Robertson supports a conditional approval (Exhibit R16, page 5 at [6]) because the EMP needs to be consistent with the final form of the environmental protection licences issued for the scheduled activities. The farms cannot operate until the occupier holds an environment protection licence (POEO Act – s 48) and the Water Management Act approvals to be issued by the NSW Office of Water. In short, it is sensible to finish the EMP after receiving those details as they often go to the management of waste and water and it would be good to incorporate them in the EMP (D6 page 606 at [15]). In Dr Robertson's experience the EMP is frequently a condition of approval.

255 While Mr Travers agrees that the other approvals need to be consistent with the overarching EMP, he believes it should be a two-stage process:

First of all get the EMP right in regard to macro and micro issues subject to the provision of any EMP agreements and of course controlled activity agreement.

(D6 Transcript p606 at [1])

256 Given Dr Robertson's particular qualifications and experience with these matters, I prefer his evidence about the timing of the EMP. At the end of the day, the evidence is that the site is presently extensively cleared and modified. It has had minimum environmental management despite areas of EEC present (such as the White Box Yellow Box, Blakeley's Red Gum Grassy Woodlands and the Derived Native Grasslands) and there is nothing in place to impede polluted farm runoff from flowing directly through to the Namoi River. In the event that the development is approved I am satisfied, on the evidence as outlined above, that there will be active and integrated soil and water management systems in place to prevent polluted runoff and, subject to landscape buffers and fencing, the woodland areas and other EECs will be demonstrably improved.

Conclusion

257 According to Baiada, there is a need for 150 broiler farms to be developed in the Tamworth region to service the growing demand for poultry products in Australia. The necessary integrated infrastructure is available in Tamworth and the locational characteristics provide efficient access to markets and inputs such as grain. This combination of factors is only present in a handful of areas of New South Wales; therefore, the long-term protection of the poultry industry in Tamworth is vitally important. There has been consideration of alternative sites, including alternate haulage routes, in compliance with the Director's requirements. However, the evidence is that the Strathfield site satisfies the locational and broiler farm site requirements.

258 The proposed use is permissible, with consent, on the land and the site is accessible by a designated B-double route. The NSW Office of Water has given GTAs (Exhibit 19) which are incorporated as conditions of consent (proposed condition 20 Exhibit R29) and, subject to the issue of a supply works' approval based on the further conceptual plan for surface water infrastructure in (Exhibit 31), the parties' water experts have essentially agreed that all relevant contentions about water are resolved (Exhibit R11 at [8]).

259 The contention of the objector concerning economic impact and the evidence in support of that contention is as Rostry submits based on the premise that the feathers from the birds in transport would contaminate the Yarrenbool lucerne crops and render the lucerne un-saleable. For the reasons outlined this contention is not made out on the evidence.

260 In the ultimate the objector and the local residents' concerns about the intensity of the operation and its unacceptable impacts, must be weighed up after a consideration of the expert evidence – which is extensive. While the B-double truck movements (particularly along Namoi River Road and Barraba Street at night) are a new impact, the increased noise meets the numerical requirements of the RNP. A number of mitigation measures are proposed as conditions of consent and I am satisfied that they will ameliorate those impacts to an acceptable level. The applications are based on an operational program which is likely to introduce 12 B-double trucks during the acoustic

night over 220 nights per annum. This impact will represent a change for the residents in the properties who occupy this RAV route and the town. However, the mere fact of change does not in this case indicate inappropriateness. In *CEAL* at [69] per Jagot J, the Court referred to the decision of *Milne v Minister for Planning [No2]* [2007] NSWLEC 66 wherein it was observed that the parameters for assessing the propriety or otherwise of change could not be "personal values or idiosyncratic perceptions" which would be the antithesis of environmental planning as contemplated by the EPA Act, specifically:

...the making of development control decisions in a strategic planning context established by publicly available criteria, determined by planning authorities as part of a process in which the public has had extensive opportunities to participate"

(at [26] - [27]).

