The View from the Road: An Alternate Route Through Hawai‘i’s History

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February 2011

A thesis submitted for the degree of Doctor of Philosophy of The Australian National University
An Alien Factory: Hawai'i's History

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February 2011

A thesis presented in partial fulfillment of the requirements of the

Doctorate of Philosophy in American History

University of Hawaii at Manoa
I, Dawn Elizabeth Duensing, affirm that this thesis is my own original work, except where otherwise indicated.

Dawn Elizabeth Duensing
Acknowledgments

When I was researching this thesis in Hawai‘i I could hardly wait until the time came to compose my acknowledgments. First, it would mean that I was finally approaching the end of the road. More importantly, I eagerly anticipated thanking all the people who made this work possible. Writing a dissertation is a lonely process, yet it is amazing to recall how many people helped along the way.

This study would not have come to fruition without the generous assistance of numerous individuals and institutions. First, I thank my supervisor, Brij Lal, who was supportive and always encouraging. From the beginning when I approached him about the possibilities of studying at the ANU, Brij enthusiastically endorsed my study. He consistently reminded me that I was capable and wisely advised me to keep writing and stay focused no matter what divergent suggestions I received along the way. Brij insisted that this was my thesis. Advisor Doug Craig, despite his busy schedule, made time to discuss my topic in the context of U.S. history. I thank him for urging me to think outside that little box I had built for my study. Thanks to advisor Paul D’Arcy, who was available at several agonizing times when I did not know what to write next. Paul’s willingness to comment on partial chapters was very helpful.

I am particularly appreciative to the members in the Division of Pacific and Asian History at the College of Asia and the Pacific who supported my candidature. Being awarded a full scholarship for a Ph.D. program is something that most American students can only dream about, and I am grateful to the Australian Government for funding. Thank you to those who provided encouragement and/or advice, especially Keiko Tamura, Robert Cribb, Vicki
Luker, Hank Nelson, Chris Ballard, Peter Jackson, and Tessa Morris-Suzuki. I am especially thankful to Alastair Maclachlan of the Humanities Research Centre for agreeing to read and comment on my thesis. Thank you also to Ewan Maidment, Tom Griffiths, and Jean Kennedy.

ANU’s tremendous administrative support included many patient and cheerful individuals who could brighten the gloomiest days, especially Marion Weeks, who was sorely missed after her retirement, as was Oanh Collins. Indranee Sandaman capably took on Marion’s role, as did Jo Bushby. Dorothy McIntosh had the answer to just about any question. My sincerest thanks to Maxine McArthur, who provided encouragement, editing and formatting advice, and a fresh set of eyes when they were most needed! Michael Wood’s easy-going, efficient nature made the most irritating tasks with computers a bit easier to tolerate. Maxine and Michael were of tremendous assistance during the last few weeks prior to submission, with each of them giving of their personal time to help me.

I would like to acknowledge Cartographic and GIS Services in the College of Asia and the Pacific. Kay Dancey, Jenny Sheehan, and Karina Pelling produced the fine maps that illustrate my thesis. Thank you also to the employees of ANU’s inter-library loan division, especially Andrew Hannaford, who obtained nearly every obscure item that I requested. Thanks to Stephen Meatheringham and Sandie Walters for IT support.

I am most indebted to Tim Davis of the U.S. National Park Service. Tim’s enthusiasm for historic roads and landscapes was contagious and stimulated my interest in these topics during the summers I worked with the Historic American Engineering Record (HAER). He is always willing to share his vast knowledge and provide advice, usually with some humor tossed in at
no extra charge. Other individuals at HAER supported my endeavors over the years, particularly Christopher Marston, but also Eric DeLony, Todd Croteau, and Justine Christianson. The records generated from the HAER projects have been invaluable for my research.

Nine months of fieldwork in Hawai‘i was one of the highlights of my Ph.D. journey. Going home, seeing friends, and working in familiar institutions was a privilege I will long remember. The assistance and genuine interest in my work from Hawai‘i’s librarians, archivists, and historians was phenomenal. No one could have asked for a more gracious and helpful group of people. I spent months in the Hawaiian collection of the University of Hawai‘i-Mānoa library, where the late Karen Peacock welcomed me and reintroduced me to the system and her staff, who always went “above-and-beyond” the call of duty. It is impossible to adequately convey mahalo (thank you), especially to Joan Hori and Dori Minatodani, but also to Stu Dawrs, Hanalei Abbott, and Curator Emeritus Chieko Tachihata. Other library staff and students were also gracious with their assistance. Mahalo to Ross Togashi of the map division, who is always helpful. When UH did not have materials, he found them elsewhere, including from Everett Wingert of the UH Geography Department. Mahalo also to the very helpful Helen Wong-Smith and Jaci Jacobs at the University of Hawai‘i-Hilo library.

The staff at the Hawai‘i State Archives always exceeds expectations. Mahalo to all of you, especially Luella Kurkjian, Dainan Skeem, Gina Vergara-Bautista, and Victoria Nihii. Dainan promptly and patiently helped sort out questions that arose while I was writing the thesis in Australia.

Mahalo also to the accommodating, friendly librarians at the Hawai‘i State Library’s Hawai‘i and Pacific Room in Honolulu, who retrieved rare
volumes from the Hawaiian and James Tice Phillips collections. Working at the Hawaiian Historical Society with the knowledgeable Barbara Dunn and helpful Ipo Santos-Bear is always a pleasure. Thanks also to the staff at the Hawaiian Mission Children’s Society, the Bishop Museum Archives, the Hawai‘i County Department of Public Works, the Lyman Museum, the Kahului and Honolulu offices of the Hawai‘i State Department of Transportation, the Hawai‘i Legislative Reference Bureau, and the Hawai‘i Land Survey Division.

A special mahalo to my good friends Holly McEldowney and Martha Yent of the Hawai‘i State Parks Division, who shared what they knew about Hawai‘i’s historic trails and made the state parks’ library and files available. Holly, an ANU alumnus, also rented her centrally located Honolulu apartment to me at a price any student could afford. Thank you Martha for exploring the trails with me on Sunday mornings!

The staff at the U.S. National Archives and Records Administration efficiently responded to queries via email. Thank you to Randall Fortson, who dispatched several congressional documents that proved valuable for my thesis.

Many thanks to the employees of Sydney’s wonderful Mitchell Library, especially Mark Hildebrand, who not only suggested collections to facilitate my research, but also expedited access to them upon my arrival in Sydney. Thank you to the helpful Sylvia Carr at the National Library of Australia.

At Hawai‘i Volcanoes National Park, I am grateful to Laura Carter-Schuster and Helen Wong-Smith (again!). Mahalo to Elizabeth Gordon of Haleakalā National Park.

Frank Nelson, a most knowledgeable historic bridge rehabilitation engineer, has always enthusiastically supported and encouraged my research into historic roads and bridges. I appreciate Frank’s confidence in me and his
willingness to help me understand the engineering and technology that I study. Others that assisted along the way were David Forbes, Don Hibbard, Carol MacLennan, and Robert Hadlow. The late Bud Schuster graciously shared his memories of working with the state highway department on the Big Island.

Several people deserve special mention. My friend and fellow historian Ann Yoklavich gave up several Sunday afternoons to copy documents that came to my attention during the last few months of writing. Jodi Mattos at the University of Hawai'i-Mānoa Hamilton Library did more than go above-and-beyond the call of duty in helping me find and access materials, both during fieldwork in Hawai'i and after my return to Australia. Spencer Leineweber, FAIA, also a Ph.D. scholar at the ANU, brought me library books and other items from home as she shuttled back and forth between Honolulu and Canberra. Her company whilst in Canberra was much appreciated.

The friendships and support of Barb Herman, Tobias Belz, Glenn Rodden, Rob Hurle, Lani Ma'a Lapilio, Rosemary Kerr, Peter Bailey, Mike Cookson, Marie Digman, Carol Beynon, Martha Staff, the Wallace family, and the Davidsons are greatly appreciated. Mahalo to the Connell family for their friendship and a home while I worked on the Big Island. My sincerest apologies if I have forgotten anyone.

Last, but not least, my heartfelt appreciation to my family. Thank you Dad, Mom, Deb and Dave, Doug, Julia and Faith, and mom-in-law Mary Ellen for your moral support. The greatest thanks are due to my husband Mark, whose interest in historic engineering achievements matches my own. Mahalo for your insightful feedback, your keen eye for proofreading, your computing skills, complete faith in me, and most of all, your infinite patience.
Abstract

This thesis examines the evolution of Hawai‘i’s road system from the 1830s until 1941. It argues that Hawai‘i’s modernization and development was primarily driven by the haole (Caucasian) elite. It explores the politics and processes that facilitated road development, while considering the local and national interests that influenced highway construction in the islands. It explains how determined civic leaders accessed the financial resources, engineering expertise, and technology necessary to build roads. The thesis concludes that Hawai‘i, despite its isolation, was not backward, but instead built highways and bridges that rivaled those on the United States mainland.

This "View from the Road" begins by examining overland transportation in nineteenth-century Hawai‘i, demonstrating how settlers drove road development to modernize the small island nation for their own benefit. They wanted roads to open land and establish industry, namely agriculture and tourism. Chapter two analyzes how the issues of taxation, revenue, and roads helped to more firmly integrate the Territory of Hawaii into the United States after 1900.

The remainder of the thesis presents case studies that focus on different eras that show, in a broadly chronological order, the progression of road administration, issues, and achievements. The first analysis contemplates the Pali Road, originally built as a footpath by Hawaiians. This chapter highlights native involvement with overland transportation, but also demonstrates how settlers realized the track was crucial to O‘ahu’s development and thus initiated a century of improvements.
The second case study examines the Hāna Belt Road as a locally developed scenic highway. This byway's history highlights the evolving reasons for its construction, which began with the desire to expand agriculture and settlement in East Maui, but ended with the concept that scenic roads should be built to promote tourism. The Hāna Belt Road was a substantial civic achievement constructed through an isolated, sparsely populated wilderness using the limited resources of Maui's local government.

The remaining case studies focus on national park roads at Volcano and Haleakalā. These byways were initially constructed by local governments and private entrepreneurs to promote tourism. After these areas were incorporated into Hawaii National Park, local residents remained involved, but national park officials assumed the lead role in developing the road system. National park thoroughfares were designed not only to provide access to attractions, but to protect and showcase the volcanic environment and features. Configured to lie lightly on the land, these roads reflected the National Park Service's early twentieth-century naturalistic landscape ideals.

This thesis illuminates some of the lesser-known aspects of Hawaiʻi's history, while providing insight into broader historical issues. Local and national efforts to build a road system in the islands between 1830 and 1941 opened the door to tourism and established the foundation for Hawaiʻi's future as an integral part of the United States.
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Abbreviations

BOS  Board of Supervisors
BPR  U.S. Bureau of Public Roads
CCC  Civilian Conservation Corps
DPW  Department of Public Works
ECW  Emergency Conservation Work
HAER Historic American Engineering Record
HMCS Hawaiian Mission Children's Society, Honolulu
HNP  Hawaii National Park
House U.S. Congress, House of Representatives
HSA  Hawai'i State Archives, Honolulu
HVO Hawaiian Volcano Observatory, Volcano, Hawai'i
IISNC Inter-Island Steam Navigation Company
LFC  Loan Fund Commission
NARA U.S. National Archives and Records Administration
NBC  National Broadcasting Company
NIRA National Industrial Recovery Act
NPS  U.S. National Park Service
NRA  National Recovery Act
OPR  U.S. Office of Public Roads
OPRI U.S. Office of Public Road Inquiry
ORI  U.S. Office of Road Inquiry
PCA  [Honolulu] Pacific Commercial Advertiser
RHAS Royal Hawaiian Agricultural Society
SPW  Superintendent of Public Works
THD  (Hawaii) Territorial Highway Department
USDA United States Department of Agriculture
Introduction

A country like ours, for the most part mountainous and cut by deep gorges, which in the wet season are filled with impossible torrents, and widely separated districts with sparse population, present at a glance the most prominent difficulties in the way of substantial road building in this Kingdom. In other words, to speak comparatively, we have a hundred dollars' worth of work to be done and, say, ten dollars to do it with. This general condition of things has not materially changed since the first public highway was built in the Kingdom, and consequently from year to year the taxes and appropriations for this purpose have been, so to speak, frittered away in efforts to keep open and render passable the roads already in existence.¹

Minister of the Interior Charles Gulick's observation of road-building challenges in 1886 summarized the infrastructure problems facing Hawai'i until the 1930s. Bad roads produced decades of complaints from the early 1800s, primarily from foreign settlers who wanted to develop the islands. Gulick's "glance" did not mention the other hurdles that impacted road construction and maintenance: extreme isolation, both within the islands and in the Pacific, as well as destructive natural phenomena that included earthquakes, volcanoes and tsunami.

While isolation and "mother nature" sometimes imposed unique hardships on Hawai'i, the conditions noted by Gulick were not necessarily unusual in nineteenth-century communities elsewhere in the world. What makes Hawai'i different and worthy of study is how, as one of the most isolated places on earth, it was able to keep up with road developments elsewhere, even if it did not always have any better success.

This thesis illustrates how Hawai'i, despite its isolation, built roads and bridges that were comparable to those in the United States. It explores the

¹ Charles A. Gulick, Minister of the Interior, Report, 1886, 16, Hawai'i State Archives.
politics and mechanisms that led to road development in Hawai‘i, while considering the local and national interests that came into play and influenced the process. The thesis explains how determined civic leaders accessed the financial resources, engineering expertise, and technology necessary to build roads, demonstrating that “progress” was within reach.

This study contributes to the scholarship in Pacific history by presenting a view at odds with the discipline’s central theme. The cornerstone of Pacific historiography is island peoples, their culture, their agency, and their active role in shaping their historical experience. While Hawaiians played a part in modernization and road development in the islands, outsiders were the primary determinants in this chapter of Hawai‘i’s history. Haole exerted their authority over the small island nation’s infrastructure and used roads for their personal benefit. Native Hawaiians had little voice in these matters, but their situation was no different than that of indigenous peoples in other settler societies, such as New Zealand, Australia, or New Caledonia, where modern public works emerged as a result of colonization. This thesis is, in some respects, about the other side of the coin.

My fascination with Hawai‘i’s history stemmed from living and working as a public historian on Maui for nearly eighteen years. My interest in historic roads was kindled by a summer job with the Historic American Engineering Record (HAER), a division of the U.S. National Park Service. The task was to produce a history of roads in Hawai‘i Volcanoes National Park and Haleakalā National Park. I initially approached this job with trepidation, planning to make

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the best of what I anticipated would be a boring summer reading about
technology and asphalt. After three months living and working in the
extraordinary environs of Hawai‘i Volcanoes National Park, I was hooked on
road history. Subsequent summer employment provided opportunities to study
the Baltimore-Washington Parkway, the Bronx River Parkway (New York), and
Maui’s Hāna Belt Road.

My first reaction to roads as history is probably not surprising. Why study
roads? This infrastructure is an everyday part of our lives that most people take
for granted. Writers have considered Hawai‘i’s other transportation
accomplishments, primarily maritime activities and railroads. The greatest
impacts, however, are on the ground, where local communities directly benefit
from roads, which promote commerce and facilitate day-to-day mobility and
communication. In the Hawaiian Islands, early twentieth-century byways had
another far-reaching benefit as they made scenic attractions easily accessible,
thus paving the way for the expansion of the tourist industry. Roads have
played a somewhat silent, but significant role in our history; they are necessities
that modernize and drive development. In addition, some remain much as they
were originally built and have become remarkable cultural resources.3

This history of Hawai‘i’s roads employs a multi-faceted approach and
attempts to connect public infrastructure with more traditional topics. More than
just technology and construction details, the story of roads reflects the various
threads that weave together Hawai‘i’s social, economic, political, labor, and
leisure history. It highlights both national (Hawaiian monarchy and U.S.)
themes as well as the concerns of local communities. In presenting this “View

3 Throughout this study, a variety of terms are used as synonyms for road: drive,
driveway, byway, thoroughfare, highway, roadway, route, and way. Track, trail, path, and
pathway were suitable terms for roads prior to the automobile age.
from the Road," my "Alternate Route through Hawai‘i’s History" will touch upon
and revisit topics that have already been well documented, while highlighting
some neglected aspects of the scholarship on Hawai‘i.

This study’s first question is why do we travel where we do? How were
road destinations determined? My work demonstrates by means of early travel
accounts that Hawaiians established overland travel patterns prior to western
contact (1778). They developed the concept of “belt” (around-the-island) routes
that set the pattern for Hawai‘i’s modern byways. Perhaps more importantly for
Hawaiians, some of their tracks accessed sacred sites, such as Kīlauea
Volcano and Haleakalā Crater. Hawaiian destinations were subsequently
favored by early travelers in the islands, even if their reasons for the journey
were different. Destinations, of course, were a major factor in road
development.

This thesis examines the evolution of Hawai‘i’s road system from the
mid-nineteenth century (just before the first constitutional government was
organized) until the Second World War, which is generally considered a
watershed in Pacific history. My work explores the goals, debates, finances,
and methods of building roads in the Hawaiian Islands. The history of roads
presents the story of Hawai‘i’s modernization and development. It is abundantly
clear that the earliest reasons for building roads were to bolster success in
agriculture and improve communication; thereafter some byways were
constructed to develop tourism as a new industry. Most roads were multi-
purpose. This thesis will identify who the major players were and emphasize
that the initiative for road projects emanated from "local" (island) residents, who
were primarily haole, though some were Hawaiian. After 1922, road building
became increasingly reliant on the federal government, thus the U.S. National Park Service and U.S. Bureau of Public Roads became important determinants.

One of this study's dominant themes is that despite the frequent and varied difficulties that delayed the success of road projects, island leaders were extremely determined. Roads were built in Hawai'i, but it was usually not easy. The seemingly insurmountable hurdles included extreme isolation, a widely dispersed and sparse population, few financial resources, rugged topography, and destructive natural phenomena. Despite deep-seated isolation in the midst of the Pacific, leaders overcame these challenges, demonstrating that Hawai'i was not backwards, nor a "two-bit" player: its roads and bridges compared admirably with those built on the U.S. mainland long before the advent of federal assistance. Byways were designed and built, in some cases, by talented federal employees in the U.S. National Park Service (NPS) and U.S. Bureau of Public Roads (BPR), but in other situations, by well-trained and highly skilled local engineers and builders.

The Territory of Hawai'i struggled with these road-development obstacles well into the twentieth century. Hawai'i paid substantial taxes to the U.S. government after annexation in 1898, but received few benefits. After decades of pleading with the U.S. government to return more revenue, Hawai'i officials honed their argument and insisted that the territory was an "integral" part of the United States and therefore deserved its share of appropriations. Congress finally granted the Territory of Hawai'i the right to participate in federal aid programs in 1924; thereafter Hawai'i, like the U.S. states, became increasingly dependent on federal expertise and funding. Federal money removed much of the decision-making process from local authorities, but resulted in technically superior projects and a highway system that met the uniform standards built
throughout the U.S. Participating in revenue sharing helped to more fully integrate Hawai‘i into the Union. The most significant portion of this funding was highway aid, which entailed technical and administrative oversight by the federal government.

The history of Hawai‘i’s byways is a new approach in presenting the islands’ history. It contributes to scholarship by revealing some of the more neglected aspects of Hawai‘i’s past. For instance, only a few journal articles have investigated the impact of the Great Depression, a significant twentieth-century event. General histories of Hawai‘i accord the 1930s little or no attention.4 This study’s discussions on National Park Service roads and federal aid helps shed some light on one of the more noteworthy aspects of this forgotten decade in Hawai‘i: federal relief programs in the form of road construction.

Secondly, although the islands’ economy has long depended on tourism, this topic is also relatively neglected, only recently becoming the subject of increased interest.5 A major theme in this thesis is that Hawai‘i’s leaders

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A handful of oral history interviews make some mention on the Great Depression, see the University of Hawai‘i-Mānoa Center for Oral History online project index: http://manoa.hawaii.edu/hawaiiancollection/coh/cohmultisearch.html.

developed roads as commercial infrastructure to facilitate tourism as a new industry to supplement sugar and pineapple.

Last but not least, a great endeavor in Hawai‘i’s twentieth-century economic history that appears to have been almost entirely overlooked was the territory’s drive for federal revenue commensurate with the taxes it paid. Hawai‘i’s struggle for federal aid, which culminated in the Hawaii Bill of Rights in 1923–1924, will be considered in this thesis, but deserves more study.

Some of the themes that emerged in my work present an alternate route for interpreting Hawai‘i’s history. The history of roads often repeats the “same old story.” The most prominent example of this is yet another version of how haole took control of the Hawaiian Islands (and road development) soon after the missionaries arrived in the 1820s. Other well-documented subjects also emerged during my research, notably politics, ethnicity/race, and labor. These issues will not be a major emphasis in this thesis. While labor is obviously vital to road projects, records do not exist that would enable a thorough investigation of the matter. Local politics in the form of patronage and corruption were part of Hawai‘i’s road history, but that is a topic reserved for another study.

Roads then are not only an “alternate route” through history, but a microcosm of Hawai‘i’s past, relating not just the “same old story” of missionaries, labor, immigration, politics, sugar, and the military, but previously neglected topics such as the Great Depression, tourism, and forgotten economic struggles. Researching public infrastructure can help fill the lacunae in Hawai‘i’s history by opening a window into aspects of history that other approaches have overlooked.

There are several goals this thesis cannot or does not achieve. The “View from the Road” demonstrates that byways were built to help develop
Hawai'i's major industries, first agriculture, and then tourism. The success of these roads, however, may be impossible to measure. No historical statistics recorded who road users were. As a result, there seems to be no method to quantify whether Hawai'i's roads achieved the results that planners intended; for instance, how many tourists were enticed to Hawai'i to drive its scenic roads?

Another question that seemed vital to this thesis, but often remained unanswered, is whether road projects met with opposition. Few prewar disagreements were discovered. The first was the scenic carriageway to Punchbowl's summit in 1890, which some residents criticized as a luxury for the rich (chapter four). Pronounced public resistance to potential construction surfaced during the 1930s when residents and various government agencies disagreed over what to do about the increasingly obsolete Pali Road (chapter three). There seems to be no other evidence of public objections to road projects prior to World War II.

Pacific historians may wonder whether native Hawaiians opposed road development projects, especially those located in the indigenes' sacred areas that were incorporated into the national parks. Only one example of Hawaiian resistance to a road project was located in the English-language archive, a 1939 protest against the National Park Service's plan to extend a road to Kalapana (chapter five).

This study's bibliography demonstrates that a variety of sources were consulted. Researching Hawai'i's history can, at times, be daunting as there are sometimes few records. In some cases, such as the Pali Road and Hāna Belt Road, newspapers were a vital source of information as there were few government documents about these byways. Although the Hawai'i State Archives has a large volume of public works documents, many concerned the
mundane and were of little use. Few consequential records, such as road surveys, labor files, and construction reports, were part of the archive. The Hawai‘i State Department of Transportation has not deposited its vast collection with the state archives.

County documentation on early road development is almost non-existent, which is significant since counties assumed the responsibility for roads after 1905. While the various county departments were helpful, their files were extremely limited. As a result, alternate sources, primarily in the form of newspapers and magazines, were used to piece together the history of the roads, but some questions may never be answered. Knowing who surveyed, designed, and built Hawai‘i’s roads and bridges would be a substantial contribution to the islands’ social and technological history, but often, this information did not exist. In contrast to many of the locally developed projects, National Park Service documentation was extensive, with information regarding the personnel, surveys, design, and construction of national park roads.