- 261 The same principles apply where the change in question involves amenity rather than social and economic relations.
- 262 After an assessment of consequences of the development and the concept of amenity as expressed by the local residents about their sense of place, its character and the attributes which they value as important - as required by s 79C(1)(b) - together with the evidence and relevant planning framework and the economic benefits as well, I have decided the available information warrants substantial weight being placed on the development's ability to satisfy an identified need of general importance to the poultry industry in the region and nationally. In forming that view I am satisfied on the evidence that the concerns of the objector and the local residents about odour, road safety, noise, dust, water, ecology, and biosecurity are satisfactorily addressed by the conditions of consent proposed by the developer which are supported by the Council (exhibit R29). In my assessment there is no need for the deferred commencement conditions proposed by the objector because the developer's conditions require deferred matters such as road works (condition 15) etc. to be completed prior to commencement of operation of the farms or where relevant to be completed prior to construction certificate or prior to engineering approval or under other statutory processes.
- 263 With respect to the draft condition which offers, on terms, for Rostry to purchase Mr Tobin's property at 53 Barraba Street, I think it should be included because the evidence demonstrates that there are particular impacts for this corner block as a result of the increase in B-double truck movements which are not satisfactorily mitigated or managed by the terms of the proposed conditions.
- 264 For the reasons stated I am satisfied that the proposed development is acceptable on its merits after assessment under the heads of consideration in s 79C of the EPA Act. Accordingly, the Court orders the Council to prepare the conditions of the consents, based on the developer's proposed conditions (Exhibit R29), and in accord with my reasons for judgment. Those draft conditions should be served on each party within 14 days and if not agreed then I will consider that draft along with any submissions in writing from any party directed to a contested condition. Following my consideration of the conditions of the consents, I propose to hand down final orders approving of the development applications.

265 **Addendum made on 8 June 2016**

In accordance with the terms of paragraph 264 of my judgment of 1 April 2016, on 31 May 2016 the parties provided me with the agreed conditions of consent. I am satisfied that the conditions of consent accord with my findings and accordingly I make orders in chambers as follows:

Matter number: 2016/00155341 (Formerly 2014/10605)

(1) The appeal is upheld.

(2) Consent is granted to Development Application No. DA 0273/2014 (Farm 1) for the construction of a poultry broiler farm containing 14 sheds, with 42,000 birds per shed and a maximum of 588,000 birds and associated infrastructure on Lots 90 and 117 DP

752204, Lots 1 and 2 DP 1078254 and part Lot 1 DP 377811, "Strathfield", Crow Mountain Road, Namoi River in accordance with Annexure 'A'.

(3) The exhibits are returned.

[155341.16 Annexure A \(102 KB, pdf\)](#)

Matter number: 2016/00162299 (Formerly 2014/10606)

(1) The appeal is upheld.

(2) Consent is granted to Development Application No. DA 0276/2014 (Farm 4) for the construction of a poultry broiler farm containing 14 sheds, with 42,000 birds per shed and a maximum of 588,000 birds and associated infrastructure on Part Lots 135, 136, 137, 138 and 148 DP 752201, Lot 121 DP 752201 and Lot 122 DP 664644, "Strathfield", Crow Mountain Road, Namoi River in accordance with Annexure 'A'.

(3) The exhibits are returned.

[162299.16 Annexure A \(103 KB, pdf\)](#)

Matter number: 2016/00155494 (Formerly 2014/10607)

(1) The appeal is upheld.

(2) Consent is granted to Development Application No. DA 0274/2014 (Farm 2) for the construction of a poultry broiler farm containing 14 sheds, with 42,000 birds per shed and a maximum of 588,000 birds and associated infrastructure on Part Lots 68 and 117 DP 752204, part Lots 1 and 2 DP 1078254, part Lot 148 DP 752201, Lot 2 DP 815004, Lot 95 DP 752204 and Lot 129 DP 752201, "Strathfield", Crow Mountain Road, Namoi River in accordance with Annexure 'A'.

(3) The exhibits are returned.

[155494.16 Annexure A \(103 KB, pdf\)](#)

Matter number: 2016/00162284 (Formerly 2014/10608)

(1) The appeal is upheld.

(2) Consent is granted to Development Application No. DA 0275/2014 (Farm 3) for the construction of a poultry broiler farm containing 14 sheds, with 42,000 birds per shed and a maximum of 588,000 birds and associated infrastructure on Lot 2 DP 228907, part Lots 136 and 137 DP 752201, part Lot 68 DP 752204, Lot 138 DP 752201, "Strathfield", Crow Mountain Road, Namoi River in accordance with Annexure 'A'.

(3) The exhibits are returned.

[162284.16 Annexure A \(103 KB, pdf\)](#)

Matter number: 2016/00162100 (Formerly 2014/10609)

(1) The appeal is upheld.

(2) Consent is granted to Development Application No. DA 0277/2014 (Farm 5) for the construction of a poultry broiler farm containing 14 sheds, with 42,000 birds per shed and a maximum of 588,000 birds and associated infrastructure on Lot 1 DP 377811 and Lot 122 DP 664644, "Strathfield", Crow Mountain Road, Namoi River in accordance with Annexure 'A'.