My work was conducted within the College of Asia and the Pacific at the Australian National University. Hawai‘i, however, fits within two geo-political areas, the Pacific and the United States. Despite the importance of transportation in the Pacific Islands, the historiography of roads and public infrastructure is limited. This situation is primarily due to the fact that study of Pacific history has traditionally focused on the cultural context of Pacific Island peoples. My study is about infrastructure, but it also demonstrates that roads exemplify a wider history.
A search of academic libraries with Pacific collections found no scholarly titles on the topic of roads in the discipline of history.\textsuperscript{6} Bob McKillop considered the subject in an unpublished paper, "Lifeline: a Short History of the Highlands Highway [PNG]." Scholars in economics, environmental studies, and geography have also examined Papua New Guinea roads, sometimes including sections with "historical background."\textsuperscript{7} Geographer Margaret Chung wrote an M.A. thesis, "Structural Change and Population Mobility: The Impact of a Road in Rural Fiji." Government departments have published overviews of road history for PNG and New Zealand.\textsuperscript{8} The greatest potential for the topic of roads as history appears to be New Zealand, where library databases demonstrate that nation's wealth of public histories, including some narratives of roads and the people who built them.\textsuperscript{9} Many of these titles appear to be self published or supported by local councils and/or historical societies.

Describing Hawai'i historiography during the territorial period, David Kittelson astutely observed, "Transportation as a public and commercial enterprise has received some scrutiny but scarcely in proportion to the Islands' dependence on it."\textsuperscript{10} In general, little substantial work has been produced about

\textsuperscript{6} Database searches were conducted in the following libraries: University of Hawai'i-Mānoa, Australian National University, National Library of Australia, National Library of New Zealand, University of Canterbury (New Zealand), University of Auckland, University of Wellington (New Zealand), and the University of Illinois at Urbana-Champaign.

\textsuperscript{7} See S. Hoverman, M. Kennedy, and A. Simonelli, ed., Hiritano Highway: Social and Economic Impacts (Clayton, Victoria: Graduate School of Environmental Science, Monash University, 1981); W. H. Williams, A Survey of the Development of Communications in Papua and New Guinea (Konedobu, Port Moresby: Department of Transport, 1979); Roger Southern, Road Transport in the New Guinea Highlands, Occasional Paper No. 6 ([Port Moresby]: University of Papua New Guinea, Department of Geography, 1973).


transportation or public infrastructure in Hawai‘i. Donald Jackson and Barnes Riznik highlighted British industrial interests in Hawai‘i with their heritage article on Kauai‘i’s ‘Öpaeka‘a Bridge.¹¹ Robert Schmitt discussed the history of early Hawaiian bridges in the Hawaiian Journal of History.¹² The Pali Road is perhaps Hawai‘i’s most celebrated byway and the subject of popular literature.¹³

A number of works, primarily non-academic, have documented other facets of transportation, although the supporting infrastructure is usually ignored. Some studies focus on maritime transport, including Mifflin Thomas’ Schooners from Windward.¹⁴ Labor historian Edward Beechert’s Honolulu: Crossroads of the Pacific purports to examine Honolulu harbor. He conveys little about the technology and infrastructure, but instead concentrates more on general history and Honolulu development. Love Dean’s Lighthouses of Hawai‘i considers these unique artifacts of public infrastructure and highlights the islands’ maritime history.¹⁵

Railroads for cargo and passengers were common in Hawai‘i prior to World War II, and railroad enthusiasts have helped preserve the memory of this


vanished element in island history.\textsuperscript{16} Despite Hawai‘i’s dependence on air travel and cargo, little has been produced on that mode of transportation or its infrastructure. Several articles are available as are company histories that celebrate the airlines. Transportation is a field ripe for investigation.\textsuperscript{17}

In other areas of the world, including the United States, roads have been extensively studied as history. The volume of literature on U.S. roads is staggering. Road history is discussed in a variety of genres, with focuses on technology, automobiles, culture, administration and public policy, the environment, and individual or regional roads. Many books focus on the “cultural representation” of the road and typically emphasize the pop culture, nostalgia, and “romance” of the road. Numerous doctoral theses and other studies discuss individual highways or regional systems, highlighting well-known byways such as Route 66, the National Road, and the Lincoln Highway. Other theses concentrate on the “Good Roads” movements and/or state highway departments and systems.\textsuperscript{18}

This thesis has benefited primarily from administrative/public policy, environmental, and technological texts about U.S. roads to help frame the history of Hawai‘i’s byways. Bruce Seely’s \textit{Building the American Highway System: Engineers as Policy Makers} is a standard reference for understanding how “apolitical” experts (engineers) cooperated with citizens and lawmakers to

\textsuperscript{16} Although not scholarly histories, see J. C. Condé, \textit{Narrow Gauge in a Kingdom: the Hawaiian Railroad Company, 1878–1897} (Felton, California: Glenwood Publishers, 1971); John Hungerford, \textit{Hawaiian Railroads; a Memoir of the Common Carriers of the Fiftieth State} (Reseda, California: Hungerford Press, [1963]).


\textsuperscript{18} Bicyclists organized Good Roads movements in the late 1800s. Auto enthusiasts later joined the crusade to get America “out of the mud.”
help shape the public policy that achieved a modern automobile road system. Seely’s study is essential to understanding the U.S. Bureau of Public Roads (BPR) and its predecessor and successor agencies. Michael Fein’s *Paving the Way: New York Road Building and the American State, 1880–1956* presented the alternative side to Seely’s study by demonstrating how highway development was driven by state initiative. Fein’s study serves as a useful counterpart to Hawai‘i’s efforts to build a road system. Like Seely, Fein concentrates on public policymaking and engineer-administrators, showing the shift from dependence on local/county road building efforts to one based on state highway departments, with projects financed and supervised by the federal government. Both works demonstrated the increasing influence of the U.S. government over what had previously been a local responsibility.19

Several studies featuring technology were also useful. I. B. Holley’s book, *The Highway Revolution*, is unusual in that his research is based on an archive of documents kept by a small-scale contractor, his father. This type of personal collection is rare. Holley’s focus is almost entirely technical and lacks a wider critical perspective. His work is useful, however, for understanding that Hawai‘i’s problems in road advancement were not unusual and that the islands were no more backward than the rest of the U.S., which was also mired in mud. Also of value for understanding the evolution of road-making technology was Charles Wixom’s *Pictorial History of Road-Making*. Robert McCullough’s study, *Crossings: A History of Vermont Bridges*, was essential for understanding bridge construction types and technology. A historic preservationist,

McCullough has an insightful appreciation of how historic bridges contributed to Vermont's landscape.\textsuperscript{20}

A number of NPS historians produced thorough studies explaining the history of NPS landscape design and road construction. These works were essential for understanding the park service's dual mission of providing access while preserving nature. Former NPS landscape historian Ethan Carr's \textit{Wilderness by Design} analyzed the fundamentals of the agency's landscape architecture.\textsuperscript{21} Both Linda McClelland's \textit{Presenting Nature} and Timothy Davis's essay in \textit{America's National Park Roads and Parkways} highlighted the techniques employed by the NPS to design roads that presented the landscape without scarring it. These volumes furthermore described the technical aspects of the BPR's work as well as its cooperative arrangement with the NPS.\textsuperscript{22}

Park Service historian David Louter's thesis, \textit{Windshield Wilderness: The Automobile and the Meaning of the National Parks in Washington State}, expounded upon that state's national park roads, showing how the NPS "principles" for protection and automobile access have evolved over the decades. Louter provides food for thought in considering whether Hawai'i's


\textsuperscript{21} Ethan Carr, \textit{Wilderness by Design: Landscape Architecture and the National Park Service} (Lincoln: University of Nebraska Press, 1998).

national park roads have fulfilled the job they were designed to do, or perhaps, whether the road system has been too successful.\textsuperscript{23}

Historian Alfred Runte's \textit{National Parks: The American Experience} is a notable and now classic contribution to NPS historiography through his presentation of the origins of the U.S. national parks. Runte asserts that parks were not designated to protect the environment. Instead, the "search for a distinct national identity" was the initial impetus for scenic preservation.\textsuperscript{24} The contradictions of the machine and nature emerge in both Runte's and Louter's studies.

This thesis will add to Hawai'i's historiography by helping to fill the void in transportation history so aptly noted by Kittelson in the 1970s, which remains largely unchanged in 2011. It will add to the ever-growing body of literature on American roads by demonstrating the unique qualities of byway development in Hawai'i, so far removed from the rest of the U.S. I hope that highlighting this infrastructure will demonstrate that the void in Hawai'i's transportation history ought to be addressed. Air and sea transport, like roads, have been especially vital to the islands' development, yet there are no academic studies that examine this.

I begin my "View from the Road" in chapter one by discussing the historical background of overland transportation in nineteenth-century Hawai'i, demonstrating how road development was driven primarily by \textit{haole} settlers who aimed to modernize the islands. These \textit{haole} wanted to facilitate


\textsuperscript{24} Alfred Runte, \textit{National Parks: The American Experience} (Lincoln: University of Nebraska Press, 1979), xii.
agriculture and commerce; although by 1888, tourism also became a reason to build roads. The history of road development during this period reflects Hawai‘i’s general history, illustrating how haole pushed their own agenda and complained about the Hawaiian government. Hawaiian activities are also considered. Despite the political and physical challenges of construction, the Hawaiian government succeeded in building a basic road system. The “Republic” of Hawaii, as far as road achievements, fared little better than the monarchy it had overthrown.

Chapter two examines road development after Hawai‘i was annexed to the United States. After 1905, the responsibility for most road construction was transferred to the county governments, and Loan Fund Commissions were instituted. A major concern during this period was the Territory of Hawai‘i’s long struggle to access federal appropriations, including highway aid. In 1924 Congress accorded Hawai‘i the right to U.S. aid for highways, which placed the territory on course to develop a modern road system equal to those of the states. Federal appropriations and oversight helped to more firmly integrate Hawai‘i into the Union. Road projects were disrupted by the Great Depression, but the U.S. government consequently funded relief programs to maintain road-building efforts and alleviate unemployment. Like the states, Hawai‘i relied primarily on emergency funding to build roads until the U.S. entered the Second World War in 1941.

The remainder of the thesis presents case studies, each of which was chosen for its significance to Hawai‘i’s history, focusing on different eras that show, in a broadly chronological order, the progression of road administration and issues. The first analysis, the Pali Road (chapter three) was included for its cultural meaning to Hawaiians. As one of Hawai‘i’s most famous roads, a
history of island byways would be incomplete without this road. The other case studies were selected because they are considered “historic” resources. These byways retain much of the historic integrity and character of their original construction. The roads of the former Hawaii National Park, especially Haleakalā Highway, exhibit many original features, including alignment, stone masonry, landscape, and views. The Hāna Belt Road also retains these qualities, as well as more than seventy historic bridges and culverts that date from 1910 to 1947.

The Pali Road was originally a footpath built by the Hawaiians. This track was a “must-see” activity for early travelers and as a result, was well documented. This chapter contemplates native involvement with overland transportation by highlighting Hawaiians’ association with the Pali Road. Demands for improving the trail began soon after American missionaries arrived and were led primarily by haole. Both Hawaiians and foreigners recognized the Pali route as crucial to O’ahu’s development as it connected prime agricultural lands on one side of the island to Honolulu markets on the other. Improving the path was a constant challenge; in 1847 the track became a horse path; in 1898 the government built a carriageway. In the long run, topography defeated the Pali Road and changed the course of its illustrious history. No amount of effort or money could transform this track into a modern motor thoroughfare.

Chapter four considers the Hāna Belt Road as a locally developed scenic highway. The byway’s history demonstrates the evolving reasons for its

25 Hawaii National Park became Hawai‘i Volcanoes National Park in 1961 when the Haleakalā section was designated as a separate national park unit, Haleakalā National Park.  
construction, which began with agricultural development and settlement of East Maui, but ended with the concept that scenic roads should be built to promote tourism. As early as 1914 determined Maui citizens, including a prominent Hawaiian, began working to develop scenic roads with the goal of providing easy access to natural wonders, especially the Hāna coast and Haleakalā Crater. The Hāna Belt Road was built through an isolated, sparsely populated mountain district, which was an extraordinary achievement for a remote island community with limited resources.

An analysis of NPS roads begins in chapter five, which focuses on the road system in the Kīlauea section of Hawaii National Park (HNP). Early roads to Kīlauea Volcano were initiated by the local government and private entrepreneurs to promote tourism. Congress established HNP in 1916, and active administration commenced in 1922. HNP officials then assumed the lead role in developing a road system that provided access to park attractions while reflecting the early twentieth-century landscape ideals established by the National Park Service. Crater Rim Drive and the first Chain of Craters Road were designed to lie lightly on the land and present the area's volcanic landscape features. These roads were developed through the interagency cooperation of the NPS and Bureau of Public Roads, which reflected general trends found throughout the U.S. national parks. Hawai'i's unique geological and climatic conditions presented constant challenges in constructing and maintaining byways. Hawaii National Park also aimed to instill Americanism in the U.S. Territory of Hawaii.

Chapter six analyzes the debate that led to the construction of Haleakalā Highway, which was built as a scenic road to access Haleakalā Crater. Like the Hāna Belt Road, this route resulted from persistent local initiative, but this time,
it was comprised primarily of Maui's *haole* elite. These leaders facilitated cooperation between local, territorial, and federal bureaucracies to capitalize on the NPS and BPR expertise. As with the Volcano road system, the interagency cooperation combined the park service's landscape preservation ethic with the BPR's highest technical standards to design a modern road that blended with the natural environment. Developing Haleakalā Highway was also part of a spirited competition between the islands of Hawai'i and Maui that saw both islands in a race to attract tourists.

This thesis illuminates some of the lesser-known aspects of Hawai'i's history, while providing insight into some of the broader historical issues. My work is by no means a complete history of Hawai'i's roads. Rather it presents a new type of contribution towards filling the gaps in the scholarship of the islands' development and modernization. It considers the various individuals, including Hawaiians, local residents, and federal officials, who came together to build a modern road system in Hawai'i prior to the Second World War. Their intentions and hopes for Hawai'i's future are evident, as are the methods they used to achieve those goals. Furthermore the technology employed to realize their goals was a significant civic achievement. These efforts laid the groundwork for Hawai'i's future as an integral part of the U.S. and opened the door to tourism.
Note on the Hawaiian Language

The diacritical marks used in this thesis, the 'okina (glottal stop: ' ) and kahakō (macron), reflect modern usage. These marks have not been inserted into historical names or in original material where they were not used. For instance, Hawaii National Park, as designated in 1916, did not include an 'okina in "Hawaii;" however, Hawaii'i Volcanoes National Park has adopted the use of the 'okina. Likewise historical names such as the Kingdom of Hawaii and Territory of Hawaii would not have featured the 'okina.

Even though Hawaiian is not a foreign language in Hawaii'i, I have italicized Hawaiian words throughout the text and provided short translations with first use.
Chapter 1

Developing Hawai‘i’s Road System, 1845–1898

This chapter presents an overview of the major road-development issues in Hawai‘i from the institution of a constitutional government in the 1840s through the “republican” government established after the overthrow of the monarchy in 1893.¹ The development of a road system in Hawai‘i during the second half of the nineteenth century was driven by haole and was a critical factor in modernizing the Hawaiian Islands. The primary reason for road construction during the period was to facilitate the development of commercial agriculture, though by 1888, tourism became a factor. Although foreign residents consistently denounced the Kingdom of Hawaii’s failure to construct good roads, by 1851 these same haole dominated the Hawaiian legislature that funded roads. Furthermore, the situation did not appreciably advance after the imposition of the haole oligarchy’s “Bayonet Constitution” in 1887. From 1845 to the end of the century, road development made steady progress, but was hampered by an array of financial, labor, and administrative problems that were not unique to Hawai‘i. Further complicating road-building efforts were the challenges of Hawai‘i’s rugged terrain and climate.

This chapter relies primarily on the Department of the Interior records in the Hawai‘i State Archives. Some of these documents, especially the “subject files,” were selectively reviewed due to the extensive volume of records. Most

¹ I have inserted quotes around republic, as this government did not fit the definition of the term, but was rather a haole oligarchy, as many historians have noted, and a government that native Hawaiians rebelled against (Noenoe K. Silva, Aloha Betrayed: Native Hawaiian Resistance to American Colonialism [Durham: Duke University Press, 2004], 136-139). Even Kuykendall and Day, who sympathetically viewed the republic, admitted that it was “more in name than in origin or in actual fact.” (Kuykendall and Day, Hawaii: A History, 184-185.)
of these materials concerned the mundane: complaints about poor roads and maintenance as well as the kingdom’s administrative system.

Native Hawaiian historians, including Lilikalā Kameʻelehiwa and Jonathan Osorio, have justly claimed that Western scholarship on Hawai‘i’s history is deficient due to scholars’ inability to read the Hawaiian language. Kameʻelehiwa further noted that it is “difficult to perceive the assumptions underlying Hawaiian philosophy without understanding the language.” The author acknowledges that not reading Hawaiian may result in an incomplete understanding of the issues that concerned Native Hawaiians.² This chapter is intended to be an overview that lays the foundations for understanding Hawai‘i’s road history during the monarchy. Some letters and petitions in the state archives collections were written only in Hawaiian; others were presented in both Hawaiian and English. Some translations were also within the files, and other documents featured brief summaries.

_Hawai‘i’s Early “Roads”_

Hawai‘i’s mid-nineteenth-century road conditions varied considerably. Edward Perkins commented on the islands’ byways at mid-century, noting their quality, roadside landscape, and sometimes, the type of construction. Byways around Honolulu were fairly advanced, with Nu‘uanu Road even displaying “neatly painted mile-posts.” Carriages had recently been introduced, replacing

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the hand-drawn vehicles pulled by "lazy natives." Outside the "metropolis," however, travel remained primarily by horseback.³

Perkins traveled some good thoroughfares, generally in locations with thriving agriculture, such as Ulupalakua on Maui. After coming ashore at Honua'ula, he went by cart over a good, albeit steep, byway to Linton Torbert's plantation. Torbert himself probably improved this track in order to transport his produce from Ulupalakua to the landing. Perkins also traveled from Kalepolepo on Maui's south shore by way of Wailuku and Kahului to Makawao, another successful farming district, over the "best road in the whole [island] group." This byway's fine construction was due to the level nature of the terrain, and Perkins suggested that it could be "admirably adapted for a carriage road."⁴ (Figure 2)

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These routes were in striking contrast to the precipitous Lahaina Pali Trail, which prompted Perkins to dismount from his horse and tighten the saddle girths. A description of his journey summarized a foreigner's opinion of Hawai'i's thoroughfares in 1849:

I had yet to see a Hawaiian road in all its deformity, [than] that which crosses the mountains of West Maui. I would observe, that with all her improvements, Hawaii is sadly deficient in roads; except where natural facilities are offered for their construction, they consist usually of miserable paths winding through bush and brake, frequently making long detours to avoid a narrow ravine that might be spanned by a bridge, and running along the brink of a precipice, where a false step would precipitate horse and rider to destruction. With reference to the road in question, its present route cannot well be avoided, unless one were constructed by the sea-side. But this would be a work of immense labor, and would require more time and money than skilful engineering. From its summit, this portion of the mountain descends in rocky ridges to the sea, terminating in abrupt cliffs, into which the ceaseless dashing of the waves had worn caverns.

After a short halt, we commenced the steep ascent by the zigzag path, leaning forward in our saddles, and sweltering beneath the rays of a burning sun. A tedious ride brought us to a cooler region, where the coarse pili [grass] was waving, and here the comparative smoothness of the path for a short distance afforded an opportunity for cantering our horses.\(^5\)

Perkins was so nervous riding the pali (cliff, precipice) track that he secretly wished that Torbert's horse would roll over a steep ridge so that he could have "temporary respite, while expressing concern for the accident." The trail was hard to follow in some locations with Torbert cautioning Perkins not to fall too far behind. Much to Perkins' dismay, descending the pali was "infinitely worse." He concluded that novices riding Hawai'i roads should have their shins and thighs "incased in greaves." Perkins acknowledged that his difficulties were because he was "fresh from the region of tar and greasy substances." Torbert,

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on the other hand, rode daily on an “excellent” horse and easily traversed Maui’s trails.\(^6\)

**Getting Started**

The Hawaiian monarchy adopted a western-style constitutional government in 1840, with executive departments and ministries established in 1846. Public works were assigned to the Department of the Interior. Gerrit Judd, a former missionary, served as the monarchy’s first minister of both finance and interior. His initial reports to the legislature explained the circumstances that affected road projects, including the kingdom’s finances, which were in a “state of great disorder.” He implied that good public infrastructure was essential as he noted the kingdom’s untapped agricultural potential.\(^7\)

Judd recognized that the tax system needed reform. In some years, the kingdom’s entire labor tax was appropriated for schools. He personally disapproved of the kingdom’s 1847 revenue surplus and considered reducing the “somewhat heavy” taxes, even though they were not always collected. “Tax gatherers” frequently neglected to solicit taxes from their friends. Taxes were also evaded by assigning one’s taxable property to residents that were exempt from such duties.\(^8\)

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\(^6\) Perkins, *Na Motu*, 138-139.

\(^7\) Gerrit Judd, *Minister of the Interior, Report*, 1845, 4, 14; 1846, 47. Judd served as the Minister of Finance until September 1853. He had been the mission’s physician. According to Kame’elehihiwa, his service as the personal doctor to the royal family allowed him to become quite close to Hawaiian rulers. She maintained that he had a “manipulative nature” and was “fond of dispensing covert political advice along with his medicine.” (Kame’elehihiwa, *Native Land and Foreign Desires*, 180.) The *Missionary Album* recorded that Judd “unofficially” advised the royal family. He resigned from the mission in 1842 and served the monarchy in various offices from 1843 to 1853 (*Hawaiian Mission Children’s Society, Missionary Album* [Honolulu: *Hawaiian Mission Children’s Society*, 1969], 128-129).

\(^8\) Judd, *Minister of Finance, Report*, 1847, 6; 1848, 1-4.
To move forward, Judd recommended prioritizing the construction of "urgently needed" public works in 1845 so that the government's "small means" would benefit the greatest number of people. Some achievements benefited fewer people than others, such as the king's Nu'uanu villa, the palace in Lahaina, and the Punchbowl gun battery. Of greater advantage for most makaʻāinana (commoner, populace) was the horse trail down Nu'uanu Pali, other new roads, and stone bridges that facilitated everyday travel. In 1848, revenues were "sufficient," but Judd warned that the nation would soon need a "more liberal disbursement of money." To facilitate agriculture, he estimated that $100,000 was needed for roads, with another $100,000 for harbor facilities. These goals would be difficult as Judd's policy, as well as some of his successors, was to pay for improvements, not incur debt.

Keoni Ana was Judd's successor as interior minister. According to Kameʻeleihiwa, Ana "admitted quite freely that Judd and [William] Richards ran his department." If so, Ana's term as minister may be viewed as a continuation of Judd's policy. Ana (that is, Judd) asserted that public infrastructure was not receiving appropriate attention and emphasized the need for good overland transportation, especially the construction of belt roads for the "convenience of transporting produce." In 1848, Ana explained:

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9 Judd, Minister of the Interior, Report, 1845, 5, 8-10; 1846, 4-6.
10 Judd, Minister of Finance, Report, 1847, 6; 1848, 1-2; Judd, Minister of the Interior, Report, 1845, 5; and Keoni Ana, Minister of the Interior, Report, 1847, 7.
11 Keoni Ana, also known as John Young II, was the son of a Hawaiian chiefess and John Young, an American military advisor to Kamehameha. He served in the House of Nobles and as Minister of the Interior from 4 March 1846 to 6 June 1857. Ana's name was spelled as Keoni Ana in the Kingdom of Hawaii documents cited herein, thus this spelling will be used throughout this chapter. Kameʻeleihiwa also spelled the name in this manner, however, Osorio, spelled the name "Keoniana" (Jonathan Kay Kamakawiwo'ole Osorio, Dismembering Lāhui [Honolulu: University of Hawai'i Press, 2002], 27, 45).
12 Kameʻeleihiwa, Native Land and Foreign Desires, 191. Reverend William Richards resigned from the mission in 1838 to become a "chaplain, translator, counselor and political advisor to the throne at the request of the King." (Missionary Album, 162.)
13 Ana, Report, 1846, 6. It is important to note that "belt roads" existed in pre-contact Hawai'i. A footpath, which was the "road" of the era, completely encircled the island of Maui by.
Good Roads will be a great desideratum in all parts of the Kingdom, when the waste lands become occupied as plantations for the cultivation of staple articles of export. I hope, therefore, that sufficient provision will be made to enable me to carry out so desirable an object as the construction of Roads and Bridges.\textsuperscript{14}

Interior Department reports revealed that the monarchy's meager revenues could not meet its tremendous infrastructure needs. Money was required for roads and bridges, but also for harbors, wharves, breakwaters, lighthouses, prisons, waterworks, sewerage, public markets, fire departments, buildings, and a host of government services. Ana recognized the nature of his ambitious task and the lack of progress. He observed that roads throughout the islands were in "very bad condition" and the prisons "exceedingly bad." In 1851 he devised a solution:

In my opinion, what is needed for the construction of proper prisons, roads and wharves, is a skillful foreign supervisor, to superintend all these things, to be paid by the government. With a good superintendent, the cost of construction would be much diminished and the revenue of [government] proportionately increased. With the advice of King and Council I have appointed one, and his salary will need to be provided for.\textsuperscript{15}

This statement of what was required to build infrastructure was nothing less than modernizing and westernizing the islands. Jonathan Osorio maintained that the era from 1820 (when the missionaries arrived) until 1887 (Bayonet Constitution) transformed Hawai'i through its "slow, insinuating invasion of people, ideas, and institutions." Osorio demonstrated how \textit{haole} increasingly influenced the Hawaiian government: foreigners (including former missionaries and their descendents) served in the legislature and on the king's

\textsuperscript{14} Ana, Minister of the Interior, \textit{Report}, 1848, 5.
\textsuperscript{15} Ana, Minister of the Interior, \textit{Report}, 1851, 7.
privy council; entrepreneurs also exerted pressure. Developing public infrastructure, including roads, was a consequence of this ascendancy.

**Haole Determine the Kingdom’s Needs**

Better roads may have been of little relevance to many Hawaiians in the 1850s. The *Polynesian* newspaper and the Royal Hawaiian Agricultural Society’s *Transactions* demonstrated, however, that byways and bridges were of the utmost concern to foreign residents.

Editorials and letters in the *Polynesian* revealed foreigners’ expectations and their suggestions for advancing public infrastructure. Although the *Polynesian* was a government newspaper (part of the Department of the Interior), articles often gave voice to *haole* interests and urged the government to improve public works. The newspapers not only showed the dominance of foreign opinion, but quite frequently, disdain for Hawaiians and their culture.

In 1850, a writer calling himself “Alamaikai” (“good path”), discussed Big Island problems, where roads were “crooked, narrow, rough, breakneck, villainous ways—a shame and disgrace both to government and people.”

“Alamaikai,” a naturalized citizen of unknown origin, opined that the kingdom had made progress in “everything” but roads, where instead of advancing, it regressed. He grumbled that the only attempt at road repairs on the Big Island in ten years had been an effort that was “purely a la Hawai’i,” as the only achievement had been to make the trail worse, not better.17

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16 Osorio, *Dismembering Lāhui*, 3. Osorio’s second chapter, “Law and Lāhui,” explains how *haole* served from the earliest days of the Hawaiian government, much to the dismay of *maka‘āinana*. Chapter four, “A House Divided,” discusses how foreigners served in the House of Representatives by the 1850s and made it more responsive to their commercial interests.

17 “The Highways of Hawaii Nei,” *Polynesian*, 2 March 1850. The “Big Island” will be used throughout this thesis to refer to the island of Hawai‘i, the largest of the Hawaiian Islands. This usage conforms to how island residents distinguish between two entities, the island of Hawai‘i and the group of islands known as Hawai‘i.
“Alamaikai” had petitioned the government for roads, and at the authorities’ request, surveyed some routes. He even offered to supervise the “native labor” so that roads would be properly built. “Alamaikai” asserted that his motives were “all from an earnest desire to see a little waking up to the practical utility of decent highways, among the native population.” He emphasized that leaders “annually squandered” Hawai‘i’s taxes, which were “amply sufficient” to build roads that “would prove of immense comfort and advantage to the immediate population of the district and bring credit to the nation.” According to him, island rulers did not care to be bothered with roads, and when they did, they coerced labor from the Hawaiians and forced them to work under miserable conditions.\textsuperscript{18}

“Alamaikai’s” views were complicated. He harshly criticized the system, laborers, and leaders; yet he sympathized with the maka‘āinana, acknowledging that they endured hardships while being forced to build roads for others. He condemned the manner in which the labor tax was coerced, but he obviously believed that Hawaiians should be working it, not him.\textsuperscript{19} His days of being exempt from the road tax were numbered. Five months after his letter to the Polynesian, the law was amended to require all male subjects in Hawai‘i to pay a road tax, at the discretion of the island governors. This revision was specifically enacted to address “the construction of roads, bridges, and other public works of the kind,” which were “of great importance to the agricultural and commercial prosperity of the islands.”\textsuperscript{20}

\textsuperscript{18}“The Highways of Hawaii Nei,” Polynesian, 2 March 1850. “Alamaikai” noted that one of the hardships in working the road tax was having to walk long distances to the work site.
\textsuperscript{19}“The Highways of Hawaii Nei,” Polynesian, 2 March 1850.
\textsuperscript{20}Until August 1850, the labor tax was imposed on male subjects, aged sixteen and older, born to “native aboriginal mothers” (Kingdom of Hawaii, Laws of the Kingdom, Supplement to the Statute Laws of His Majesty, Kamehameha III, 1848, 50; Penal Code of the Hawaiian Islands, 1850, 193-194).
In 1851 a Polynesian editorial emphasized that roads were a government's most important expenditure. Residents pleaded for reform, complaining that considerable effort was producing few results. According to this column, there was not a single mile of good road in Hawai‘i, not even in the “metropolis” of Honolulu. Although the government had labor, it was deemed useless without competent engineers to design byways with good drainage. The writer recommended that road-tax dollars be used to hire an engineer to determine what was feasible with the available resources.21

The newspaper reported that neighbor islanders were also grumbling.22 Kaua‘i roads, for example, were “lamentable,” which threatened the success of its large sugar plantations. The editor surmised that if rural districts (apparently every place outside Honolulu) had good roads, the community would benefit tremendously. Good roads would provide an “amasing [sic] spur to industry among the native population, and at the same time tend to the opening of plantations....”23 The missionary zeal for inculcating a Protestant work ethic among the indigenous population was pronounced. These writers viewed the labor tax as the means to develop the islands and motivate Hawaiians to become industrious members of society.

One week later, “Dillon & Suquet” claimed they did not wish to criticize government efforts, but instead wanted to emphasize “guiding principles” for good roads. “[T]he best evidence of civilization,” according to these “engineers,” was “well constructed roads. If this were admitted as the standard criterion, it would be a terribly severe test to the Hawaiian Islands.” They commented that roads should not be considered as a “luxury for the rich”

22 “Neighbor islands” and “neighbor islanders” are contemporary terms for the islands outside of O‘ahu and their residents.
because they were vital for farmers. Good roads were an impetus for
developing agriculture and the lack thereof, in their opinion, was why so much
of O'ahu lay waste. They promoted themselves as having the experience and
scientific skills to survey and design roads, bridges, and drainage. The pair
described how they would build highways to withstand Hawai'i's climate and
topography, and proposed that prison labor be employed to reduce expenses.\textsuperscript{24}

It is not known who these writers to the newspaper were, but American
influence was evident. Their letters and editorials asserted that roads were vital
in transforming Hawaiian society into Thomas Jefferson's ideal nation of small
farmers.

As nineteenth-century road construction was usually informal, the
suggestions that engineers direct the kingdom's road matters were also
significant. Engineering training was often an apprenticeship, but the
accelerated growth of transportation networks in the early 1800s prompted
many American colleges and universities to offer more "scientific" courses,
including engineering, after 1830.\textsuperscript{25} The Polynesian and Royal Hawaiian
Agricultural Society (RHAS) discussions indicated that the haole appeared to
understand the need for trained engineers to design and build island roads.
Unfortunately, it is unknown whether those claiming to be "engineers" had any
formal training or merely considered themselves to be qualified "engineers."

"J. E. W." joined the Polynesian's discussion and expanded on the oft-
expressed theme that an extensive highway system increased public prosperity.
His letter was indicative of the great chasm between "native" and foreign goals.
The author claimed that anyone who had ever spent time in a country with good

\textsuperscript{24} "Notice Upon Roads," Polynesian, 11 January 1851.
\textsuperscript{25} Terry S. Reynolds, "The Education of Engineers in America before the Morrill Act of
roads knew the importance of achieving the same in Hawai‘i. “It [was] hardly to be expected,” he opined, “that the native inhabitants will be able...to appreciate all the blessings and benefits, attendant upon the perfection of an extensive system of free and easy communication with all portions of their country.” He believed that “with proper zeal” the Hawaiians could be convinced of the value of good roads in transporting their produce to market.26

According to “J. E. W.,” designing a road system was urgently needed because the nation was attracting “some of the most enterprising men the world affords,” which meant that the Hawaiians’ days of traveling without regard to boundaries would soon end. He explained that entrepreneurial immigrants would not tolerate trespassing, but would expect byways with proper rights-of-way to provide passage. The writer advised that the government secure the “blessings” of roads by surveying routes and setting land aside before it became private property, thus avoiding additional expense and possible disputes in the future.27 His commentary was timely and perhaps resulted from the 1848 Māhele, which had redefined Hawai‘i’s traditional land system by permitting its sale and private ownership.28

The reports of the Royal Hawaiian Agricultural Society, organized in 1850, provide a valuable historical record for highlighting haole perceptions of the kingdom’s potential and their demands for improved infrastructure. At its first annual meeting, William Lee, who became the House of Representatives speaker in 1851 and vigorously promoted commercial interests, addressed the RHAS and set the tone for its activities. Lee advocated a “judicious system of

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28 Kame‘eleihiwa explained that “Māhele” in “Western” histories of Hawai‘i has always been defined as “divide, referring to a division of the communal rights into individual portions.” She maintains that for Hawaiians, the term had a very different meaning, to “share.” Kame‘eleihiwa furthermore noted that the event was not “great,” as many have labeled it, and thus prefers to use “1848 Māhele” (Kame‘eleihiwa, Native Land and Foreign Desires, 8-11).
internal improvements" that would allow thousands of acres lying "waste" to be transformed into productive agricultural activities.\textsuperscript{29}

Comprised primarily of foreign residents, many missionaries, and some Hawaiians, the RHAS espoused the mission's goals of uplifting Hawaiians. Members viewed farming as a means to civilize a people, noting that agriculture was the "chief pillar in the temple of national prosperity." The RHAS aimed to bring planters together to improve crop cultivation and discuss the islands' agricultural potential. They also discussed the issues of labor, capital, and markets. The society furthermore analyzed the kingdom's transportation needs, including roads, harbors, and steamer service. The RHAS recognized that the changes to Hawai'i's land system after the 1848 Māhele opened the door for commercial agricultural opportunities; these would not flourish without public infrastructure. The growing U.S. influence on the Pacific Coast was also a factor, as it introduced new trading prospects, primarily in California.\textsuperscript{30}

According to historian Ralph Kuykendall, the RHAS was most effective during its first five years, when Lee and James Marshall led the organization.\textsuperscript{31} The extent of its influence on the kingdom's road policy, however, was a moot point, since many of the RHAS committee members, like Lee and Marshall, were also legislators.\textsuperscript{32}

\textsuperscript{29} William L. Lee, "Address to the Royal Hawaiian Agricultural Society," \textit{Transactions of the Royal Hawaiian Agricultural Society} 1, no. 1 (1850), 34-35, hereafter cited as RHAS Transactions. According to Osorio, Lee exerted substantial influence in the House of Representatives. Lee and others pushed through legislation that benefitted commercial interests and turned a deaf ear to the petitions of maka'ainana. Lee drafted the 1852 Constitution that gave sole power to the House of Representatives, further reducing the power of Hawaiian ali'i (chiefs). (Osorio, \textit{Dismembering Lāhui}, 77-79, 82-85.)


\textsuperscript{31} Kuykendall, \textit{Foundation and Transformation}, 328.

\textsuperscript{32} \textit{RHAS Transactions} included membership lists in each volume, which can be compared to Osorio's lists of Hawai'i's legislative members, see Osorio, \textit{Dismembering Lāhui}, "Illustrations and Tables," vii.
Despite its complaints, the RHAS initially portrayed infrastructure accomplishments in a positive light, while also taking credit for them. In 1851, the RHAS claimed success in advancing its agenda, as “members’ efforts” resulted in appropriations for highway improvements and the appointment of member Thomas Metcalf (also a legislator) as superintendent of the Bureau of Internal Improvements.\textsuperscript{33} RHAS member and legislator Godfrey Rhodes asserted that Kaua‘i’s public roads had been “wonderfully improved” under haole superintendence. Anticipating more government funding, he expected the island’s byways to be made “tolerably good and easy for travelling on horseback” and optimistically predicted that a carriage road would soon stretch from Hanalei to Waimea.\textsuperscript{34}

In 1853 Metcalf summarized Hawai‘i’s achievements since the RHAS was founded in 1850. He declared that the islands had advanced from no roads whatsoever (an exaggeration that ignored Hawaiian trails, which were the “roads” of their era) to having over 150 miles of carriage roads and about 450 miles of bridle trails. About 900 feet of wide, “tolerably substantial truss bridging” had been built to cross streams of “the most difficult passage.” In addition, many “simple” structures were erected and considered to be good, although temporary, solutions. The only work that remained was to build bridges that would render trails passable in all seasons.\textsuperscript{35} Metcalf’s report highlighted how western technology was being successfully transferred to the Hawaiian Islands.

\textsuperscript{33} William L. Lee, ["President’s Report"], RHAS Transactions 1, no. 2 (1851), 7; and Ana, Minister of the Interior, Report, 1852, 13.
\textsuperscript{34} [Godfrey] Rhodes, "Report," RHAS Transactions 1, no. 2 (1851), 53-54. Osorio noted that Rhodes sat in the House of Representatives in 1851 (Osorio, Dismembering Lāhui, 69). Rhode’s proposed carriage road was nearly the entire length of what eventually became Kaua‘i’s belt road.
Engineer William Webster, another RHAS member, contested Metcalf's assessment. Webster indicated that roads outside the Honolulu area were as "bad as nature" could make them. He asserted that the major problem was a lack of engineering. Directly contradicting Metcalf, Webster declared that bridges were "generally so narrow and frail" that horseback riders were astonished to cross without broken bones or a "ducking." He advised that the legislature collect cash taxes rather than labor, so that roads and bridges could be properly engineered, which would greatly advance the kingdom's agricultural development. Webster emphasized that road making was not a "mere matter of instinct," but should be the duty of a "Superintendent of Public Works" or other "skillful officer." His comment indicated that although Ana intended to employ a "skillful foreign supervisor," Metcalf and the other haole did not possess adequate engineering abilities. Webster's observations indicated that foreign did not necessarily mean talented.

In 1852, Metcalf described some of the administrative problems. At the time, road supervisors were elected for each district in Hawai‘i. They collected and disbursed road taxes, directed labor taxes and projects, and hired luna (foremen). Metcalf noted that the system was "quite defective" and needed reform. The labor tax was ineffective, but the major problem was that Metcalf had no authority to dismiss an incompetent or dishonest road supervisor; there was apparently little accountability.37

In 1854 Webster expounded upon these pressing issues, noting that the situation was not improving. Instead, the "usual amount of labor" was expended on "ineffectual endeavors." Webster iterated the importance of roads to

36 William Webster, "Letter to the Committee on Roads," RHAS Transactions 1, no. 4 (1853), 150-151.
agricultural development and asserted that the legislature needed to reform its system of management and taxation. Agreeing with Metcalf that there were no checks on road supervisors, Webster stressed that electing them was bad policy. Road supervisors were politicians, not engineers: they ensured their re-election by exacting the minimum amount of labor in order to gain favor with their constituents. The result was that very few supervisors had any road-building skills; their roads washed away as soon as the winter rains began.\footnote{38}

The dilemma regarding elected supervisors prompts further examination. Prior to 1851, district supervisors were appointed by island governors. According to Osorio, haole became increasingly dominant in the Hawaiian legislature beginning in 1851. They revised the road laws that year to provide for elected supervisors. Why did haole then complain about this very process the following year? Osorio examined why the Hawaiian-majority electorate sent so many haole to the legislature in 1851 and concluded that they voted for individuals they knew. It seems reasonable to infer that since Hawaiians voted haole into the legislature, these same lawmakers anticipated that the “native” vote would elect road supervisors that would promote haole interests.\footnote{39} That apparently did not happen.

Webster reported that the legislature had reduced the labor commutation to $2.50 instead of $6.00 in order to improve compliance and thus increase revenue. He charged that the only result was the “improved appearance of some of the inspectors,” not better bridges. To remedy the situation, he wanted a one-dollar tax on horses and on cattle taken to market. Unfortunately,

\footnote{39} William Webster, “Report on Roads, Harbors, &c.,” \textit{RHAS Transactions} 2, no. 1 (1854), 130.
\footnote{39} Osorio, \textit{Dismembering Lāhui}, 67-73.
Webster observed, these taxes would only be useful if there was an effective collection system.\footnote{40}{Webster, “Report on Roads, Harbors, &c.,” 130-131. Webster was incorrect in noting the reduced commutation. It had previously been fifty cents per day, which would total six dollars annually for the twelve required days of labor. In 1853, the commutation was reduced to an annual fee of two dollars, rather than a daily fee of fifty cents (Kingdom of Hawaii, Laws of his Majesty Kamehameha II, 1853, 37).}

Webster ascertained other obstacles to successful road building. A serious problem was that the law required taxes to be spent in the district where they were collected. In some districts, the tax was sufficient, while in lightly populated areas, it was wholly inadequate. Webster emphasized that the solution for this dilemma was for the legislature to appropriate money to supplement the taxes. This would be the only way to build wagon roads in heavily traveled but sparsely populated areas, for example, from Lahaina to East Maui and the Nu’uanu Pali Road, where “a worse road with an equal amount of traffic [existed] nowhere in the world.”\footnote{41}{Webster, “Report on Roads, Harbors, &c.,” 130-131.}

The laws were not revised; instead, nearly all public works projects ceased in 1854 because the government had no money.\footnote{42}{Ana, Minister of the Interior, Report, 1854, 6.}

A Polynesian editorial discussed the road law, stressing that byways were important for private enterprise, but also for the “daily enjoyment of life.” First, the regulation requiring taxes to be spent in the district collected was criticized because roads sometimes ended at the district boundary, thus preventing the development of a useful system. The writer asserted that roads were a “great responsibility,” but elected supervisors lacked the necessary skills. He charged that the elected road supervisor process was inherently flawed, with supervisors only interested in “horsetrading” in their own backyard. The editorial charged that Hawaiians were “indifferent” about who they elected to the legislature, but they manifested “the keenest anxiety in regard to the person
about to be chosen road supervisor.” This was logical since supervisors had
the power to requisition men to work the roads for six days each year.43

The writer, as was often the case, commented on work ethics, but
conceded that Hawaiians were not “exactly devoid of energy.” When they
heard about an impending visit by the king, they would begin “flying around” to
repair decrepit roads. They plugged holes in bridge floors with turf and threw
boughs and rushes into swampy roads that normally sank a horse up to his
girths. The king’s party would then “whiz by,” destroying these temporary
repairs. The next day ordinary travelers were subjected to the usual “Slough of
Despond.”44 This observation is significant for revealing the diverging “native”
and foreign goals. Hawaiians may have expressed little interest in good roads
and labor taxes, but they observed tradition in their respect for the king. This
supports Osorio’s thesis that the makaʻāinana maintained their heritage and
values, especially their allegiance to the king, during the constant erosion of
their sovereignty by western values, ideas, and institutions.45

Reforming the System

In 1854 Minister of Finance Elisha Allen elaborated on how tax laws
hindered progress. First, the tax burden was inequitable (i.e., a head tax).
Allen recommended that assessments instead be based on one’s ability to pay,
as was the case in some U.S. states. Contrary to Webster’s advice, he wanted
to follow some states’ examples by allowing taxpayers to choose whether to pay
by cash or labor. Allen furthermore urged the legislature to reform the tax-
collection system so that everyone would comply or be penalized. The minister

43 Polynesian, 15 September 1855; Laws of His Majesty Kamehameha III, 1853, 37.
The labor tax was reduced from twelve days to six in 1853; a full day’s work was eight hours.
44 Polynesian, 15 September 1855.
45 Osorio, Dismembering Lāhui.
pointed out that the majority of people failed to pay in some districts, which was unfair to those who honored their obligations. To remedy the situation he proposed that tax collectors be paid a percentage of the revenue rather than a salary. Allen recognized that unless enforcement was implemented, Hawai‘i could not build necessary infrastructure.⁴⁶

Minister of the Interior Ana also wanted reforms, noting that the greatest drawback in the road-building program was the “want of qualifications and of proper responsibility in the Road Supervisors.” Ana believed that if they were appointed by and responsible to the Department of the Interior, this “important branch of the public service” would build better roads with greater economy. Until then, the kingdom would not get its money’s worth from road taxes, even though some road supervisors completed their duties “faithfully and energetically.”⁴⁷

Ana’s successor, Lot Kamehameha, reported that the road tax laws were revised in 1856, which produced a “beneficial effect throughout the kingdom.” Reforms gave the interior minister the authority to appoint road supervisors and allowed the tax to be worked or paid with a two-dollar commutation. Furthermore, enumerators were to compile lists of taxpayers and record payments. Those who failed to pay could be fined. The legislature did not implement what Allen had considered his most urgent recommendation, a tax based on ability to pay. All men between the ages of sixteen and fifty were still required to pay the same road tax.⁴⁸

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⁴⁶ Elisha H. Allen, Minister of Finance, Report, 1854, 7; 1855, 5, 31; 1856, 5.
⁴⁷ Ana, Minister of the Interior, Report, 1856, 4; 1855, 9.
⁴⁸ Lot Kamehameha, Minister of the Interior, Report, 1858, 9; Kingdom of Hawaii, Laws of His Majesty King Kamehameha IV, 1856, An Act Relating to the Road Tax, 43-47. Keoni Ana resigned for health reasons in June 1857 and died six weeks later. Lot Kamehameha was Kamehameha V, also known as Kapuāiwa Lōla.
Lot reported that the roads were much better maintained than under the former system, with the money collected by commutation enough to keep some districts' roads in good repair. He noted that the sparsely populated areas, however, would need additional funding from the legislature, since most of those taxpayers preferred to work rather than pay the road levy. Between 1853 and 1857 nearly 5,300 men were added to the road tax rolls and revenue increased more than 300 percent. Allen confirmed that the new tax collection system worked; total treasury receipts increased 268 percent.