(3) The exhibits are returned.

[162100.16 Annexure A \(101 KB, pdf\)](#)

Susan Dixon

Commissioner of the Court

Appendix A

Farm 1 is described as Lots 90 and 117 DP 752204, Lots 1 and 2 DP 1078254 and part Lot 1 DP 377811. These properties have a total area of 217.9 hectares

Farm 2 is described as Lot Part Lots 68 and 117 DP 752204, part Lots 1 and 2 DP 1078254, part Lot 148 DP 752201, Lot 2 DP 815004, Lot 95 DP 752204 and Lot 129 DP 752201. These properties have a total area of 405 hectares.

Farm 3 is described as Lot 2 DP 228907, part Lot 136 DP 752201, part Lot 68 DP 752204, part Lot 137 DP 752201 and Lot 138 DP 752201. These properties have a total area of 246.9 hectares.

Farm 4 is described as Lots 135, 136, 137, 138 and 148 DP 752201, Lot 121 DP 752201 and Lot 122 DP 664644. These properties have a total area of 648.1 hectares.

Farm 5 is described as Lot 1 DP377811, and Lot 122 DP664644. These properties have a total area of 392.33 hectares.

Amendments

01 April 2016 - Amended 'Date of Decision' on the cover sheet.

04 April 2016 - Amended Internal paragraph references.

10 June 2016 - Addendum - Final Orders

DISCLAIMER - Every effort has been made to comply with suppression orders or statutory provisions prohibiting publication that may apply to this judgment or decision. The onus remains on any person using material in the judgment or decision to ensure that the intended use of that material does not breach any such order or provision. Further enquiries may be directed to the Registry of the Court or Tribunal in which it was generated.

Decision last updated: 10 June 2016

Appendix 7 – Instructing letters to validators



10 December 2021

Mr >>>>>
Principal Civil Engineer
>>>>>>
>>>>>> BILINGA, QLD 4225

Assistance with Indicant Validation

Dear Mr >>>>>,

As part of my research and as foreshadowed in our recent conversation, I am writing to seek your assistance by using an Indicant developed to rank the data used for an expert's evidence. As an overview, this ranking relates to the quantity and quality of the data. In essence, the method is a scored survey tool in the form of a questionnaire. Your participation will be used to validate the Indicant. I would also invite you to identify any shortcomings and suggest improvements as you see fit.

At this link there is a brief concerning a past case in the NSW Land and Environment Court: <https://www.dropbox.com/s/4qejlqnuyq7qtkf/Woolcott%20v%20Rostry.pdf?dl=0>

In the first instance, I would direct you to the Joint Expert Reports (JER) and subsequent Statements of Evidence (SoE).

At this link you will find the Indicant itself:

https://anu.au1.qualtrics.com/jfe/form/SV_6SETq3oNuCGASDc

Having reviewed the brief's reports and supporting data, I would ask you to run the Indicant at least twice¹ assuming you are the nominated expert in Environmental Management, Groundwater, Surface Water and Water Supply for the Appellant² and secondly, in the same subject areas, for the Respondent³.

¹ There is no limit on the number of Indicant runs.

² Please name your final run of the survey as VJAppellant

³ Please name this in the survey as VJRespondent

Whilst your Indicant responses will be recorded automatically, please email any shortcomings and suggestions. I will be available by phone or email should you require any assistance.

I anticipate that the exercise should take between three to five hours. I will personally meet your costs at your normal hourly rate. Please invoice me accordingly. I would very much appreciate your responses by **7 January, 2022**.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Neil Sutherland'.

Neil Sutherland
PhD Scholar

10 December 2021

Mr >>>>
Senior Principal, Contaminated Land Auditor
>>>>
>>>> Newstead, Queensland 4006

Assistance with Indicant Validation

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At this link there is a brief concerning a past case in the Queensland Planning and Environment Court:

<https://www.dropbox.com/s/ljln4t7hom3q3nd/Barns%20and%20Barns%20v.%20Maroochy%20Shire%20Council.pdf?dl=0>

In the first instance, I would direct you to the Joint Expert Reports (JER) and subsequent Statements of Evidence (SoE).

At this link you will find the Indicant itself:

https://anu.au1.qualtrics.com/jfe/form/SV_6SETq3oNuCGASDc

Having reviewed the brief's reports and supporting data, I would ask you to run the Indicant at least twice¹ assuming you are the nominated expert in Agriculture, Land

¹ There is no limit on the number of Indicant runs.

Capability and Water Supply for the Appellant² and secondly, in the same subject areas, for the Respondent³.