Robert Wyllie, a haole member of the House of Nobles and long-serving foreign minister, expounded upon the issues with his "Discourse on Roads" to the RHAS in 1856. He observed that no country with a such a small population could expect decent roadways because there was too little money and too few laborers. Hawai'i, with a population of less than 80,000 stretched across 6,100 square miles, would do well, in his opinion, to build good thoroughfares near towns and seaports. Wyllie cautioned, however, that this would not happen soon due to insufficient revenue. Referring to Metcalf's earlier report, which noted the abundance of good landings throughout Hawai'i, Wyllie proposed that a "good cart road" be constructed around each of the principle islands. Byways could then be built to connect valleys and inland areas to these "belt" roads. Wyllie's system would provide roads and landings for farmers to transport their produce to market.

Wyllie then addressed what he apparently believed was the larger obstacle: Hawaiians' failure to work for the common good. Rather than learn to cooperate, which would "really cost them nothing," Wyllie charged that

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49 Lot Kamehameha, Minister of the Interior, Report, 1858, 9-10; and Laws of His Majesty King Kamehameha IV, An Act Relating to the Road Tax, 43-47.
50 Allen, Minister of Finance, Report, 1856, 5.
51 R. C. Wyllie, "Discourse on Roads," RHAS Transactions 2, no. 3 (1856), 74-75.
Hawaiians spent “the greatest portion of every year in slothful inaction.” He envisioned native families assisting each other in building houses, roads, fences, watercourses, churches, schools, and other community necessities. Wyllie summarized his view of the dilemma:

The Hawaiian people will never prosper, until they depend more upon themselves and less upon the government than they have been accustomed to do. They seem to think that the government should do everything for them, while they do nothing for themselves. They have yet to learn that the source of all wealth is labor; that without labor neither taxes nor duties could be paid, the government would derive no revenue...[to] undertake any other work for the good of the people. 52

Wyllie’s comments ignored the fact that the traditional Hawaiian system had been based on communal cooperation, and by the 1850s, was being eroded by a monetary economy. Furthermore, each year there were fewer inhabitants to be responsible for road building as the Hawaiian population continued to be ravaged by epidemics.

Wyllie also addressed other issues, noting that it would be necessary to teach Hawaiians how to build roads “practically” [his italics], since road-making did not “come by inspiration.” He heartily endorsed the new law, which corrected a “great evil” by allowing the minister of the interior to choose road supervisors who knew how to construct byways. Wyllie contended that the former law failed because it trusted Hawaiians as road supervisors. While “native” labor was necessary, he asserted that “native” supervisors were not. He strongly endorsed Superintendent of Public Works (SPW) Woods’ intention to devise a general plan for improvement, as well as Webster’s recommendation to hire engineers. He anticipated that the previous system’s

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52 R. C. Wyllie, “Discourse on Roads,” 75.
"game of Sisyphus" would end, as there was not a dollar to spare for "such absurd amusement."^53

Revised, but not Changed

A survey of government records from 1857 to 1886 indicates that the new laws did not satisfy residents, even though road improvements were realized during this period. In the immediate aftermath of the 1856 reforms, the initial tone seemed to indicate cautious optimism. For the most part, however, the financial, labor, and management issues that had plagued the monarchy persisted. The Interior Department records included numerous petitions and letters, many of which complained about several issues at a time. Evidence demonstrates that Hawaiians were engaged with the system, but *haole* controlled most of the activities and the positions as road supervisors.

In 1858 road supervisor J. E. Taylor worked fifty-one days to fulfill his duties. He described his experience in the wake of the reforms:

They have been days of hard, and most perplexing labor. The former practice of allowing the natives to finish their six days work in a part of two, makes it a hard task for the Luna, who, attempts to faithfully carry out the present law. Their [sic] has not been as much accomplished as I could wish, but more than I expected. The residents, both native and foreign, speak of the amount of work done as a great advance on former years.^54

Enforcing the labor tax remained the perplexing problem. The "tax gatherer" collected 637 names, but only 535 men worked and eleven commuted their taxes. The enumeration list was difficult to compile as men moved between districts, were temporarily absent, or working elsewhere. Taylor utilized his crews for four days per week, which he believed was as many as

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^54 J. E. Taylor to Lot, Minister of the Interior, 29 January 1858, Interior Department, Box 37, Subject Files, Roads, Hawaii N.D., 1855–1859, Hawaii State Archives, hereafter cited as HSA.
they could comfortably handle, while also serving the project "profitably." He acknowledged that he did not trust Hawaiian luna and that work was hampered by inferior tools.\textsuperscript{55}

Although Taylor seemed pleased with his accomplishments, he resigned from his post eight months later, noting that his duties as road supervisor affected his health. He canvassed nearly every foreigner in the district regarding his soon-to-be vacant position, but found only one person interested in the job.\textsuperscript{56} The problem of locating haole willing to serve as supervisors was apparently not unique. Hilo road supervisor Reed considered quitting, which caused "pilikia loa" (much trouble), as the governor's secretary knew of no suitable replacement.\textsuperscript{57}

Securing labor and/or money for road projects was a persistent challenge. Hawai'i's sparse population was often separated by great geographical barriers and long distances. Francis Oudinot had no idea how to expedite work on West Maui's unpopulated "mountain road." He could not collect tax money because he had no enumeration list. A greater problem was that labor was sometimes impossible to obtain because no one lived in the area. The law stipulated that men had to reside within five miles of the roadwork in order to ease the burden of getting to the site. Ninety-five "workingmen" lived in nearby Ukumehame, a great increase from previous years, but they were apparently of no use to Oudinot.\textsuperscript{58}

\textsuperscript{55} J. E. Taylor to Lot, Minister of the Interior, 29 January 1858 and 5 March 1858, Interior Department, Box 37, Subject Files, Roads, Hawaii N.D., 1855–1859, HSA. The 1856 law required men to work six days per year for their road tax. It is not clear whether Taylor exacted the entire tax from his men or accepted four days.

\textsuperscript{56} J. E. Taylor to [Lot], 13 September 1858, Interior Department, Box 37, Subject Files, Roads, Hawaii N.D., 1855–1859, HSA.

\textsuperscript{57} S. S. Austin to R. A. S. Wood, Superintendent of Public Works (SPW), 27 November 1860, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1860–62, HSA.

\textsuperscript{58} Francis A. Oudinot to Lot Kamehameha, 3 July 1857, Interior Department, Box 43, Subject Files, Roads, Maui, 1851–1858, HSA; and Laws of His Majesty King Kamehameha IV, 43
Ten years later, finding laborers in West Maui was still difficult. Maui's chief supervisor Daniels conscripted workers by making "natives" fulfill their labor taxes from the previous year. East Maui's Honomanū, a swampy area with a notoriously bad track, was a hopeless situation, with only thirteen "natives" living along an eight-mile stretch of road. The money from tax commutations was intended to purchase materials and pay for labor as needed, but Daniels reported that most subjects chose to work rather than pay two dollars.\(^59\) Contrary to Lot's claim that the district taxes were sufficient, supervisors generally grumbled that the "local tax [was] entirely inadequate to keep [roads] in repair."\(^60\)

R. A. Lyman elaborated on how the revised laws failed to resolve the issues of labor and cash. The Puna District, the poorest on the Big Island, could not generate enough road tax to pay for a crucial ninety-foot bridge on its main road. Without it, farmers transported their produce on pack animals to Hilo via an arduous three-mile detour.\(^61\) Lyman likewise chronicled the enduring dilemmas of tax evasion and supervisors not performing their duties. Ka'u supervisor W. Martin accomplished "worse than nothing with the Govt. [sic] roads." More egregious was that he provided thirteen men with receipts for discharging their road tax when they had only labored four hours. According to Lyman, this was "only a specimen of the manner in which the Kau road tax is worked."\(^62\)

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59 H. W. Daniels to Hutchinson, 16 July 1866, Interior Department, Box 43, Subject Files, Roads, Maui, 1859–1866, HSA.
60 Henry Cooper, to E. O. Hall, Minister of the Interior, 7 February 1873, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1873, HSA.
61 R. A. Lyman to F. W. Hutchinson, Minister of the Interior, 29 August 1868, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1867–1868, HSA.
62 R. A. Lyman to F. W. Hutchinson, Minister of the Interior, 30 August 1869, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1869, HSA.
Appointed supervisors successfully finished many projects even though taxpayers continued to grumble about them. The Interior Department files included numerous petitions and letters, signed by haole or Hawaiians or both, against road supervisors. A typical example was the case of the remote Hawaiian village of Waipi‘o, which wanted its supervisor, Welewele, removed from office. J. Bicknell, who was probably the Big Island’s chief supervisor, observed that no “faithful” supervisor would ever be popular in Waipi‘o if he properly enforced the road tax. He asserted that residents wanted someone who was “easy” and would “let them do as they please about work.” Bicknell noted that Welewele was a “young man of good business capacity” who enforced the road tax, “as he was duty bound to do,” which “greatly enraged” residents. They were further angered because Welewele did not approve their work because it did not comply with the construction specifications. Although the Waipi‘o job was not finished, other projects in the region were, which was deemed an improvement over previous years.63

Though Bicknell supported Welewele, in general, he did not trust Hawaiians. He advised that cash be given to the road supervisors in small amounts only when it was needed to pay for work in progress. Bicknell alleged, “Money has always been a snare to Hawaiians. Scarcely one in a thousand can resist the temptation.” Bicknell’s assessment was unfair, but it underscored a major flaw in the system. Road taxes were collected by island governors, then given to the road supervisors, not the treasury. Although supervisors were supposed to report how the money was spent, accountability was an issue. In 1876 the minister of finance recommended that the law be changed to require

63 J. Bicknell to C. H. Gulick, 16 June 1873, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1873, HSA. These subject files, under the heading of “roads” contained numerous petitions and letters complaining about supervisors, roads, taxes, and other issues.
taxes to be deposited to the treasury. Dishonest supervisors were most certainly not a problem limited to Hawaiians.

Besides working out the road tax and occasionally serving as road supervisors (like Welelele), evidence demonstrates that Hawaiians were engaged with the road program in other ways, especially by the 1870s. Numerous documents in the Interior Department files indicated they shared the same concerns as haole residents: repairs, opening new roads, poorly performing supervisors, supervisor nominations and appointments, and allocation of money. In 1870 a petition featuring ninety-eight mostly Hawaiian names, requested that a straight road be opened from Kualanamauna to Kealakekua on the Big Island. Other requests that year included Hawaiians asking for their compatriots to be appointed as road supervisors, one of whom, J. W. Kumahoa, became the Puna supervisor. Fifty Hawaiians also petitioned that money for Hāmākua District roads be spent immediately. In an 1874 request, Hawaiians asked that tax money be spent to improve the principle road in Ka‘u.

Interior ministers routinely acknowledged that labor and taxes were insufficient to build the infrastructure needed to develop the kingdom. Their proposed solutions included new taxes (e.g., on land or cattle to market) and convict labor. By 1862 convicts were building road projects. At some point

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64 J. Bicknell to C. H. Gulick, 16 June 1873; J. Mott-Smith, Minister of Finance, Report, 1872, 6; and John S. Walker, Minister of Finance, Report, 1876, 5.
65 Petition [regarding Hamakua District Roads], 25 July 1871, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1871–1872; and Petition [regarding Kau roads and supervisor], 6 July 1874, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1874–1875, HSA. Both these folders contained numerous petitions and letters from Hawaiians.
66 Appendix to the Report of the Minister of Finance from the Interior Department, 1872, 4-5, in the Minister of Finance, Report, 1872.
67 Lot Kamehameha, Minister of the Interior, Report, 1862, 6, 15; J. N. Travis, letter, 20 December 1862, Interior Department, Box 37, Subject Files, Roads, Hawaii, 1860–1862, HSA. Corvee labor for public projects was used in pre-contact Hawai‘i, but had largely been dropped by the 1850s (Patrick V. Kirch and Marshall Marshall Sahlins, Anahu, The Anthropology of History in the Kingdom of Hawaii [Chicago: University of Chicago Press, 1992], 51, 71, 111,
the road tax was again modified; the commutation rate remained at fifty cents per day. This rate had become virtually useless by 1878 because wages had risen to well above fifty cents a day. The minister of the interior observed that the higher wages prompted many men to choose to pay the commutation rather than work. Many also gambled that if they worked, the days would be short; or if they were lucky, the road supervisor would overlook them on “call days,” and they could evade the labor and/or commutation altogether. The time had arrived, the minister emphasized, to collect all road taxes in cash.68

The legislature supplemented funding, but in the early years, it was insufficient. A $10,000 appropriation in 1875 was, in effect, nothing more than a “reserve fund” to cover the cost of damages from accidents and storms.69 By 1881, however, the largest line item in the kingdom’s budget was for roads and bridges, with $175,000 appropriated.70 In 1882 a two-dollar tax on drays and carts was specifically levied to support road work. Like the road tax, this money was to be spent in the district collected. Curiously, a five-dollar tax on carriages was not designated for the road fund.71

In 1882 SPW Robert Stirling observed, quite practically, other impediments that hampered progress. He surmised that Hawai‘i’s rugged topography and frequently heavy rains meant that, for the time being, “imperfect” roads had to be built until sufficient money could be generated.

Challenges that he failed to mention included building on lava and the destruction from earthquakes and lava (on the Big Island). Stirling suggested

149). Prison labor for road construction was common throughout the world and in the United States. Convict workers were used in many states well into the twentieth century (“Convict Labor on Highways Good Business,” Good Roads, July 1919, 65-72.)
68 Interior Department, Report, in the Minister of Finance, Report, 1878, 9-10.
69 “Appendix to the Report of the Minister of Finance from the Interior Department, 1876,” 12, in Minister of Finance, Report, 1876.
70 Thrum’s Hawaiian Annual, 1881, 51.
71 Kingdom of Hawaii, Laws of His Majesty Kalakaua I, 1882, 71.
that, in the meantime, an engineer be appointed to travel throughout the islands inspecting, directing, and supervising work. This “thoroughly competent” man would manage the road supervisors and accomplish a “vast deal” more than the existing system, in which “a great deal of money [was] frittered away in the hands of incompetent and careless supervisors.”

Minister of the Interior Charles Gulick’s 1886 report emphasized roads and judiciously summarized the kingdom’s challenges since the 1840s. First, he observed that everyone seemed to have an opinion on roads and bridges. Gulick commented that nearly every citizen believed that he knew “quite as much, if not a little more, than his neighbor, with regard to the best measures to be adopted, and being fully satisfied that no Government officer that he ever happened to meet had any ideas or knowledge on the subject at all comparable with his own.” He explained that Hawai’i’s progress had always been hampered by mountainous terrain and deep gorges that isolated many sparsely populated communities. The rainy climate made maintenance difficult, and there had never been enough revenue to properly build the necessary infrastructure.

Gulick concluded that Hawai’i’s predicament continued because the government had never designated an officer(s) to devise a systematic plan of action for constructing permanent highways. Furthermore the kingdom’s “best efforts” had been severely tested by “exceptionally violent storms” and “unnecessarily imperfect work” that necessitated spending all available money on maintenance and repairs rather than building a comprehensive road system. The Hilo District, with at least fourteen new bridges, was representative of Gulick’s goal. These structures had been constructed for “permanence and

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73 Charles A. Gulick, Minister of the Interior, Report, 1886, 16.
safety” and withstood one of the most violent storms in memory. Elsewhere, the storm destroyed many bridges that had been built to lower standards.74

Gulick’s comments about spending money on maintenance and repairs rather than construction was prescient. Violent storms and heavy rain did not just happen in 1886. Throughout this research the sheer volume of newspaper articles and government documents that detailed storm, rain, and flood damage over the years was astonishing. It was obvious that the kingdom was doing the best it could with its limited resources. Oftentimes the government could barely keep up with maintenance and repairs, much less undertake new construction. It did not take much rain to destroy a dirt road, especially if it was a steep slope, or to cause flash floods that washed out timber bridges.

Although Gulick’s descriptions were compelling and accurate, like many government officials and citizens, he dwelled on the negative and failed to recognize that Hawai‘i had made considerable progress since the 1840s. Numerous bridges had been constructed throughout the islands, including in extremely remote locations such as Kīpahulu on Maui.75 Moloka‘i’s first bridge was erected over Wailau Stream in 1878.76 Most of the island’s bridges were simple wood truss construction until the late nineteenth century, but more substantial structures were also built. During the early 1800s suspension bridges, a simple concept that has been used for centuries, were built in the U.S. using chains forged of wrought iron links. A similar suspension bridge was

74 Gulick, Minister of the Interior, Report, 1886, 15-16.
75 John Ray [Rae?] to SPW Metcalf, (illegible date) 1854, noted that the road was “quite passable,” but requested that two Kīpahulu bridges be repaired, Interior Department, Box 43, Subject Files, Roads, Maui, 1851–1858, HSA. These bridges were likely at the “ravines” of ‘Ohe‘o and Koukou’ai, which would have been difficult crossings. Kīpahulu was extremely remote at this time; even in the twenty-first century it takes several hours to reach the area by car from central Maui.
constructed over the Wailuku River in Hilo in 1860. The structure was supposedly strong enough to carry the load of herds of cattle or horses, but it collapsed. SPW Wood noted that its reconstruction served as a lesson to use wire instead of chain.  

The government accomplished major improvements along the Big Island’s rugged and difficult-to-access Hāmākua Coast, where steep sea cliffs and deep gorges challenged road engineers and builders. One pleased citizen proclaimed that Honoli‘i Bridge was "the greatest boon the travelling community have received from Govt. [sic] for a long time and all are loud in its prases [sic], it is a splendid Bridge, [and] a great achievement." Clarence Dutton declared that an overland journey along this coast would have been "quite impossible, had not a fair horse-trail had been excavated with much labor and expense." He noted that a man could easily ascend and descend the steep, zigzag track through more than sixty abrupt ravines in thirty miles, but pack animals traversed the path with "great labor and exhaustion." Hāmākua’s topography was nevertheless being tamed: in 1886 Gulick reported that a wagon road ran nearly the entire length of the coast.  

On O‘ahu, a horse trail was completed on the formidable Nu‘uanu Pali in 1846, and a wagon road surveyed in 1882. Modern machinery and road

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79 Ana, Minister of the Interior, Report, 1846, 4-6; and William N. Armstrong, Minister of the Interior, Report, 1882, 15.
surfacing methods (macadam) were being used to improve roadways in the Honolulu district.\textsuperscript{80}

\textit{By the Bayonet}

\textit{Haole} businessmen forcibly imposed the “Bayonet Constitution” on the Hawaiian monarchy in 1887, creating what historian Noenoe Silva labeled “an oligarchy of the haole planters and businessmen.” Osorio maintained that it destroyed the king’s authority, disenfranchised most Hawaiians, and created a “special electorate” comprised of \textit{haole} property owners that enhanced their control of the executive and legislature.\textsuperscript{81} Lorrin Thurston, who helped draft the document and was the chief conspirator in the monarchy’s demise, became minister of the interior in 1887. During Thurston’s tenure, tourism became an incentive for road construction and the administrative system was reorganized, albeit with limited success. Thurston only served until June 1890, but he laid the foundations for a road program that remained until the organization of Hawai’i’s U.S. territorial government in the early 1900s.

In his first report as minister of the interior in 1888, Thurston asserted that roads should be constructed to attract tourists, thereby enhancing Hawai‘i’s economy. He energetically promoted roads as commercial investments that would recoup their costs through visitor revenues. Proceeds from the land opened by new roads, whether for house lots or agriculture, could also be used to help finance this infrastructure.\textsuperscript{82}

\textsuperscript{80} S. G. Wilder, Minister of the Interior, \textit{Report}, 1880, 34-35. Stone crushers and road rollers were purchased for O‘ahu to construct macadamized roads, which were necessary due to the “constant wear from the large number of carriages.”
\textsuperscript{81} Noenoe K. Silva, \textit{Aloha Betrayed}, 126; and Osorio, \textit{Dismembering Lāhui}, 240, 243. Osorio credited historian Ralph Kuykendall for the term “special electorate” to describe the Bayonet Constitution’s highly restrictive voting system.
\textsuperscript{82} Lorrin A. Thurston, Minister of the Interior, \textit{Report}, 1888, 206-207; 1890, 341-343.
Thurston initially suggested improving Volcano Road and building a thoroughfare to the summit of "Punchbowl Hill," believing that these byways would advertise Hawai‘i and attract foreign visitors. He anticipated that Punchbowl, with its "unsurpassed view," had the potential to become one of Honolulu’s major destinations. On the Big Island, the volcano was the nation’s "great wonder and attraction," and Thurston speculated that a good connection would transform it into "a mine of wealth." "With such a road," he asserted, "there can be no question that tourist travel would be greatly increased, and the cost of the road soon returned to the country." Thurston vigorously supported tourism, discerning that it had greater economic potential than sugar because a larger percentage of its profits would stay in Hawai‘i, not go offshore to foreign plantation owners.  

Anticipating that his introduction of pleasure roads to scenic attractions would be denounced by naysayers as a "luxury" that wasted money, Thurston emphasized that these byways were a "policy of progress," essential infrastructure that Hawai‘i could not afford to do without. He contended that residents ignored Hawai‘i’s development possibilities and did not realize how much tourists and winter residents added to the islands’ economy. He also surmised that some people "oppose any change just because it is a change." Rejecting this thinking, Thurston emphasized, "This is not a cause for relaxing endeavors for advancement. It is only what is to be expected—one of the inevitable obstacles to progress which has to be met, and which will simply [sic] require a little additional time and effort to overcome." Thurston wasted little time conquering the opposition and achieving his objectives: Punchbowl Road

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was completed in 1890 and Volcano Road, a greater challenge, finished in 1894. **84** Both roads will be addressed in subsequent chapters.

Thurston was not the only member of the haole elite promoting tourism. **85** Thomas Thrum's *Hawaiian Annual* had always published items of interest for visitors, but in 1885, it began a regular feature entitled “For the Information of Tourists.” **86** In 1889 Thrum commenced publication of *Paradise of the Pacific* to make Hawai‘i “better known abroad in the centers of tourist travel” and to also attract investors and home-seekers. Honolulu businessmen organized the Hawaiian Bureau of Information in 1893 to address this important task and secure Hawai‘i’s share of visitor travel. **87**

The *Hawaiian Annual* frequently promoted island thoroughfares. It mentioned the progress in building drives to Punchbowl in Honolulu and on Maui, to Haleakalā and Lahaina. In 1894 it anticipated the completion of the Big Island’s new Volcano Road from Hilo, “on completion of which visitors may drive the entire distance of twenty-nine miles in a carriage, on an easy grade, with as much comfort as can be had on Honolulu’s macadamized streets.” Also

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**85** Historian Christine M. Skwiot asserted that Lorrin Thurston and other annexationists used tourism as a cultural channel to promote annexation (Christine M. Skwiot, *Itineraries of Empire: The Uses of U.S. Tourism in Cuba and Hawai‘i, 1898–1959* [Ph.D. diss., Rutgers, the State University of New Jersey, 2002], 3). Vernadette Gonzalez’s ethnic studies dissertation also includes a chapter on scenic roads and colonialism. Her argument will be considered in chapter four of this thesis (Vernadette Vicuña Gonzalez, *Touring Empire: Colonial Travel and Global Tourism in Hawai‘i and the Philippines* [Ph.D. diss., University of California, Berkeley, 2004], chapter one).

**86** “For the Information of Tourists,” *Hawaiian Annual*, 1885, 74-75. Thomas Thrum began publishing the *Hawaiian Annual and Almanac* in 1875. The title varied over the years, and it was also known as the *Hawaiian Annual and Thrum’s Hawaiian Annual and Standard Guide, Combined with All About Hawai‘i*. The publication will be referred to as the *Hawaiian Annual* in this thesis.

advertised were O'ahu's other scenic byways, including Tantalus, the Pali, and Diamond Head roads.\footnote{88} Thurston insisted that a nation's roads were "a measure of a country's advancement and culture." Recognizing the "immense development" opportunities of agriculture, he supported the construction of belt wagon roads, along with other necessary thoroughfares, to unlock fertile lands on the Big Island and Maui. He planned to build these roads as money became available and recommended legislative funding for both islands. As with tourist roads, he speculated that the commercial success of land opened to agriculture, presumably sugar, would increase the land's taxable value to the extent that road construction would be paid back "tenfold."\footnote{89}

The other significant achievement of Thurston's tenure as interior minister was the administrative changes that emerged from the special legislative session of 1887. The major revision mandated a district road board comprised of three residents, which replaced the road supervisor system. Thurston asserted that the country was "extremely fortunate in the class of men" who agreed to serve on these boards. "In nearly every instance," he continued, "they are from among the most responsible and energetic citizens of the district, and have entered upon the discharge of their duties with an energy and public spiritedness that is refreshing." Thurston claimed that citizens strongly approved of the new boards. He admitted that the system had not been in operation long enough to determine its ultimate success, but it could be amended if needed. Thurston emphasized that "the people" would not, 88 "Retrospect for the Year 1889," Hawaiian Annual, 1890, 98; and "Information for Tourists and Others," Hawaiian Annual, 1894, 138-142. 89 Thurston, Minister of the Interior, Report, 1890, 331-333.
however, consider reverting to the old system. In addition, measures were enacted to protect the road tax by means of a special treasury account.90

In 1890 the road law was again revised, this time providing that road boards be elected by "qualified voters." On the surface this amendment seems odd, since haole had so strongly objected to elected road supervisors in the past. The amendment, however, reflected the spirit and consequences of the Bayonet Constitution. As Osorio observed, the "extremely high" property restrictions "for all intents and purposes eliminated Natives from either running [in elections] or voting."91 Elected road board members then, would support the views and goals of the "special electorate" who voted for them (propertied and mostly haole). The amended law required board members to serve without pay, and allowed them to appoint district road supervisors and have full charge of all labor and finances. Vacancies between elections were to be appointed by the interior minister.92

Several years after road boards became elected offices, Minister of the Interior James King expressed his disappointment with the results. He observed that the law had been modified with the hope that elective road boards would become a more permanent institution; instead, stability remained a problem as few of the elected members chose to serve out their two-year terms.93

The road board members' correspondence indicated that the manner of choosing members was apparently not the problem, but serving without compensation was. John Lydgate of the North Hilo Road Board confessed that he had been paid for simple "engineering." Lydgate advised Thurston of this

90 Thurston, Minister of the Interior, Report, 1888, 202-203.
91 Osorio, Dismembering Lāhui, 243.
92 Laws of His Majesty Kalakaua I, 1890, 172-176.
93 James King, Minister of the Interior, Report, 1894, 181-182.
fact so that he would not “injure his own reputation or bring scandal on the government.” Lydgate and the two other board members had agreed to the compensation because the road board work was time-consuming and difficult. Lydgate remarked that it took him most of a day to travel to a project and return, to “say nothing of patience & long suffering.” He explained:

I believe in spite of my objection to the unremunerative portion of the new law I am as patriotic as most poverty-stricken young men, but to spend a day a week scrambling round in the Hilo jungle & gulches pro bono of such public as passes over our road is more than I can afford. Accordingly the other members, pleased to have me attend to this work, have voted me such compensation for this extra duty—as I considered reasonable & fair. I have put it at $5.00 a day, for what I call “engineering services.” Is this a heinous breach of the law? or will it be condoned in view of special circumstances? I am satisfied that it [is] much better economy for the roads to pay me than to send any one who does not know what is wanted or pay anyone who does.94

Thurston admitted that when the elected road board system was proposed, some had argued against it, noting that no “responsible person would accept the position without pay.” Despite Lydgate’s 1888 letter, Thurston ignored objections, insisting that public-spirited men would help and that there had been no difficulty in finding them, except for a few exceptions in the sparsely settled districts.95

Lydgate continued to serve on the road board and surveyed the Volcano Road in 1890, although it is unknown whether he was paid for this work. He later reported how the new (Bayonet) constitution and its reforms had changed the circumstances in his district. He praised the government for breathing “new life and confidence” into “everyone and everything.” He noticed the optimism in others, too. He enthused:

94 J. M. Lydgate to Lorrin Thurston, 12 April 1888, Interior Department, Box 39, Subject Files, Roads, Hawaii, 1888, HSA.
95 Thurston, Minister of the Interior, Report, 1890, 327.
I find that I myself, under the influence of the new regime am recovering from that state of languid pessimism into which I had fallen of thinking that the country was in the last ditch and not likely soon to get out.... Whether wise in every respect or not the new schemes inaugurated by the government indicate life, progress & growth and must on the whole be conducive to the well being of the country.\textsuperscript{96}

According to Osorio, Hawaiians were certainly pessimistic about their nation's future. He maintained that the constitution was "used to remove the last traces of their honor as a people."\textsuperscript{97}

Another letter shed light on how the unpaid road board members conducted their business. J. M. Horner, chairman of the Hamakua Road Board, wrote to Thurston, apparently to explain why the greater portion of available money was going to board members. They considered improved roads as sufficient pay, but claimed substantial reimbursements for their expenses. Horner emphasized that they had an "enthusiastic interest" in the district's roads and praised Thurston for "wisely" selecting members from the "class of citizens" that included sugar plantation managers. Following Thurston's example, the board hired other plantation managers to superintend the labor and road work on the sections of road near their plantations. Horner reported that citizens were satisfied, declaring that the byway between Hāmākua and Laupāhoehoe was better than it had been in five years. The Hāmākua section of the government belt road was "passable," and the board was pressing ahead with reducing the grades so that wagon travel would continue to improve.\textsuperscript{98}

\textsuperscript{96} Lydgate to Lorrin Thurston, 18 September 1888, Interior Department, Box 39, Subject Files, Roads, Hawaii, July–September 1888, HSA; and Thurston, Minister of the Interior, \textit{Report}, 1890, 262, 327.

\textsuperscript{97} Osorio, \textit{Dismembering Lāhui}, 245.

\textsuperscript{98} J. M. Horner to Lorrin Thurston, 9 April 1888, Interior Department, Box 39. Subject Files, Roads, Hawaii, 1888, HSA. The "grade" is a road's slope and is used to described its steepness; it is usually expressed by stating the vertical rise or fall as a percentage of the horizontal distance.
Despite the *haole* claims of success in reforming the road-building program, evidence demonstrates that many outside their clique were not satisfied. A petition written in Hawaiian and signed by fifty-six people denounced the South Kona road board for not providing public notice of its meetings. The petitioners also grumbled that the board sometimes paid its road workers too much and in other cases, failed to pay them at all. As was typically the case, they complained that funds were misspent and some byways went unrepaired.\(^9\)

Two months later another petition signed by nineteen Hawaiians charged that they had done road work for the public good, but had not been compensated as promised.\(^10\) J. W. Kuaimoku, the road board chair, resigned over the lack of meeting notices and these financial woes. Kuaimoku reported that his unpaid workers had been forced to live on credit at the local store. He claimed that the board's empty coffers prevented him from repairing roads and providing work, which was a disappointment because many men had asked for jobs.\(^11\)

Hawaiians were not the only disgruntled denizens. "Residents and taxpayers" of North Kona, many of whom were stock and dairy ranchers with Portuguese surnames, objected to the fact that the three road board members, whose names were Hawaiian, held additional government posts. They maintained that this violated the spirit of the law. Furthermore, the board had "no experience in the art of road making" and was therefore considered incompetent. While the coastal and beach roads (probably used by Hawaiians) were in good condition, the petitioners noted that the road needed by the

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90 Petition, 21 May 1888, Interior Department, Box 39, Subject Files, Roads, 1888, HSA.
100 Petition, 5 November 1888, Interior Department, Box 39, Subject Files, Hawaii, July–September 1888, HSA.
101 J. W. Kuaimoku to Lorrin Thurston, undated, [March 1889], Interior Department, Box 39, Subject Files, Hawaii, January–March 1889, HSA.
“producers & enterprising part of the population” (themselves) was not receiving appropriate attention. They wanted Thurston to remedy the situation by appointing at least one haole and one Portuguese to the board.¹⁰²

Interior Department records demonstrate that one of the more noticeable enterprises that emerged after 1887 was the increasing collaboration of the government and sugar plantations in road matters. A major impetus for the Bayonet Constitution had been to protect the interests of sugar growers, who were concerned with maintaining the trading benefits they received from the Reciprocity Treaty with the United States.¹⁰³ Interior Department documents clearly indicated that road board members and sugar planters were often one and the same, and they increasingly participated in projects that benefitted plantations.

A typical example of cooperation between plantations and the Interior Department was the erection of bridges. Oftentimes the plantation would notify the government that it wanted a bridge to be constructed on the government road. The Interior Department would investigate the matter and decide on the proposal. If it agreed that a bridge was necessary, the department would build a timber-truss structure in Honolulu, then ship the pieces to the job site for erection by the plantation. The sugar company would supply labor for the construction and sometimes front other costs such as shipping. This trend was evident as early as 1886 when Theo Davies & Co., agents for the Laupahoehoe Sugar Company, contacted Gulick about a bridge for Kaiwilalahilahi Stream on the Big Island. Road supervisor C. N. Arnold, who worried about the existing

¹⁰² Petition, 13 November 1888, Interior Department, Box 39, Subject Files, Roads, Hawaii, July–December 1888, HSA.
structure's imminent collapse, supported the company's request. Gulick's successor approved the proposal, and the bridge was replaced by government-private sector cooperation.104

The trend of government-plantation collaboration accelerated after 1887. Many projects were completed under similar arrangements as that with the Laupahoehoe Sugar Company. Many jobs, however, were blatant examples of the plantations completing projects that managers considered necessary; they then billed the government for the work.

In 1887, Arnold, who was still the chief road supervisor for the island of Hawai'i, submitted a bill to Thurston for unauthorized work completed by Horner. Arnold politely reminded Horner that Thurston had not granted him permission to work on the government road. Arnold reported that the work served only Horner's business, but then he contradicted himself by stating that the general public was "of course benefitted by this work." The project did not provide an additional advantage to the public: Arnold disclosed that a good horse trail already existed; Horner had widened it to accommodate his heavy plantation teams. Arnold concluded that Horner would be "amply repaid" if the government reimbursed him for half of the job's $390 cost.105 No records were located to indicate whether or not Horner was reimbursed.

Horner's invoice was probably not yet settled when Arnold reported the Papaikou Plantation had finished an unauthorized road project, even though he had informed the former plantation manager that there was no money for the job. Arnold noted that the company had improved the grade on the government

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104 Theo Davies & Co. to Gulick, 16 May 1886; Theo Davies & Co. to W. M. Gibson, 20 July 1886; C. N. Arnold to Gibson, 29 July 1886; and F. M. Swanzy, Theo Davies & Co. to Gibson, 21 August 1886, Interior Department, Box 39, Subject Files, Roads, Hawaii, 1886, HSA.
105 C. N. Arnold to Lorrin Thurston, 24 September 1887; Arnold to Horner, 24 September 1887, Interior Department, Box 39, Subject Files, Roads, Hawaii, August–September 1887, HSA; and Arnold to Thurston, 11 October 1887, Interior Department, Box 39, Subject Files, Roads, Hawaii, October–December 1887, HSA.
road, but most of the work was done on a gated road on plantation property so that the company could haul lumber for its construction projects. Arnold suggested reimbursing the company for a third of its costs, which he believed would satisfy them. His correspondence detailed other unapproved jobs for which the plantations wanted reimbursement. Arnold often remarked that this work "purely" served the companies' needs.106

In addition to collaborating on construction, the planters served as banks, advancing the government the money for projects that road boards did not yet have, which would presumably benefit their business. In 1889 John Horner noted that the plantation (perhaps his own company) would loan the road board the money it needed for a bridge until it received its road taxes.107 These projects not only demonstrated the influence of the planters, they were also indicative of the government's continuing financial difficulties, despite the drastic constitutional action taken against the monarchy in 1887. Records showed that not all roads benefited the sugar industry. Volcano Road was originally a "boon" to the Big Island's Ola'a coffee district, even though sugar would later transform and dominate the area.108

**Building Roads under the "Republic" of Hawaii**

Thurston and his conspirators deposed Queen Lili'uokalani and ended the Hawaiian monarchy in 1893. The significant break in Hawai'i's road-building program and administration, however, had already occurred in 1887; few changes resulted from the coup and road work continued in the same manner.

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106 C. N. Arnold to Lorrin Thurston, 3 November 1887, Interior Department, Box 39, Subject Files, Hawaii, October–December 1887, HSA. Other letters in these files (within the folder Roads-Hawaii) also detailed unauthorized work and requests for reimbursement by plantation companies.

107 J. M. Horner to Thurston, 17 April 1889, Interior Department, Box 39, Subject Files, Roads, Hawaii, April–May 1889, HSA.

108 "Retrospect for the Year 1894," *Hawaiian Annual*, 1895, 130-139.
under the provisional, then "republican" government. In 1895, the Hawaiian Annual concluded that the Republic of Hawai‘i’s major focus was rebuilding the government, so that less attention was given to public works. Road projects nevertheless remained important, with agriculture the primary goal and beneficiary.

Minister of the Interior James King re-emphasized the government’s commitment to agriculture in 1895, noting, "No improvement seems more important and no investment more profitable than good roads through fertile districts." King asserted that there were probably more roads built from 1893 to 1895 than during any other two-year period in Hawai‘i’s history. He cited the fine work of engineer William Bruner, who had surveyed a number of roads in the islands, including a wagon road to “girdle” the Big Island. Thrum’s Hawaiian Annual commended the “republic’s” efforts to build good roads on the neighbor islands, noting that these were being “pushed with vigor.”

King’s recognition of Bruner reflected one of the most important advances of the 1890s, the increasing reliance on engineers. It is unclear exactly when engineers began surveying and building Hawai‘i byways. William Webster, mentioned earlier, was considered an “engineer” in the 1850s and had done some surveys and other work, though nothing was located to indicate whether he was trained as an engineer. Several “engineers” surveyed the Pali Road, as will be discussed in chapter three. It otherwise appears that many roads were designed and work supervised by whomever was available, often road board members. Many of these men may have had some type of engineering experience in their plantation work.

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109 Hawaiian Annual, 1895, 130. A provisional government was installed after the Hawaiian monarchy was overthrown in 1893; the “Republic” of Hawaii was established in 1895 and existed until the islands were annexed to the United States in 1898.
110 King, Minister of the Interior, Report, 1895, 56-58.
111 “Retrospect for the Year 1895,” Hawaiian Annual, 1896, 143-144.
Qualified engineers began working for the DPW in the mid-1890s. No information was located to determine Bruner's training, but Interior Department documents demonstrated he had been surveying and planning roads from as early as 1889. Hugh Howell, who held an engineering degree from the University of California, worked for the government starting in 1896. Reflecting back on Hawai‘i road building in 1913, Howell credited “progressive” road boards with continuously improving the islands’ byways. He praised the “beneficent” central government (the “republic”) for providing rock crushers and steam rollers for the “country” districts about 1895. Unfortunately, much of the machinery was never used and was ruined after standing idle and exposed to the elements. Some of the road boards were apparently not as “progressive” as Howell claimed.

Engineer Guy Gere proclaimed that Hawai‘i was no “laggard” in building good roads. According to him, road construction in the islands began in 1893, thereafter, the government had “undertaken some of the boldest projects of wagon road construction to be met with anywhere in America.” His “notable examples” were the Pali road, the Hāmākua Coast road, and unnamed Maui byways. It is not known when Gere began working in Hawai‘i, nor whether his comments were first-hand experience or hearsay, as his discourse was delivered in 1906. Gere probably had some formal training, since he served as Oahu County Engineer after 1905.

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112 Correspondence dating to as early as 1889 and into 1897 in the Interior Department Letterbooks at the Hawai‘i State Archives document Bruner’s many roadwork activities, much of it involving surveying roads. See for example book 42, 6; book 47, 283; book 89, 112; book 74, 23; book 88, 154-155. Bruner surveyed byways throughout the islands, including the Nu‘uanu Pali Road.


The Pacific Commercial Advertiser presented the haole establishment’s opinion of infrastructure accomplishments in 1897. Editor Wallace Farrington claimed that the Nu‘uanu Pali Road on O‘ahu was one of the “most important evidences of progress,” while the work on Big Island byways had been done “at a rate that [satisfied] the desires of the most ardent enthusiasts.” Farrington believed that the intrinsic value of the projects was invaluable for the nation’s future development as it would enable farmers to get their products to market with much greater ease than had been the case on the earlier roads, which at best were “first-class” trails. He specifically commended the government’s policy of carefully planning projects and commencing only those jobs that could be promptly completed. The “republic” was furthermore praised for “sound business methods” that prioritized works that increased the value of adjoining property, thus providing a financial return to the treasury. An “excellent” example was Volcano Road, where land was being quickly “taken up.”

Who Failed to Build the Roads?

Examining the records from the 1840s to 1898 prompts several questions: did the Hawaiian monarchy fail to build a road system, or was a road system underway despite decades of complaints, mostly by haole? If, as Osorio maintains, haole began to dominate the House of Representatives in 1851, and their power increased with subsequent elections and constitutions that allowed them to push their agendas to the forefront, why did they continue to complain about the monarchy’s incompetence in building the roads

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necessary for developing the islands?\textsuperscript{116} Were these *haole* responsible for the perceived failures?

This chapter demonstrates that by the 1850s, foreigners in Hawai’i had specific recommendations about how the government should build roads to facilitate agricultural development. Engineer William Webster, RHAS members, and an array of others complained about the labor tax, road supervisors, and the tax collection system. Reforms were enacted, but the troublesome system, for the most part, experienced little change and failed to satisfy citizens.

Webster, for instance, recognized that many of the problems were due to financial constraints. He recommended a cash road tax as well as legislative funding to supplement inadequate road taxes collected in sparsely populated districts. Insufficient revenue to finance highway projects nevertheless remained the pressing issue. In 1896, the Republic of Hawaii still imposed an inequitable, two-dollar per year road tax that was worked out at the discretion of the tax assessor or road board. Road taxes were still being spent by the district in which they were collected, which was simply not enough in areas with few inhabitants.\textsuperscript{117}

Road boards seemed just as unsatisfactory as road supervisors. After 1887, when Thurston’s road boards assumed control, issues of quality and maintenance remained. In 1892 a major slide on the Pali Road was blamed on faulty construction.\textsuperscript{118} Prisoners on Thurston’s new Volcano Road began fixing rutted sections immediately after the road opened in 1894.\textsuperscript{119} These problems were not necessarily out of the ordinary, but rather the nature of roadwork during that era, especially under difficult climatic and geographic circumstances.

\textsuperscript{116} Osorio, *Dismembering Lāhui*, 56, 66.
\textsuperscript{118} C. N. Spencer, Minister of the Interior, *Report*, 1892, 277.
\textsuperscript{119} King, Minister of the Interior, *Report*, 1894, 61.
Perhaps the only real revision to Hawai‘i’s road administration system was the increasing reliance on loans during the 1890s. As minister of finance in the 1840s, Judd established a policy that government debt should be avoided. The ensuing decades saw some refinement of this rule, but not until the late 1800s were roads and bridges financed by government borrowing. Instead, finance ministers often asserted that loans should be restricted to income-producing public works such as harbors and wharves that collected customs taxes. The general belief, as Minister of Finance Elisha Allen stated in 1855, was “the practical truth in the saying ‘pay as you go.’”

Hawai‘i’s geographical situation was unique, but its methods were not. New York state’s local communities, as historian Michael Fein observed, financed their road projects by the same “fiscally undemanding tax that was paid in labor rather than cash.” Charles Wixom noted that one state governor believed the labor-tax system was a “miserable one,” with work days resembling a social event and full of horseplay. Historian I. B. Holley added that few highways were “consciously constructed” during the late nineteenth century. Most were trails cleared of vegetation and subject to minor improvements by citizens working their taxes out by “a day on the roads.” He described how tax days usually consisted of boys catching butterflies or killing snakes, and men talking politics and telling the supervisor how to do his work. Holley surmised that forty men and boys accomplished about as much work as ten men under a competent foreman. He noted that few supervisors were skilled road builders. Holley quoted a “cynical observer” who commented, “The office of supervisor is one few wish to hold, and it is often the case that a few drinks of whiskey buy

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120 Allen, Minister of Finance, *Report*, 1855, 5.
votes enough to elect a man with no interest in the road and but little sense of judgment.” Holley observed that the only control a supervisor could exercise over his crew was the certificate that the road tax had been worked. This “was a system virtually guaranteeing that rural roads would largely remain mud holes.”¹²³

Even if Hawai‘i did not achieve all that the haole wanted in terms of public infrastructure, the growth of agriculture (i.e., sugar) in the islands certainly was not impeded. Evidence demonstrates that Hawai‘i was making progress in road and bridge building before and after the Bayonet Constitution. Pre-1887 achievements have already been cited. After 1887, reports noted that numerous steel bridges were being erected and new roads throughout the islands being built and improved. Much of the work was done with prison labor and some projects, like the 1898 Pali Road, were built under contract. Completing work with contractors proved to be more efficient than either government-hired day labor or labor taxes. It is unlikely, however, that the general level of achievement was substantially greater than it had been under the monarchy. Much of the progress was indicative of its time and due to improved technology for pavements and bridges. One also wonders whether the more detailed documentation provided by the minister of the interior reports after 1887 do not lead to a misleading impression that more work was being achieved. Was more work being achieved or better reports being written?

The next chapter will demonstrate that Hawai‘i’s road system would continue to be built piecemeal until the federal government became involved in local highways. The administrative organization was revised in 1905, but the great advances of a modern road system would not be achieved until the

Territory of Hawaii received massive federal appropriations. In 1925 the federal aid for highways program was extended to Hawai‘i. Equally important was the extraordinary boost provided from emergency funding during the Great Depression.
Chapter 2

Hawai‘i Drives Its Way into the Union

The seemingly mundane issue of roads helped clarify one of the most important questions of Hawai‘i’s early years as a U.S. territory: what was the territory’s status within the Union? This chapter examines road development and the Territory of Hawai‘i’s path to greater ties with the United States between 1900 and 1941. After Hawai‘i was annexed to the United States, finance and administration remained the road construction program’s most perplexing concerns. The perennial problem of funding was exacerbated by the diversion of Hawai‘i customs collections to the U.S. treasury after 1898. Various solutions were devised during the early 1900s to reorganize a road-building administration that operated more efficiently and economically. Two goals remained from previous governments; the first and most important was to complete a basic road system. In addition, Hawai‘i’s leaders maintained their focus on scenic roads that would attract tourists and help build a new industry. The period’s technical challenges were to transform byways to accommodate the automobile, which meant reconstructing roads to eliminate steep grades and providing pavements that could withstand motor vehicle tires.