Whilst your Indicant responses will be recorded automatically, please email any shortcomings and suggestions. I will be available by phone or email should you require any assistance.

I anticipate that the exercise should take between three to five hours. I will personally meet your costs at your normal hourly rate. Please invoice me accordingly. I would very much appreciate your responses by **7 January, 2022**.

Yours sincerely,



Neil Sutherland
PhD Scholar

² Please name your final run of the survey as VSAppellant

³ Please name this in the survey as VSRespondent

10 December 2021

Mr >>>>
Senior Principal Hydrogeologist
>>>>>>
>>>>>>
Melbourne VIC 3000

Assistance with Indicant Validation

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At this link there is a brief containing various documents concerning a past case in the Queensland Planning and Environment Court:

<https://www.dropbox.com/s/7r37ay7muj7oys8/Gillion%20Pty%20Ltd%20v%20SRRC%20Experts%20Brief.pdf?dl=0>

At this link you will find the Indicant itself:

https://anu.au1.qualtrics.com/jfe/form/SV_6SETq3oNuCGASDc

Having reviewed the brief and supporting data, I would ask you to run the Indicant at least twice¹ assuming you are the nominated expert in Groundwater for the Appellant² and secondly, in the same subject areas, for the Respondent³.

¹ There is no limit on the number of Indicant runs.

² Please name your final run of the survey as VIAppellant

³ Please name this in the survey as VIRespondent

Whilst your Indicant responses will be recorded automatically, please email any shortcomings and suggestions. I will be available by phone or email should you require any assistance.

I anticipate that the exercise should take between three to five hours. I will personally meet your costs at your normal hourly rate. Please invoice me accordingly. I would very much appreciate your responses by **7 January, 2022**.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'Neil M.' followed by a long horizontal stroke.

Neil Sutherland
PhD Scholar



Australian
National
University

Fenner School of
Environment & Society

ANU College of Science

Neil Sutherland
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10 December 2021

Mr >>>>
Principal Hydrogeologist
>>>>>>
Queensland 4227

Assistance with Indicant Validation

Dear Mr >>>>,

As part of my research and as foreshadowed in our recent conversation, I am writing to seek your assistance by using an Indicant developed to rank the data used for an expert's evidence. As an overview, this ranking relates to the quantity and quality of the data. In essence, the method is a scored survey tool in the form of a questionnaire. Your participation will be used to validate the Indicant. I would also invite you to identify any shortcomings and suggest improvements as you see fit.

At these links there are briefs concerning three past cases, two in the Queensland Planning and Environment Court and one in the NSW Land and Environment Court:

<https://www.dropbox.com/s/ljln4t7hom3q3nd/Barns%20and%20Barns%20v.%20Maroochy%20Shire%20Council.pdf?dl=0> – (Nominated expert in Agriculture, Land Capability and Water Supply).

<https://www.dropbox.com/s/7r37ay7muj7oys8/Gillion%20Pty%20Ltd%20v%20SRRC%20Experts%20Brief.pdf?dl=0> - (Nominated expert in groundwater).

<https://www.dropbox.com/s/4qejlqnuyq7qtkf/Woolcott%20v%20Rostry.pdf?dl=0> – (Nominated expert in Environmental Management, Groundwater, Surface Water and Water Supply).

In the first instance, I would direct you to the Joint Expert Reports (JER) and subsequent Statements of Evidence (SoE).

At this link you will find the Indicant itself:

https://anu.au1.qualtrics.com/jfe/form/SV_6SETq3oNuCGASDc

Having reviewed the brief's reports and supporting data, I would ask you to run the Indicant at least twice¹ assuming you are the nominated expert for the Appellant² and secondly, in the defined subject areas, for the Respondent³.

Whilst your Indicant responses will be recorded automatically, please email any shortcomings and suggestions. I will be available by phone or email should you require any assistance.

I anticipate that the exercise should take between three to five hours. I will personally meet your costs at your normal hourly rate. Please invoice me accordingly. I would very much appreciate your responses by **7 January, 2022**.

Yours sincerely,



Neil Sutherland
PhD Scholar

¹ There is no limit on the number of Indicant runs.

² Please name each final run of the survey as VRAppellant1, 2 & 3 (for each case)

³ Please name this in the survey as VRRespondent1, 2 & 3 (for each case)



10 December 2021

Mr >>>>
Undergraduate Student – Agricultural Science
>>>>
>>>>
Queensland 4342

Assistance with Indicant Validation

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³ Please name this in the survey as VDRespondent1, 2 & 3 (for each case)