Federal financing emerged as an obvious solution to help build territorial highways. For nearly two decades, Hawai‘i officials worked to obtain the federal appropriations that it was entitled to under the terms of its Organic Act.¹ In

¹ Both Hawai‘i and Alaska were incorporated as U.S. territories according to the precedents established by the Northwest Ordinance of 1787. Incorporation implied that Hawai‘i and Alaska would eventually become states. As such, they were guaranteed the same rights as states, including certain federal appropriations (Roger Bell, Last Among Equals, Hawaiian Statehood and American Politics [Honolulu: University of Hawai‘i Press, 1984], 40-41). Alaska and Hawai‘i achieved statehood in August 1959.
1924 Congress passed the "Hawaii Bill of Rights," which finally recognized the territory's right to participate in federal aid programs, including highways, on the same basis as the U.S. states. This action placed Hawai'i on course to develop a modern road system equal to those on the U.S. mainland. This recognition of the territory's economic (and to a lesser extent, political) rights helped facilitate Hawai'i's integration into the Union. Federal relief programs during the Great Depression sustained highway development and relieved unemployment, but also made the territory more dependent on the U.S. Government.

Hawai'i's Roads at Annexation

Daniel Logan, writing for the Hawai'i Department of Foreign Affairs just before annexation, highlighted the islands' attractions for potential visitors, investors, and settlers, hoping to increase its "civilized population." "Public improvements for the past eight or ten years," he observed, "have been nowhere more progressive than in the matter of roads." The Nu'uanu Pali carriage road was noted as the government's greatest public works achievement for 1898.²

Logan's publication described road conditions throughout the islands. He did not emphasize belt roads, but his account conveyed that the construction of this much-desired system continued to evolve. The island of O'ahu was advertised as a pleasure for travel, both on bicycles, which enjoyed great popularity at the time, and in carriages. The belt road nearly encircled the island, with only a few connections on eastern O'ahu remaining to be built. Scenic carriage roads transported tourists to the Nu'uanu Pali as well as to the

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² Daniel Logan, *The Hawaiian Islands, a Hand Book of Information Issued by the Department of Foreign Affairs* (Honolulu: [Hawaii Department of Foreign Affairs], 1899), n.p. 70
summits of Punchbowl and Tantalus. In addition to these thoroughfares, private enterprise was building a belt railroad, which promised even more access to scenic attractions.³

On the Big Island, where travel had always been severely hampered by geography, apparent advances allowed Logan to claim that roads were "revolutionizing" communication. Although some "adventurous exploration" still required travel by horseback, the island's principle routes could be toured in four-wheeled coaches or licensed hackney carriages of "moderate fare." Rapid progress was being made in constructing the island's belt road, although several short gaps had yet to be built. The route, when completed, would "girdle" the island with "a carriage road of equal style to the best country roads of the [United] States." Visitors could approach Kīlauea Volcano by carriage along the belt road from either Pāhala or Hilo. Even the byway's tortuous Hāmākua Coast section had been dramatically improved. Logan observed,

Yawning gulches that have caused accident and life insurance policies to be among the first thoughts of the traveler having to cross them, in following the rugged trail that used to belie the name of road, are now traversed by carriage roads, of comparatively easy grade, laid out by civil engineers. Some sections are notable feats of engineering, like the Nuuanu Pali road on Oahu, also just as thrilling to the soul amenable to sublimity, and just as safe to travel.⁴

One of these engineering feats was most certainly the trail ascending the Laupāhoehoe Pali, which connected the Laupāhoehoe community to the belt road and was constructed by Wilson and Whitehouse, builders of the Nu'uanu Pali Road. The Big Island's road construction program was being "vigorously pushed" to attract settlers, occupy land for cultivation (coffee and sugar), and

afford marketing facilities. As on O'ahu, railroads were part of the progressive transportation achievements.\(^5\)

The island of Maui had realized a “fair network” of roads by the turn of the century, “in spite of great topographical recalcitrancy.” By 1897 the notorious Lahaina Pali track, the section of belt road described in chapter one, had been transformed from a “cruel experience” into one of Maui’s most exceptional accomplishments, a carriage thoroughfare over the mountains that connected isolated West Maui to Wailuku. Logan did not, however, mention Maui’s major road-making obstacles, including the precipitous coastal areas of East Maui (to be discussed in chapter four) and Kahakuloa in West Maui.\(^6\)

Benefitting from its smaller size and less extreme topography, Kaua‘i had earned the reputation of having the best roads in the Hawaiian Islands by the 1890s. Stagecoaches and “elegant private equipages” smoothly rolled over Kaua‘i thoroughfares. Like other writers, Logan observed that travelers experienced no trouble getting about on “the garden isle.” Enthusiating that Kaua‘i was an “intensely civilized island,” he commented that steel bridges had been built to meet residents’ high standards.\(^7\)

Even though they were seldom visited by outsiders, Logan reported that the smaller islands in the Hawaiian chain were also making progress. Moloka‘i had good roads, “what there are of them,” and with sugar plantations developing, more fine thoroughfares were anticipated. Both Ni‘ihau and Lanā‘i

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were “private, pastoral preserves,” where byways were built for the convenience of the ranching proprietors.\textsuperscript{8}

\textit{The Interim Years: Improving on the “Republic”}

Ralph Kuykendall and A. Grove Day noted that the Republic of Hawaii was a “kind of interim government.” Its purposes were to “keep the way clear for annexation” when the U.S. was ready to consider the issue. Hawai‘i’s strategic significance during the Spanish-American War motivated the U.S. Congress to annex the islands by means of a joint resolution (requiring only a simple majority to pass), which was approved by President McKinley in July 1898. Although Hawaiian sovereignty was immediately transferred to the United States, the Territory of Hawaii government was not organized until Congress passed the Organic Act in 1900.\textsuperscript{9}

During an interim period between annexation and the establishment of county governments in 1905, some existing offices continued, including road boards. Other agencies were abolished in 1900, including the Department of the Interior and its minister, which were replaced by the Territorial Department of Public Works (DPW), headed by the Superintendent of Public Works (SPW).\textsuperscript{10} Although the DPW’s progressive policies achieved some success, many of the financial and administrative challenges remained. The most significant consequence of annexation, which hampered all development and

\textsuperscript{10} John A. McCandless, Superintendent of Public Works, \textit{First Annual Report of the Superintendent of Public Works to the Governor of the Territory of Hawaii for the Year Ending December 31st, 1900}, 1, 13, Hawaii State Archives (HSA), hereinafter cited as SPW Report. The DPW was charged with a variety of public infrastructure tasks, including roads, harbors, wharves, and buildings.
which will be examined later, was the diversion of Hawai‘i’s customs collections to the U.S. Government.

SPW reports during the territory’s early years indicated that even though the mechanisms for road development were not completely transformed, the department gained some momentum. The law required road boards to continue as they had prior to annexation, with members retaining the authority to prioritize projects, hire labor, and spend road taxes. The SPW assisted the boards with engineering, design, and specifications.11

Records demonstrated that the SPW wanted to professionalize the department, primarily by relying on engineering expertise, which had begun to a certain degree during the republic. William Bruner, with his extensive experience surveying and superintending Hawai‘i road projects, was designated the DPW road engineer.12 Office procedures were improved, with Assistant SPW William Rowell, a civil engineer and former SPW, praised for instituting a “high order of system and business methods.” Annual reports chronicled in great detail not only the projects completed, but the tremendous need for road improvements in the territory. Rowell emphasized that financial problems persisted because the legislators failed to appropriate enough money to complete work, which included new roads and numerous bridges, basic maintenance, and repairs necessitated by storm damage, neglect, and routine deterioration. The DPW nonetheless pressed ahead with road and bridge construction, executing 250 plans in 1902. Strict planning, filing, and reviewing

11 Territory of Hawaii, Department of Public Works, Instructions to Road Boards and Summary of the Laws Relating to Roads and Bridges, Hawaiian Islands, 1900,1-6, University of Hawai‘i-Mānoa, Hamilton Library, Hawaiian Collection.
12 McCandless, SPW Report, 1900, 197.
methods were credited with helping to complete all work within project
estimates.\textsuperscript{13}

To handle the great volume of jobs, SPW Charles Holloway appointed an
engineer for each island to conduct general supervision over road programs.
This arrangement allowed him to remain in Honolulu and direct the DPW, yet
maintain close contact with work around the islands without “personal
investigation.” Holloway was adamant that decisions be made by his
engineering force, not the laymen serving on road boards. He wanted
“competent” engineers to survey new byways and bridges, and recommended
that modern technology, especially concrete-arch bridges where suitable, be
employed to achieve “permanent” improvements. A major focus was to
modernize the main roads to accommodate carriages and the newly introduced
automobile.\textsuperscript{14}

Statistician and historian Robert Schmitt noted that auto sales and
service companies were operating in Honolulu in 1903, with 125 motor cars
reported in the islands by 1907.\textsuperscript{15} These vehicles required wider roads than
horses and could not negotiate grades much greater than six percent, which
necessitated reconstructing many routes to avoid steep slopes. More DPW
work was completed during 1905 than in any preceding year, with 139 contracts
finished and ninety-one underway. Investigations and cost estimates for the

\textsuperscript{13} James H. Boyd, \textit{SPW Report}, 1902, 23-26, 45; Marston Campbell, “Honolulu Road
in \textit{SPW Report}, 1900, 195-208. The 1902 \textit{SPW Report} was extremely informative: more than
100 pages of information from Assistant SPW Marston Campbell, 45-146; "bureau" reports from
various districts, 23-26; road board chairmen’s reports, 31-44; a list of contracts, 37-40; and a
list of employees by nationality, 41-42.

\textsuperscript{14} C. S. Holloway, \textit{SPW Report}, 1904, 70-73; 1905, 4; \textit{Report of the Governor of the
Territory of Hawaii to the Secretary of the Interior}, 1905 (Washington: GPO, 1905), 37-38,
hereinafter cited as \textit{Governor’s Report}; and C. S. Holloway to Carter, 25 February 1905,
George Carter Collection, Gov 2-4, Territorial Departments, Public Works, January–May 1905,
HSA.

\textsuperscript{15} Robert C. Schmitt, “Automobile Ownership in Hawaii Before 1931: Dates and Data,”
legislature were prepared on time, and projects were reportedly built to a high standard.\textsuperscript{16}

The SPW's interest in closely monitoring work was warranted. A series of letters exchanged between Governor George Carter and Puna Road Board Chairman F. B. McStockler, an Olaa Sugar Company manager, demonstrated the enduring problems with road boards and that the territorial governor was determined to change the way Hawai'i did business. Plantation managers still dominated the boards and persisted in abusing the system. Carter appreciated the volunteer boards' "exceptional work," but wanted them to "see to it that the atmosphere is cleared of all taint of graft."\textsuperscript{17}

The issues culminated in 1903 when SPW Holloway refused to reimburse McStockler for unauthorized road work. Holloway mildly scolded McStockler, a businessman who should have known better. McStockler then complained to Carter, explaining that his Volcano Road project had been "generally" approved by Holloway's predecessor and had (of course) been completed in the "public interest." He seemed astonished that anyone would question his judgment, considering how important Volcano Road was to the territory, not just to the Big Island (and coincidentally Ola'a). McStockler objected to Holloway's tone, noting that the public benefit was more important than a "petty despot possessing temporary authority."\textsuperscript{18}

Other than McStockler's refusal to relent on the matter, this situation was no different than it had been under the republic. Governor Carter's response,

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\textsuperscript{16} Holloway, \textit{SPW Report}, 1905, 71, 74.
\textsuperscript{17} F. B. McStockler, Olaa Sugar Company, Ltd., to George R. Carter, 31 December 1903; and George Carter to F. B. McStockler, 26 December 1903 and 17 May 1904, Carter Collection, Gov 2-5, Territorial Departments, Road Boards, HSA.
\textsuperscript{18} C. S. Holloway, SPW, to F. B. McStockler, 8 December 1903; and F. B. McStockler, Puna Road Board, to George Carter, 14 December 1903, Carter Collection, Gov 2-5, Territorial Departments, Road Boards, HSA.
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however, was a step in a new direction. He politely but firmly informed McStocke in a six-page letter that he intended to bring the territory’s finances under control and end the practice of reimbursements for unauthorized work. Placating the plantation managers, he acknowledged their efforts had benefitted Hawai’i despite the “undeserved criticism” that they ruled the road boards. Carter astutely observed that the managers were “usually men of forceful character” that resented “control of any kind” and “very naturally” believed themselves to be the “sole judges of what [was] best for the Territory.”

Carter was nevertheless dismayed by the “laxity” as to what Hawai’i residents considered “proper.” He observed conflicts of interest and disapproved of board members who supported their own agendas. Carter remarked that despite McStocke’s claim, he had maintained his stretch of belt road, but “simply abandoned” and “sacrificed the interests of the Government” on the section near Volcano House, which was an important tourist destination.

Carter was Hawai’i’s second governor and had his work cut out for him. He attempted to guide the territory through its adjustment to the American system and get lawmakers to seriously deal with the issues. Unapproved expenditures were growing at an “alarming rate.” In 1901 the legislature appropriated $79,119 for unpaid bills; the next year nearly $245,000. The governor was determined to tackle the abuse. First, he rebuked McStocke for his “entirely uncalled for” remark about petty despots and faulted “public men” (like McStocke) who blamed the legislature for Hawai’i’s difficulties. Carter

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19 George Carter to F. B. McStocke, 26 December 1903, Carter Collection, Gov 2-5, Territorial Departments, Road Boards, HSA.
20 George Carter to F. B. McStocke, 17 May 1904, Carter Collection, Gov 2-5, Territorial Departments, Road Boards, HSA.
urged them to instead be good citizens who supported the government in wisely using resources. He subsequently reduced departmental budgets, and most of the road boards "immediately retrenched," although some (probably Puna) appealed the funding cuts.\textsuperscript{22}

Businessmen were not the only party at fault. Carter concluded that their attitude had "grown up through the fact that the Legislature has been exceeding lenient...in the passage of deficiency appropriations." He anticipated that if the legislature failed to impose discipline, the practice of compensation for unauthorized projects would spread beyond just road projects. In addition, rewarding unauthorized work was unfair because it penalized road boards who had observed the rules and might encourage them to also do as they pleased.\textsuperscript{23}

Although the amount McStocker demanded was inconsequential, Carter established a precedent and supported Holloway’s denial of the reimbursement. Carter challenged McStocker, "Do you think the large industrial enterprise of which you are the manager could be the success it is with affairs conducted in like manner?" Despite this, McStocker continued to press the issue.\textsuperscript{24} In 1905 Carter claimed that his policy was effective, with the legislature and heads of departments displaying "good judgment" in curbing the bad habit of exceeding appropriations.\textsuperscript{25}

Carter’s attempts to establish the proper administration of finances was commendable, but he was also part of a new political process that introduced a less meaningful element into the road boards and local governments. Ralph Kuykendall and A. Grove Day observed that annexation brought the Republican

\textsuperscript{22} George Carter to F. B. McStocker, 26 December 1903, Carter Collection, Gov 2-5, Territorial Departments, Road Boards, HSA.
\textsuperscript{23} George Carter to F. B. McStocker, 26 December 1903.
\textsuperscript{24} George Carter to F. B. McStocker, 26 December 1903.
\textsuperscript{25} Governor’s Report, 1905, 16.
and Democratic political parties to the islands, and the Republican Party achieved dominance by the early 1900s. They pointed out that the governor, as an appointee of the U.S. president, was not always a "barometer of local politics," but Carter and his successor, Walter Frear, both Republicans, certainly were.²⁶

Governor Carter's papers made it clear that party politics superseded one's plantation connections as the primary qualification for official appointments. His designates to various positions were "Republicans in good standing."²⁷ It mattered very little, however, as haole was generally synonymous with Republican. A folder of correspondence in the Hawai'i State Archives chronicled sugar baron and territorial senator H. P. Baldwin's attempts to obtain money for Maui roads that would not only benefit plantations, but also convince native Hawaiians who were "sitting on the fence" to become loyal Republicans. Carter indicated that he endorsed using infrastructure to reward Republican districts, but he was not convinced that it was a wise investment that would attract voters to the party. Disagreeing with Baldwin, Carter speculated that the "fence sitters" might work the party for their own interests rather than become loyal members controlled by the party.²⁸

²⁶ Kuykendall and Day, Hawaii: A History, 195-196, 198-199. Territorial governors, while appointed by the U.S. president, had to be island residents. Roger Bell pointed out that the F. D. Roosevelt and Truman nominees were "nominally Democrats," as the prevailing political influence was based on skin color (haole), and that the local political powers exercised great influence on the president's nominations, no matter which party was in power in Washington (Bell, Last Among Equals, 50).
²⁷ Carter to Holloway, 13 January 1905, Carter Collection, Gov 2-4, Territorial Departments, Public Works, January–May 1905, HSA. Maui's Republican Party members were actively involved with road board matters, with many of their letters written on party letterhead endorsing Republicans (Department of Accounting and General Services, DAGS 7-10, Public Works, Maui County, HSA).
²⁸ H. P. Baldwin to Carter, 22 February 1904; Carter to Baldwin, 2 March 1904; Baldwin to Carter, 12 March 1904; Baldwin to Carter, 25 March 1904; and Carter to Baldwin, 16 March 1904, all documents in Carter Collection, Gov 2-8, Misc., Maui: Roads, political affairs, etc., HSA.
Although the 1893 overthrow had in part been precipitated by what its enemies had viewed as the monarchy's wasteful spending and deficits, the episode with McStockeer demonstrated that the republic had failed to achieve a stable financial system. Despite Carter's efforts to clean up the system, the sugar industry and its managers, who were "Republican in good standing," would remain an influential force to be reckoned with. The recently organized territorial government and its officials, however, became a new counterpart to the plantations' long-standing economic and political power.

Shifting Responsibilities

In his 1905 annual report to the U.S. Secretary of the Interior,29 Carter asserted that the greatest change of the year was the introduction of county governments. This local institution was similar to those in the U.S. states, and according to Kuykendall and Day, strongly supported by neighbor islanders, who were presumably seeking greater autonomy from the Honolulu-based territorial authority. Carter noted that Hawai‘i’s counties were in an awkward situation: they assumed many duties formerly handled by the central government (the monarchy, republic, then territory), including most road building, but had no power to tax. Kuykendall and Day asserted that the division of functions and adjustments of the financial arrangements were a continuing problem.30

The SPW reported that the County Act "greatly modified" and reduced his role once the counties became responsible for building and maintaining

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29 The U.S. Department of the Interior was responsible for administering U.S. territories.  
30 Governor’s Report, 1905, 6; and Kuykendall and Day, Hawaii: A History, 197. Even though the counties assumed control over most roads after 1905, the DPW built byways for the territory's homestead program and occasionally constructed thoroughfares such as Volcano Road from Hilo.
most of Hawai‘i’s roads. Each county’s Board of Supervisors (BOS) decided on and prioritized projects, with the SPW approving the “location, grade and method of and material to be used in the construction” of byways.\textsuperscript{31} Most of the county governments employed a county engineer, which further reduced the reliance on the SPW.\textsuperscript{32}

Without the power to tax, money persisted as the major factor limiting the construction of roads, just as it had been for previous governments. An annual road tax of two dollars on males aged twenty to sixty years was imposed and collected by the territory for the counties to fund roads and bridges. The taxes were insufficient, therefore county governments were forced to rely on bond issues.\textsuperscript{33} This was not a simple process, since loans were regulated by the Organic Act. The territory and the counties could choose projects, but the work and loans had to be approved by the legislature, governor, and U.S. president. In addition, debt was limited to a percentage of Hawai‘i’s assessed property values.\textsuperscript{34}

Carter’s files illustrated this financial arrangement. In 1907 Maui BOS Chairman Henning requested that Acting Governor Atkinson transmit the county’s loan request to the president for approval. Carter had vetoed the loan on technical terms, but Henning asserted that the governor supported the

\textsuperscript{31}SPW Report, 1905, 4-5.  
\textsuperscript{32}Governor’s Report, 1909, 31. The BOS usually employed a county engineer, especially Maui, Kaua‘i, and O‘ahu. Hawai‘i County debated the issue and sometimes hired an engineer, but in the early years of county government, it did not appear to be standard practice. As examples, Hugh Howell was the Maui County Engineer on and off from 1903 to 1911 (John William Siddall, ed. Men of Hawaii, vol. 1 [Honolulu, Territory of Hawaii: Star-Bulletin, Limited, 1917], 211). Joseph Moragne was Kaua‘i County Engineer, 1907–1923 (“Līhuʻe Man Dies in Texas Crash,” Honolulu Star-Bulletin, 29 January 1973). Guy Gere was the O‘ahu County Engineer for at least 1907–1908, perhaps longer (Guy Gere, “Road Construction in the Territory of Hawaii,” Press Bulletin No. 13, Hawaii Engineering Association, 1907, 1, at the University of Hawai‘i-Mānoa, microfilm V51598; and G. H. Gere, “The Roads of Hawaii,” Hawaiian Forester and Agriculturist, October 1908, 225).  
\textsuperscript{33}Governor’s Report, 1908, 24; 1910, 10.  
\textsuperscript{34}Governor’s Report, 1905, 16-17; 1906, 22.
project’s merit. The legislature had overruled Carter’s veto, so Henning was apparently moving ahead with the process. He assured Atkinson that Carter would concur that Maui’s belt road was appalling. It “abound[ed] in such monstrosities as 20% grades” and was so impossible to traverse that the county rented public access rights to the plantation’s ditch trail.\(^{35}\)

Henning emphasized that Maui County could “well afford” the debt and that the BOS was determined to build the belt road, even if it had to be done piecemeal (which it was). He reassured Atkinson that county officials were capable of completing the work, having hired a civil engineer and a road overseer. Financial reports and weekly updates ensured that “close inspection [was] maintained, tending toward maximum efficiency.”\(^{36}\) Henning was obviously referring to East Maui’s belt road, which will be examined in chapter four.

Although the BOS was responsible for public works, the territorial legislature established Loan Fund Commissions (LFC) in 1911 for each of Hawai‘i’s four main counties.\(^{37}\) The LFCs were charged with proposing and choosing infrastructure projects, including roads and bridges. Despite an exhaustive search of government records and other documents, it remains unclear exactly why these commissions were instituted. According to Hugh

\(^{35}\) W. Henning to A. L. C. Atkinson, Acting Governor, 15 May 1907, Carter Collection, Gov 2-6, Counties, Maui: Clerk and Supervisors, Engineer, HSA. Henning’s assertion that Carter was aware of the Maui belt road condition was probably based on Carter’s inspection trips in 1904. While I did not find particular reference to a Maui visit, Carter traveled on the Big Island and Kaua‘i in 1904, see his letters to Holloway 2 February 1904 and 12 May 1904, Carter Collection, Gov 2-4, ‘Territorial Departments, Public Works, November 1903–April 1904; as well as Holloway’s "Report on Work Under the Loan Funds," 12 May 1904, in the same box of records, folder for May–July 1904, HSA.

\(^{36}\) W. Henning to A. L. C. Atkinson, 15 May 1907, Carter Collection, HSA.

\(^{37}\) Hawai‘i has five counties: Kaua‘i, City and County of Honolulu (until 1909 it was O‘ahu County), Maui, Hawai‘i and Kalawao. Maui County is comprised of the islands of Maui, Lanā‘i, and most of Moloka‘i. Kalawao County, site of the Hansen’s disease settlement, is located on Moloka‘i, and was placed under the Territorial Board of Health (Governor's Report, 1909, 12).
Howell, an engineer with considerable experience in Hawai‘i, the 1911 legislature established LFCs to handle the extensive loan program that it authorized that year. He claimed that the commissions' "theoretical" benefit was that the community's "best men" administered project funding "without regard to party politics" because they were appointed by the governor.\(^{38}\) It is unclear why Howell believed that men chosen by a political appointee, the governor, would act "without regard to party politics."

Governor Frear's 1911 message to the legislature may shed some light on why LFCs were introduced. He asserted that there had been little progress in building public improvements during recent years. As a result, there was a "pressing need" to construct wharves, waterworks, buildings, roads, and other infrastructure. Frear noted that the counties had spent large amounts on byways, but their "comparative poverty" could not fund all their needs, so he recommended issuing bonds on a larger scale. Frear emphasized the importance of working "wisely and economically," while also ensuring "proper methods of construction and maintenance." Furthermore, the governor wanted to guarantee that officials had no conflicts of interest when issuing contracts. Frear was, however, concerned that the additional levels of government increased the cost of doing business, thus he aimed to "clean up and straighten out" the division of functions between the territorial and county governments.\(^{39}\)

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\(^{38}\) "Hugh Howell's Paper was Brilliant Effort," *Maui News*, 27 September 1913. In 1914 a City and County of Honolulu Loan Fund Commission report noted that the commissions were authorized by Act 166 of the Session Laws of 1911. While this law authorized public improvements, it made no provision for Loan Fund Commissions (Territory of Hawaii, *Laws of the Territory of Hawaii Passed by the Legislature at its Regular Session*, Act 166, 1911, 271-273). An extensive search of legislative and executive records at the Hawai‘i State Archives and State of Hawai‘i Legislative Reference Bureau, as well as newspaper research, resulted in no documents that explained the creation of these loan fund commissions.

\(^{39}\) Walter Frear, "Message to the Legislature of Hawaii," 1911, Walter Frear Collection, Gov 3-6, Legislature, unlabeled folder, HSA.
Although the LFCs would seem to add another layer to the bureaucracy, they were likely instituted as a means to efficiently and economically expedite projects by ensuring proper engineering standards and enhancing territorial-county cooperation, especially since the counties had no authority to impose taxes or issue loans. Each LFC was comprised of the SPW, representing the territory, along with the BOS chairman and three local individuals appointed by the governor. Duties were clearly divided, with the BOS chairman and citizen members prioritizing and proposing projects desired by their community. The SPW, an engineer appointed by the governor, ensured that professional standards in both engineering and finance were observed. The commission also facilitated project construction. Economy was achieved because the territory issued all the bonds, both for its own work and for that of the counties, which resulted in lower rates of interest. The counties reimbursed the territory for their bonds.\(^{40}\)

Hawai‘i may have been emulating the example of some U.S. states by implementing a commission system. Even though LFCs were in charge of all types of infrastructure, highway commissions were common in nineteenth-century America.\(^{41}\) Hawai‘i was unusual in that the legislature handed the responsibility for road construction and funding to local county governments after 1905. Historians Bruce Seely and Michael Fein demonstrated that the tendency during the early 1900s was for more rather than less state (in

\(^{40}\) Governor’s Report, 1911, 65; 1912, 12; 1913, 17. In 1911 when the LFCs were organized, the SPW was Marston Campbell, who had been a consulting engineer as early as 1903 with the DPW (Carter Collection, Gov 2-4, Territorial Departments, Public Works, November 1903–April 1904, HSA).

Hawai‘i’s case, territorial) involvement. The movement towards greater state association began in the U.S. in 1893, and by 1905 fourteen states had highway commissions. Hawai‘i instead moved in the opposite direction by giving more responsibility, but not funding, to local government agencies.

In some respects, LFCs were similar to the former road boards. The SPW was in charge, with local citizens prioritizing projects. A major difference was that LFCs had the means to fund projects, and the territory’s oversight ensured that they adhered to budgets. Numerous tables in the SPW reports during the 1910s showed the projects, budgets, and expenditures, which seemed to indicate that the system was working.

Despite Howell’s claim that LFC projects were administered “without regard to party politics,” Frear’s correspondence showed that the LFCs were primarily Republican and involved in agriculture. Like the road boards, LFC membership was dominated by haole businessmen, many of whom were plantation men. These individuals, like their predecessors on the road boards, supported projects that benefited their personal interests. On Maui, agricultural activities were not limited to sugar; some LFC members invested in rubber. At the suggestion of Republican LFC member William Pogue, “prominent citizen” R. A. Wadsworth was appointed to the Maui commission in 1912. Wadsworth was a “solid” man “quite heavily invested” in Nāhiku rubber plantations, which was quite remote and happened to need a road.43

42 Fein, Paving the Way, chapters two and three; and Bruce Seely, Building the American Highway System: Engineers as Policy Makers (Philadelphia: Temple University Press, 1987), 12, 15, 34. Seely noted that New Jersey pioneered state aid for roads in 1892, followed by Massachusetts the following year.
43 William Pogue to Walter Frear, 3 August 1912; and Walter Frear to R. A. Wadsworth, 3 September 1912, Frear Collection, Gov 3-3, Loan Fund Commissions, Territorial Departments, Loan Fund-Maui, HSA.
In another example of politics, Howell, a Republican who was both the LFC and Maui county engineer, alarmed party members when he resigned to accept a higher-paying job with a contractor. Divulging the matter to Frear, Pogue anticipated, "It would be an awful 'knock' to our Commission and to the Republican [sic] Party of Maui to have [Howell] resign and enter the employ of a successful bidder of work for which he drew up the plans and specifications and was a member of the Commission at the time of the award of the contract."\(^{44}\) This may have been an example of the conflict of interest that Frear had referred to in his aforementioned message to the legislature.

Howell did not interpret the law as prohibiting him from quitting the commission to accept employment with a contractor, and he believed he had no conflict of interest. He reported other reasons for leaving the LFC, charging that Pogue was a dictator who favored his own projects. Howell disapproved of Pogue’s allocation of funding and hinted that the disagreement was about engineering matters as well as business interests. Howell was perturbed about which portions of the Hāna road ought to have priority. He was irritated that Pogue had shifted work from an engineering survey near Nāhiku (where Howell may have had interests in the rubber industry) to regrading the road near Pogue’s Kailua property (where Pogue probably had business interests). Howell nonetheless delayed his resignation to maintain the appearance of propriety and not "shirk any of the responsibilities of citizenship that may be required of me." A year later, the Maui LFC awarded John Wilson, a Democrat,

\(^{44}\) William Pogue to Walter Frear, 21 August 1911, Frear Collection, Gov 3-3, Loan Fund Commission, Territorial Departments, LFC-Maui, HSA.
a contract to build the road in the rubber district, demonstrating that Republican
politics did not always dominate the commission's work.\(^{45}\)

Despite the politics, Kuykendall credited Frear for governing over a
prosperous era during which he achieved fiscal responsibility and made large
expenditures available for public works, including roads and harbors.\(^{46}\) LFC
work continued under Frear's successor, Governor Lucius Pinkham, but was
interrupted by World War I. As of 1914 the LFCs had expended approximately
$929,000 on bridges and more than fifty-three miles of roads, mostly on O'ahu
and the Big Island.\(^{47}\) The Maui LFC successfully built numerous reinforced-
concrete bridges and a section of the Hāna Belt Road. The Hāna project, as
well as Pinkham's retreat from LFC work after the _Lusitania_'s sinking in 1915,
will be examined in chapter four.

The major shortcoming of the system in the early 1900s was the dual
authority for road construction. Howell criticized the arrangement as
"cumbersome" and divisive, mentioning disagreements between the Maui LFC
and BOS. He observed that "County fathers" (BOS) sometimes disapproved of
a road's location or character, but they had to accept the LFC's decision and
maintain the project after construction. Howell preferred the system instituted

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\(^{45}\) Hugh Howell to Walter Frear, 22 August 1911; Pogue to Frear, 25 November 1912,
Frear Collection, Gov 3-3, Territorial Departments, LFC-Maui, HSA; and Hugh Howell to
Marston Campbell (SPW), 22 August 1911, Department of Accounting and General Services,
DAGS 7-17, Maui Loan Fund Commission, HSA. Howell brought rubber seeds to plant in
started the Koolau Rubber Company on Maui ("Retrospect," _Hawaiian Annual_, 1906, 184-185).
It is unknown how long Howell maintained his involvement with East Maui's rubber industry.
Wilson went on to become one of Hawai'i's most influential Democrats (Bob Krauss, _Johnny
Wilson, First Hawaiian Democrat_ [Honolulu: University of Hawaii Press, Kolowalu Book, 1994]).


\(^{47}\) Caldwell, J. W., "Roads in the Hawaiian Islands," 7 March 1914, TS, Lucius Pinkham
Collection, Gov 4-5, Territorial Departments, Loan Fund Commissions-Hawaii, Kauai, Maui,
HSA.
with the County Act in 1905, with the BOS solely responsible for road work that was subject to territorial inspection and audit.\textsuperscript{48}

_The Territory's Long Drive for Federal Aid_

Hawai‘i’s financial situation was radically altered by annexation. At that time, Hawai‘i was $4,214,000 in debt, of which approximately 75 percent was assumed by the U.S. government. Customs collections, worth more than $1 million annually, were subsequently diverted to Washington, leaving little revenue to fund territorial programs.\textsuperscript{49} As early as 1904 island leaders began seeking federal aid, emphasizing that Hawai‘i paid substantially more in taxes than was returned in the form of benefits. Officials recognized emerging trends on the U.S. mainland, including the states’ increasing appeals for federal funding for highways. When the efforts to obtain federal road aid failed, they requested money for a more limited project, a military road around O‘ahu. This argument did not succeed, and by the early 1920s, the territory bolstered its claim by affirming that Hawai‘i was an “integral” part of the United States and was therefore entitled to appropriations on the same basis as the U.S. states.

The Hawaii Bill of Rights, the document that convinced Congress to grant federal appropriations to the Territory of Hawaii in 1924, has been peripherally treated by several historians. Roger Bell’s _Last Among Equals, Hawaiian Statehood and American Politics_ accented the bill’s economic significance. Kuykendall and Day briefly mentioned the topic. Both studies credited Governor Wallace Farrington for pressing the territorial legislature to pass this

\textsuperscript{48} “Hugh Howell’s Paper was Brilliant Effort,” _Maui News_, 27 September 1913.

\textsuperscript{49} _Governor’s Report_, 1912, 13.
“bill of rights.” While this action was important in persuading Congress to allow Hawai‘i to access federal aid on par with the U.S. states, these historians did not acknowledge that efforts to obtain appropriations for the territory dated to as early as 1904. I propose to examine the subject of federal funding in more detail, explaining how aid was obtained and the role that roads played in these efforts.

Farrington was in office when the bill of rights was passed, but others paved the way, including Farrington’s predecessors, public servants, and other citizens. In particular, Hawai‘i’s Delegate to Congress, Prince Jonah Kūhiō Kalaniana‘ole, endeavored for fifteen years to obtain national funding for Hawai‘i. Kalaniana‘ole recognized that roads presented an opportunity and consistently pursued appropriations for Hawai‘i when Congress was debating federal highway money for the states in the 1910s. Federal road aid was unfortunately not extended to Hawai‘i until 1925, several years after Kalaniana‘ole’s death.

Laying the Groundwork

Early territorial governors identified the hardships resulting from the diverted customs collections and emphasized that the U.S. government had certain customary obligations. In 1902 Governor Sanford Dole advocated aid for maritime infrastructure, arguing that this duty was “usually performed by the Federal Government” and ought to be so in Hawai‘i, especially considering its geography. Dole recommended that the customs collected at Hawai‘i ports be

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50 Bell, Last Among Equals, 54-55; and Kuykendall and Day, Hawaii: A History, 198, 219-220.
51 Prince Jonah Kūhiō Kalaniana‘ole was an ali‘i and a designated heir to the Hawaiian throne. He was elected as the Territory of Hawaii Delegate to the U.S. Congress in 1902, at a time when the majority of voters were Hawaiian. (Davianna Pōmaikā‘i McGregor, “Prince Kūhiō: An Introduction to His Life,” 3; and Noenoe K. Silva, “The First Election of Ke Keikialii Kūhiō Kalaniana‘ole,” 4, in Biography Hawai‘i: Five Lives, A Series of Public Remembrances [Honolulu: Center for Biographical Research, (2002)], booklet produced as background reading for a public lecture on 14 May 2002). Like these scholars, I have inserted diacritical marks for Kalaniana‘ole’s name in my text, however they do not appear where not originally used (such as letters and archival documents).
returned to the territory to help it pay for building lighthouses, dredging harbors, and maintaining buoys. He argued that the loss of $1.2 million dollars annually, together with these expensive projects, was too much for the territory to bear.\textsuperscript{52}

Governor Carter's appeal for aid emphasized the federal government's obligation to be fair. His efforts were supported by business organizations from around the islands in 1904. These associations expanded and helped establish what emerged as a major argument for Hawai'i benefits. The businessmen claimed that the U.S. government collected $8.52 per capita from the islands, but returned only $1.62. Although the states' corresponding contributions to the U.S. treasury were not noted, the merchants declared that Uncle Sam returned $7.97 per person to the states. Declaring that the shortage of money for public works, including roads and bridges, was hurting business, they concluded, "in view of the large amount of profit gained by the Federal Treasury directly from Hawaii, we would urge strong representations be made to Congress with a view of having a fair proportion of the Federal receipts from Hawaii expended for necessary improvements in this territory," especially harbors and public buildings (federal responsibilities).\textsuperscript{53}

Even though the U.S. government had assumed most of Hawai'i's debt at annexation, SPW Holloway adduced that the situation was driving Hawai'i back into debt. By 1903 the territory had borrowed $2 million to fund programs; and in 1905 another $735,938. Despite the difficulties, Holloway claimed to

\textsuperscript{52} Governor's Report, 1902, 60. Sanford Dole was the Territory of Hawaii's first governor and had served as the president of the Republic of Hawaii.

\textsuperscript{53} Governor's Report, 1904, 21, Appendix, 139-140. The territorial government wanted federal buildings in Honolulu and Hilo to accommodate U.S. Government departments, including the post office, courts, and customs.
have carried out an ambitious program of public works, endeavoring to "see that the Territory receive[d] full value for all money expended."\(^{54}\)

Carter sustained the focus on Hawai‘i’s inequitable treatment, charging that the territory was being shortchanged. He stressed that he had done "all in his power" to convince Congress to return some of Hawai‘i’s tax payments.\(^{55}\) Carter also maintained Dole’s argument that the U.S. had customary obligations, such as maritime infrastructure, and Hawai‘i needed a breakwater for Hilo and a hydro-geological survey. "[M]any other matters" also required attention. In Carter’s opinion, if American control were to be "benignant and intelligent," Hawai‘i, as a "point of contact where the Orient and the Occident meet," should receive special treatment. "At present, Hawai‘i’s resources are unnecessarily and unduly taxed," he complained, "and the problems that our citizens here are struggling with deserve more encouragement and assistance from 'Uncle Sam.'"\(^{56}\)

O‘ahu County Engineer Guy Gere was certainly not the only Hawai‘i resident knowledgeable about mainland highway activities, but may have been among the first to suggest that the federal aid efforts should concentrate on highway assistance. In 1907 he wrote several articles of a mostly technical nature, in which he also stated that Hawai‘i’s great needs did not match its "limited means." Adding to the problem was the latest development, the automobile, which needed better roads and created the need for additional road maintenance. Gere observed that "good roads enthusiasts" paid "considerable


\(^{55}\) Carter to Henry Reuter, 26 December 1905, Gov 2-5, Territorial Departments, Road Boards, HSA. Reuter wanted money for education; Carter’s response emphasized his general plea to Congress.

\(^{56}\) *Governor’s Report*, 1906, 22-23.
money” into the treasury, “which should rightly belong to the improvement and maintenance of the roads.”

Gere stressed that the “burning question” on each island remained the belt roads and suggested that a territorial-aid bill finance this work. More significant was his recommendation that Hawai‘i emulate the Michigan state highway commissioner’s request for a “National Reward for Roads.” Gere reported that Michigan wanted Congress to financially “reward” properly constructed roads (as opposed to byways that were not professionally designed and built). He wisely counseled, “If our Delegate can assist this measure through Congress and get Hawaii in the first flight it would be well worth while.”

In the early 1900s, the federal government exercised limited involvement with state road programs and primarily served as a source of technical expertise through the Office of Public Road Inquiry (OPRI). The OPRI was familiar to Gere, other county engineers, and the governor, as its director, Louis Page, had requested information about and descriptions of Hawai‘i’s roads in 1906. It is clear that Gere and others wanted the federal government to take the next step and fund, rather than just advise, road construction.

Delegate to Congress Kalaniana‘ole was already working to obtain funding for Hawai‘i. In 1906 he introduced a bill in the U.S. House of Representatives (House) to require that 75 percent of customs and internal revenues collected in Hawai‘i be returned to the territory for a period of twenty

57 Guy Gere, “Road Construction in the Territory of Hawaii,” 1-2, 4-6. When Gere authored this paper, he was the Oahu County Engineer.
58 Guy Gere, “Road Construction in the Territory of Hawaii,” 1-2, 4-6.
60 Seely, Building the American Highway System, 16-17.
years. The money would fund public works, including schools, other public buildings, harbors, and military defenses.\textsuperscript{61} This wide variety of infrastructure represented a marked departure from Dole’s limited requests for maritime improvements and federal buildings, which were federal obligations. Although not mentioned in the bill, roads were prominently singled out in a congressional report on the bill’s “minority” views.

Objections to Kalaniana‘ole’s bill were revealed in the House Committee on Territories “minority” statement. These congressmen were willing to return some tax money to the territory, but did not believe that Hawai‘i deserved or needed the level of funding desired by Kalaniana‘ole. First, they opined that the federal government had already provided for the islands when it assumed Hawai‘i’s debt at annexation and compensated for property destroyed during attempts to control the plague in Honolulu. The “minority” also disputed the governor’s declaration that island residents paid too much in taxes, more than $22.00 per capita, countering that the real figure was less than $10.70 per person. They refused to accept the territory’s claim that it had already imposed too many new taxes to fund local services. Opponents of the bill concluded that large federal appropriations were unjustified because Hawai‘i had benefitted from “unprecedented growth” since its annexation to the United States.\textsuperscript{62}

This “minority” objected to the bill for two reasons. First, these congressmen disapproved of a proposal that was “plainly to commit the Government to the building of the schoolhouses, local public buildings, and the

\textsuperscript{61} U.S. Congress, House, Committee on the Territories, A Bill to Establish a Fund for Public Works in the Territory of Hawaii, and for Other Purposes, 59th Cong., 1st sess., H.R. 14015 (5 February 1906), Jonah Kuhio Kalanianaole Congressional Collection, M-474, Box 1, U.S. Congress Records 1, Bills and Reports, 1903–1913, HSA.

\textsuperscript{62} U.S. Congress, House, Fund for Public Works in Hawaii, 59th Cong., 1st sess., Report No. 2743, pt. 2 (3 April 1906): 1-5, Kalanianaole Collection, M-474, Box 1, U.S. Congress Records 1, Bills and Reports 1903–1913, HSA.
roads and bridges," which were "domestic necessities." Secondly, they stated that the territory clearly did not need assistance. Opponents articulated that Hawai'i already had a good school system as well as fine roads and bridges:

There was expended last year in the building of permanent roads and bridges over $560,000, and when we consider that the islands are but little larger than the average Congressional district one can realize what this expenditure should mean. Hawaii has better roads at present than ever before. It would like to build other roads, bridges, and schoolhouses, provided the United States will pay for them. In every Congressional district in the country there is urgent demand for the same kind of improvement. Should the General Government pay for them simply because they are desired and would be of advantage to the local communities where the expenditures were made?63

These congressmen were concerned that allocating Hawai'i the money as proposed would make the territory dependent on federal money long after the initial twenty-year period of appropriations.64 In addition, national money for purely local projects might establish an unwelcome precedent during an era when federal involvement in local affairs was limited.

Two points highlighted in the minority report demonstrate that Congress was not treating Hawai'i fairly or rationally. Whoever (probably Kalaniana'ole) presented Hawai'i's demands for a portion of its customs revenues must have pointed out that Puerto Rico, a U.S. possession, was allowed to keep its customs collections. The minority report justified this discrepancy by the simple statement that the two territories were "not on equal footing."65 Furthermore, comparing Hawai'i's small area to the average size of a congressional district was unfair and unrealistic. This failed to take into consideration that building a road in the middle of the Pacific Ocean along the islands' isolated, rugged, and

63 House, Fund for Public Works in Hawaii, 3 April 1906, 4.
64 House, Fund for Public Works in Hawaii, 3 April 1906, 1-5.
65 House, Fund for Public Works in Hawaii, 3 April 1906, 1.
rainy mountainous coasts was an entirely different undertaking than building a thoroughfare in, for example, New Jersey or Illinois.

The "minority" concluded that Hawai‘i was doing quite well on its own and demonstrated that haole attitudes remained consistent. Although the "natives [were] rather sluggish," the territory had developed a satisfactory government and a "wide-awake business element" comprised of Americans. As such, they believed that Hawai‘i should consider itself lucky to be relieved of its debt (even though it was considerably less than the annual taxes paid to the federal government). Opponents emphasized that "Hawaiians" (obviously referring to Hawai‘i residents, not native Hawaiians) should "work out their own destiny" and be grateful to the U.S., a "generous Government." So soon after annexation, most native Hawaiians would have indeed liked to work out their own destiny, although it certainly would have been a different outcome than the congressmen's expectations.⁶⁶

Historian Bruce Seely noted that highway reform became a topic of national concern by 1911, due in part to the growing influence of automobile manufacturers and owners. He observed, "Given the general tendency toward centralized power evident in American society after 1889 and the Progressive belief that federal influence could encourage more efficient state administration, it was not a coincidence that this growing popular interest led to renewed efforts for federal highway funds." Congress faced a "flood of divergent proposals," with sixty road bills presented between December 1911 and July 1912. In 1914,

ten bills were introduced to the Senate and thirty-nine more in the House. The Federal-Aid Highway Act finally passed in 1916.67

Hawai‘i residents and officials were aware of these national events. In 1912 the Hawaiian Star newspaper advised its readers that Congress was considering legislation for “better country roads” in the form of rural post roads. A month later, readers learned that the Republican Territorial Committee had sent a telegram to Kalaniana‘ole requesting that Hawai‘i be included in the bill.68

Federal highway legislation did not pass in 1912, but Kalaniana‘ole’s papers evinced that he was cognizant of both the issues and impending obstacles. A 1913 congressional proposal for good roads considered “intelligent and practical” federal expenditures, including a school for highway and bridge engineers. Kalaniana‘ole’s copy of this document featured someone’s handwritten comment, “territories not mentioned.” His files contained other draft legislation that focused on federal cooperation with the forty-eight states; these, too, specified, “Territories not included.”69

Hawai‘i officials refused to be deterred. In 1914 SPW John Caldwell reviewed Hawai‘i’s eligibility for a House proposal for road funding. Caldwell presented the territory’s accomplishments and needs, stressing that roads were heavily traveled relative to area and population. Honolulu had a high rate of automobile ownership, and most tourists drove cars. In addition, the plantations

67 Seely, Building the American Highway System, 36-38, 41.
69 U.S. Congress, Federal Aid to Good Roads (Washington: GPO, 1913); and U.S. Congress, House, Construction and Maintenance of Rural Post Roads, Rept. No. 168 and its Supplement, 63d Cong., 2d sess., H.R. 11686 (19 January 1914), Kalanianaole Collection, M-474, Box 3, Subject Correspondence 24, Federal Aid April 1914–1920, HSA.
(pineapple and sugar) and the army ran heavy vehicles over the roads. The climate, of course, was always a challenge.\textsuperscript{70}

In Caldwell’s opinion, the 1914 House resolution did not exclude territories. He explained, though, that it would be difficult for Hawai‘i to meet its requirements. First, the limit of $5,000 per mile was less than half of what it cost to build a good road in the islands. A major obstacle was that the territory’s geographic location obviously meant it could not make statewide connections that tied into a national highway system. Finally, the stipulation that highways must serve a certain percentage of population complicated matters. Caldwell observed that many Hawai‘i byways traversed unpopulated districts. “Taken as a whole,” he concluded, “the Territory of Hawaii cannot construct any road through a zone having 60% of the population of the territory.” He determined that even if a highway was built through central Honolulu, it could not meet the House requirements.\textsuperscript{71}

In 1915 the territorial legislature nevertheless sent a resolution to Congress, Kalaniana‘ole, and the U.S. president asking that Hawai‘i being included in any act providing federal aid for roads. The document cited the need for improved farm-to-market and post roads, while noting that the territory deserved to participate because it paid a “large amount yearly” in national taxes.\textsuperscript{72}

\textit{Refining the Argument}

In 1915 SPW Charles Forbes prepared a forty-five-page study for Kalaniana‘ole to transmit to Congress, which justified four projects for which the Territory of Hawaii needed federal assistance, including O‘ahu’s belt road and

\textsuperscript{70} Caldwell, J. W., “Roads in the Hawaiian Islands.”
\textsuperscript{71} Caldwell, J. W., “Roads in the Hawaiian Islands.”
\textsuperscript{72} Territory of Hawaii, House of Representatives, “Concurrent Resolution,” 23 April 1915; Pinkham Collection, Gov 4-5, Legislature-Counties, Legislature 1913, HSA.
harbor improvements. It is unknown whether Forbes initiated this study or
developed its logic, but it was probably a companion document to the territorial
legislature's resolution to Kalaniana'ole. In any case, it significantly altered
Hawaii's strategy for obtaining federal road appropriations.

Forbes insisted that Hawaii residents had a number of "reasonable and
logical arguments." He astutely recognized that American road construction
and maintenance had historically been a local, not federal, obligation. He
consequently limited Hawaii's request for federal assistance to O'ahu's belt
road, presenting this as a national matter because it was heavily used by U.S.
government agencies.  

Forbes did not retreat from the assertion that Hawaii taxpayers provided
substantial contributions to the federal coffers, but got little in return. He
conjectured that Congress never intended that local levies be used to pay for
federal projects, yet O'ahu taxpayers had constructed and maintained their
island's roads, which were extensively utilized by the U.S. military. This
argument should have seemed perfectly sensible in light of the territory's
participation in World War I. Forbes declared that the local government had
issued bonds and spent $10,000 per mile to construct an 18.5-mile road from
Honolulu to the army's principle post at Schofield Barracks. It was difficult to
determine how much the army generally used O'ahu roads, but traffic was "very
heavy," according to Forbes. An estimated 75 percent of the vehicles between
Honolulu and Hale'iwa were military. "It is perfectly safe," he concluded, "to

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73 Charles R. Forbes, Public Improvements for the Territory of Hawaii (Honolulu:
Hawaiian Gazette Co., Ltd., 1915), 1-5, copy at the University of Hawaii'i-Mānoa, Hamilton
Library, Hawaiian Collection. In the early days of the American republic, roads were a matter of
concern for the federal and national governments. After the U.S. became dependent on
railroads for much of its overland transportation, roads became a local issue and remained so
until the 1890s (Thomas MacDonald, "Highway Administration in the United States," Good
Roads, November 1925, 275).
estimate about $30,000 worth of roads in the Pearl Harbor district constantly being used by the navy department; making approximately $370,000 worth of roads directly and constantly in use by the military and naval authorities."

Forbes claimed that the military used all island roads, not just O'ahu's.74

Forbes was well qualified to analyze the situation, not only in his role as SPW, but also as the chairman of the Oahu LFC. Having described the circumstances, he proposed that the U.S. provide $200,000 per year until a belt road was finished around O'ahu, "which would prove of inestimable value and which would to all intents and purposes be military roads." The network of thoroughfares would facilitate the movement of troops in case of an emergency, but also make a considerable amount of government land accessible. Forbes recommended that the Territorial DPW or the "U.S. Engineers" build the roads, with Hawaiʻi assuming the cost of maintenance. He laid out a route that would remain passable "under any and all conditions."75

In December 1915, Kalanianaʻole introduced a bill for an Oʻahu military highway. While the stated purpose of the legislation was national defense, the text of the bill and Forbes' study suggested that Hawaiʻi officials may have viewed this as a pretext and opportunity to obtain funding for at least one island road. Both Kalanianaʻole and Forbes wanted the Oʻahu belt road to be a cooperative effort between a civilian agency, the Territorial DPW, and the U.S. Secretary of War. Significantly, the road would be under territorial control and open to the general public, "except when used for military purposes," (which, of

74 Forbes, Public Improvements for the Territory of Hawaii, 5-8. In addition to customs revenues, Hawaiʻi also paid income taxes to the federal government after 1913 when the Sixteenth Amendment to the U.S. Constitution instituted income taxes. These taxes were not required to be equitably returned to the states and territories that paid them. Hawaiʻi pioneered its own workable income tax, which in many U.S. states had not been popular nor successful. The territorial income tax was imposed to cope with the lost customs revenue after annexation (Kuykendall and Day, Hawaii: A History, 198, 219-220).

75 Forbes, Public Improvements for the Territory of Hawaii, 19-21.
course, would be subject to interpretation). Kalaniana'ole's bill failed, as did another attempt to fund the byway in 1916.

The Federal Aid Highway Act of 1916 meanwhile authorized money for the forty-eight states. The bill provided for road improvements under the joint supervision of state and federal authorities, with the U.S. Bureau of Public Roads (BPR) paying up to half the cost of highway projects. Each state had to establish a highway department to ensure that work was appropriately and efficiently completed. The states were also responsible for maintenance.

The 1917 Hawai'i civic convention records noted that the territory had not insisted on being included in this bill, deeming it advisable to instead concentrate on obtaining funding for an O'ahu military road. This strategy failed and civic leaders expressed their dismay:

Hawaii is contributing its pro-rata share to the National Treasury and in all other respects bearing its share of the National burdens as fully as though it were a State.

Under these conditions there is no good reason why Hawaii should not be treated upon the same basis as a State.

After the military highway was rejected for the third time, civic convention attendees abandoned the narrow focus of their argument and resumed the drive to convince Congress to grant Hawai'i its fair share, demanding that the new federal road policy include the territory.

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76 U.S. Congress, House, A Bill for a Military Highway around the Island of Oahu, 64th Cong., 1st sess., H.R. 3705 (10 December 1915), Kalanianoe Collection, M-474, Box 1, U.S. Congress Records 2, Bills and Reports 1915–1916, HSA.
77 John C. Lane, Message of the Mayor to the Board of Supervisors...Estimates for Public Improvements [Honolulu: Office of the Mayor, 1916], 6, copy in the University of Hawai'i-Mānoa, Hamilton Library, Hawaiian Collection. Mayor Lane was optimistic that with Governor Pinkham's efforts, O'ahu would get its military belt road.
80 "Report of the Holdover Committee...on Good Roads," 43-44.
Kalanianaʻole transmitted the civic association's resolution to Louis Page, director of the U.S. Office of Public Roads, and informed him that the House Committee on Good Roads had agreed to consider extending the legislation. Page, according to Seely, was the arbiter of the nation's first federal highway policy and a strong proponent for rural roads (Hawaiʻi's major need). In line with what Seely labeled Page's "apolitical style," the director excused himself from the revenue controversy between the territory and federal government, but advised Kalanianaʻole that his office could readily provide engineering and administrative expertise. Page had "no doubt that some excellent results could be obtained by constructing Federal-Aid roads in Hawaiʻi," adding that he would "personally" be pleased to see Kalanianaʻole's efforts succeed. Despite the support of the influential Page, the amendment to extend appropriations to Hawaiʻi failed.

By 1919 the territory's efforts to secure federal road aid seemed hopeless, yet Hawaiʻi officials persisted. That year, the House "steering committee" requested Kalanianaʻole provide documentation to support his "legislative fight," including details on territorial and county expenditures, road-building policy and authority, and military use and damage of roads. Kalanianaʻole re-emphasized the unbalanced nature of federal receipts and expenditures, predicting that Hawaiʻi would receive "just treatment." He nevertheless realized that securing funds would be difficult because Congress

81 [H. E. Vernon, Sixth Annual Civic Convention] to J. K. Kalanianaʻole, 13 December 1917; and [J. K. Kalanianaʻole] to Logan [sic] W. Page, 30 January 1918, Kalanianaʻole Collection, M-474, Box 3, Subject Correspondence 24, Federal Aid April 1914–1920, HSA.

The federal road department changed names and responsibilities several times over the years. The first federal road agency was the Office of Road Inquiry (ORI), established in 1893; it was renamed the Office of Public Road Inquiry (OPRI) in 1899; then became the Office of Public Roads (OPR) in 1905; and finally the Bureau of Public Roads (BPR) in 1918 (Seely, Building the American Highway System, 3, 16-17, 24, 46).

82 Seely, Building the American Highway System, 41.

83 L. W. Page to J. K. Kalanianaʻole, 7 February 1918, Kalanianaʻole Collection, M-474, Box 3, Subject Correspondence 24, Federal Aid April 1914–1920, HSA.
would not reallocate money that had already been apportioned among the states.\textsuperscript{84}

This time, Thomas MacDonald, chief of the renamed U.S. Bureau of Public Roads (BPR), supported Hawai'i's cause. "We regard the road movement as a national one," he stressed, "and we do not wish to see any part of the land subject to the jurisdiction of the United States Government, excluded from the benefit of Federal Aid for road building."\textsuperscript{85} Despite MacDonald's support, Kalaniana'ole's efforts failed again. Congress refused to support federal money for Hawai'i even though the agency bureaucrats did, including Page and MacDonald, as well as U.S. National Park Service Assistant Director Horace Albright.\textsuperscript{86}

Territorial officials seemed to be reaching the point of exasperation in their attempts to recoup benefits from the millions of dollars annually paid into the U.S. treasury. By the same token, they were beginning to understand the obstacles. In 1920 Governor McCarthy told Kalaniana'ole that he believed the failures were, in part, because some congressmen knew little about Hawai'i. McCarthy recalled his conversations with one member who served on the "fortifications" subcommittee, another on appropriations. According to McCarthy, both were under the mistaken impression that Congress had expended vast sums of money for O'ahu roads and were surprised to learn that island taxpayers had funded and built byways used by the military. McCarthy noted

\textsuperscript{84} J. K. Kalanianaole to Charles J. McCarthy, 29 July 1919, Kalanianaole Collection, M-474, Box 7, Correspondence 80, Governor 1918–1921, HSA; Samuel Kauhane to C. J. McCarthy, 3 November 1919; and Fred Kane to Charles J. McCarthy, 19 August 1919, Kalanianaole Collection, M-474, Box 3, Correspondence 24, Federal Aid April 1914–1920, HSA.

\textsuperscript{85} Thomas MacDonald to J. Kuhio Kalanianaole, 19 February 1920, Kalanianaole Collection, M-474, Box 3, Correspondence 24, Federal Aid April 1914–1920, HSA.

\textsuperscript{86} Horace Albright, Field Assistant to the Director, National Park Service, "Annual Report," 1920, TS, pamphlet no. 114 in the Hawai'i Volcanoes National Park library, Volcano, Hawai'i, 7, 25.
that congressmen who had visited Hawai‘i were “fully aware” that O‘ahu roads were a “military necessity.” He suggested that Kalanianaʻole rectify the situation by educating the oblivious members, which would be a “fine thing” for both Hawai‘i and the United States.87

In 1922 Henry (Harry) Baldwin of Maui filled Kalanianaʻole’s unexpired term in Congress after the delegate’s death. Baldwin, a businessman, seemed to be more of a realist. He explained what he apparently believed was a hopeless situation to McCarthy’s successor, Governor Wallace Farrington. Baldwin portrayed Kalanianaʻole as having been tenaciously optimistic about federal funding. Baldwin himself had been led to expect that there was a chance for Alaska, Hawai‘i, and the District of Columbia to share in U.S. road money, but subsequently learned there was no possibility of securing unspent appropriations. He informed Farrington that the House roads committee had “gone on record as refusing to include the Territories in the Good Roads Bill,” although he did not explain why. Baldwin recalled Kalanianaʻole’s numerous attempts to obtain money and astutely concluded that history demonstrated:

The fact that Hawaii, being a Territory and having no vote, cannot get anything from Congress except on sufferance. This point has been frequently brought forward by Bureau Chiefs [Page and MacDonald] who are anxious to assist Hawaii in federal operations, but who have consistently stated that because Hawaii had no quid pro quo to offer, anything that we get from Congress is practically in the nature of charity.88

The notion that Hawai‘i had no quid pro quo seems inconceivable in light of the United States’ historic strategic interests in Pearl Harbor. What is more intriguing is whether Baldwin’s observation about a powerless territory with no

87 C. J. McCarthy to Jonah Kalanianaole, 16 November 1920, Kalanianaole Collection, M-474, Box 7, Correspondence 80, Governor 1918–1921, HSA.
88 [Henry Baldwin] to W. R. Farrington, 6 December 1922, Kalanianaole Collection, M-474, Box 7, Correspondence 81, Governor 1922–1923, HSA.
vote in Congress prompted territorial officials to reconsider their strategy to obtain appropriations. In 1923 Hawai‘i officials and businessmen presented the territory’s case in the “Hawaii Bill of Rights,” which finally convinced Congress to extend appropriations to the territory.

**Hawai‘i’s “Bill of Rights” Defines the Territory’s Status**

Hawai‘i’s federal tax payments nearly doubled in 1921 and were the largest amount ever paid by the territory. Its contributions were higher than many states having larger geographic areas and greater resources. After being appointed governor in 1921 Farrington wasted little time in expressing his frustration over this situation, “The people of Hawaii feel that their fellow citizens throughout the country do not always appreciate the very large contribution made by this Territory to the Federal revenues.”

Farrington’s 1922 annual report demonstrated that he was expanding the issues surrounding Hawai‘i’s tax and revenue sharing. He maintained the emphasis on fairness, but more importantly, refocused the argument to the territory’s status within the Union. Farrington asserted that Hawai‘i deserved “special recognition” because it carried the "same burden" as the states. This observation was remarkably similar to the civic convention’s 1917 declaration, which had stated that Hawai‘i was paying its share of taxes as if it were a state. Farrington also resurrected McCarthy’s strategy to educate U.S. mainlanders about Hawai‘i. He extended his predecessor’s observations about unaware congressmen who were ignorant about Hawai‘i to include the general American

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89 Governor’s Report, 1921, 5-6. Farrington did not report why taxes were so much higher, but it may have reflected the return to prosperity after the end of the First World War.
populace. Farrington squarely placed the blame for "mistreating" Hawai'i, that is shortchanging it out of revenue, on:

The apparent failure of the American people to understand that this Territory is an integral part of the United States. Hawaii is not a "possession." In the payment of Federal taxes, in customs collections and other similar Federal requirements, the Territory of Hawaii carries all the responsibility of a State.90

Farrington charged that Congress had "deliberately refused to recognize the Territory of Hawaii in certain general appropriations. This [was] notably true and particularly unfortunate in connection with the laws dealing with education, maternity, and national road construction."91

The governor clearly articulated that Hawai'i had been incorporated in the same manner as the mainland territories that had achieved statehood. As such, the territory was entitled to receive national appropriations. Farrington further stressed that Hawai'i was not a "possession" that had been purchased or conquered, but instead a territory that had "voluntarily" (my italics) joined the Union.92 He adamantly affirmed that Hawai'i was a "loyal government unit of the United States and a vigorous industrial section of the Nation." Despite this, Farrington iterated that Hawai'i had been denied its customs payments and never received benefits commensurate with its tax contributions. The governor's revenue statement in 1922 claimed that Hawai'i had paid over $68 million in federal taxes since 1900, but received only $491,791 in benefits, which left $67,532,748 for the U.S. treasury.93

90 Governor's Report, 1922, 1-2.
91 Governor's Report, 1922, 1-2.
92 Hawai'i officials often emphasized the territory's "voluntary" annexation during the long quest for federal funding. They inferred that the "willingness" to join the Union should have given the Territory preferential treatment (and federal funding) over the conquered possessions acquired during the Spanish-American War. Native Hawaiian historians firmly reject that annexation was "voluntary," see especially Noenoe Silva, Aloha Betrayed.
93 Governor's Report, 1922, 1-2, 99. After 1922, the Governor's Reports to the Secretary of the Interior frequently included the breakdown of U.S. revenue collections and
Farrington repeated his disappointment over the tiresome, futile attempts to obtain federal appropriations in 1923. "It sometimes seems ridiculous," he declared, "that the necessity should exist for a restatement of Hawaii’s status and a recitation of what it has done." He insisted that the U.S. Government was obligated to disburse benefits to the territory and presented a long inventory of federal appropriations that had been denied; first on his list was highway funding. The governor bolstered his argument by pointing out that Hawai‘i contributed more to the federal treasury than seventeen states in 1921 and nineteen states in 1922. He concluded that Congress treated Hawai‘i as if it were a colony, which prevented the territory from assuming its rightful place as an "integral part of the American Union." 94

In 1923 Farrington convened a committee that drafted the “Hawaii Bill of Rights.” Approved by the territorial legislature, this document clarified and affirmed Hawai‘i’s status for the benefit of the U.S. Congress. The Hawaii Bill of Rights explained that the 1910 amendments to the territory’s Organic Act extended U.S. laws to Hawai‘i, including the right to “general appropriations.” In essence, the Hawaii Bill of Rights reminded Congress that the territory, by virtue of Congress’ own legislation (the Organic Act), had always been eligible for federal funding, just as the states were, and should have never been denied appropriations. Farrington insisted that congressional discrimination against Hawai‘i was “not equaled in the methods of dealing with any State or ‘possession’ under the American flag.” 95

94 Governor’s Report, 1923, 1-3.
95 Governor’s Report, 1923, 1-3; Bell, Last Among Equals, 54.

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Farrington endorsed the Hawaii Bill of Rights as a "practical expression of the worthy ambition of the people of Hawaii to be better known to their fellow citizens of the mainland and eventually merit full statehood." Roger Bell insisted that the haole elite's primary goal in 1923 was not statehood, but accessing federal appropriations.  

Congress debated and accepted the Hawaii Bill of Rights by passing H.R. 4121 in 1924. This confirmed "recognition of the Territory of Hawaii as entitled to equality with the several states in general appropriations for Federal aid for highways, education...." Federal road aid was thereby authorized for Hawai'i from 1925. Congress, however, stipulated that the Secretary of Agriculture (under whom was the Bureau of Public Roads) spend U.S. money in Hawai'i on projects that would expedite a system of national defense highways and roads to connect ports to national park units. These conditions for federal-aid highway projects were unique. Thomas MacDonald's review of the federal aid program made no mention of restrictions or "preferences" imposed on the forty-eight states.  

The desire to receive national assistance for roads was a major argument in Hawai'i's quest for federal recognition and benefits. It is unclear whether a speech in Kalaniana'ole's files was actually delivered to the House, but the document explained the financial implications of H.R. 4121. The territory had spent more than $26 million on highway construction and maintenance, with no assistance from the national government, even though "the military maneuvers and constant hauling of supplies to the various army

96 Governor's Report, 1923, 1-3; Bell, Last Among Equals, 54-55.
97 Governor's Report, 1924, 2, Appendix B, 117-118.
posts by long trains of Army trucks, has very greatly increased the cost of maintaining our roads." Furthermore, local officials had cooperated with the "wishes of the military authorities" by widening highways and reconstructing them with concrete thicker than normal commercial requirements. The higher standards were necessary for the army to drive heavy gun tractors over local county roads.  

The significance of Hawai‘i’s "Bill of Rights," as Bell noted, was indeed financial. In his 1924 annual report, Farrington summarized Congress' acceptance of the bill as a "gratifying event" because "it completed the congressional recognition of the Territory of Hawaii as entitled to equality with the several States in general appropriations for Federal aid for highways, education, child welfare and maternity, and farm loan banks."  

A compelling question emerges regarding the "Hawaii Bill of Rights." In light of Baldwin's observation, how did Hawai‘i, with no vote in Congress, win federal appropriations and with this, the right to participate in the federal aid for highways program? While this question is not central to this thesis and deserves a more complete investigation, it seems appropriate to briefly consider the issue. With historians frequently placing great emphasis on Hawai‘i’s military significance, it is too easy to assume that road money was granted because of the islands' strategic importance.  

The military justification for federal aid for Hawai‘i roads should not be over-emphasized. It seems clear that local officials had no objections to the

99 Typescript of a speech prepared for the House [1923], Kalanianaole Collection, M-474, Box 1, U.S. Congress Records 1, Bills and Reports, 1903–1913, HSA, 3-4. The delegate to Congress at the time the bill was being debated was William Jarrett, who served from 4 March 1923 until 3 March 1927. It is unclear why some of these papers, which obviously post-date Kalaniana‘ole's term in office, were deposited with his papers in the HSA. This document was found in a folder dated 1903–1913, but the document mentioned H.R. 4121, which considered the Hawaii Bill of Rights in 1923.
100 Governor's Report, 1924, 2.
military strategy, but they were primarily seeking a convincing argument so that Congress would grant federal highway aid. As early as 1916 Paradise of the Pacific mentioned the military necessity, but asserted that a million dollars would provide a belt road for O'ahu. The article then touted the proposed byway's value for tourism, since it would provide visitors with "two or three hundred miles of splendid motoring, with quite a choice of trips."\(^{101}\)

Although some governor's reports acknowledged Hawai'i's role in national defense, it was not presented as the first concern from the local viewpoint, especially by the early 1920s. The governors consistently recognized Hawai'i as a strategic location for trade and commerce, and sometimes tourism. It was the "point of contact where the Orient and the Occident meet" and the "Crossroads of the Pacific." The year that Hawai'i won its "Bill of Rights," Americanism and loyalty were underscored. Hawai'i as the "key to the Pacific" was not Pearl Harbor. According to Farrington, its "natural duty and logical mission in the great Pacific was of expanding commerce and friendly international exchange."\(^{102}\)

Local authorities, in fact, seemed to exaggerate their willingness to build military roads and probably said what Congress wanted to hear. SPW Lyman Bigelow, testifying to the House Committee on the Territories, told congressmen that Hawai'i's construction of defense roads was not limited to O'ahu. The territory was also improving Volcano Road, Bigelow explained, to help the army access its summer camp at Kilauea and thereby improve servicemen's health. He described how Hawai'i was spending about a quarter-million dollars "in the

\(^{101}\) "Big Military Project for Oahu," Paradise of the Pacific, July 1916, 21-22.
\(^{102}\) Governor's Report, 1906, 22-23; 1923, 2-4.
interest of the military forces," when this road had always, without doubt, been recognized for its importance to tourism, as chapter five will demonstrate.\textsuperscript{103}

There is no question that O'ahu, as the main defense center for the islands, received the bulk of federal highway funding, but that was appropriate as it also had the majority of the territory’s population and business interests. The fact that H.R. 4121 also allowed money to be spent on national park related roads as well as other appropriations (such as health and education) refutes the assumption that Hawai‘i received federal funding for highways only because of it strategic significance.

The question then remains, why did Congress extend these appropriations to a territory with no voting representation? The answer lies in the fact that Hawai‘i and Alaska were incorporated into the U.S. under the same terms as earlier mainland territories that became states. Incorporated status implied that both Alaska and Hawai‘i would eventually achieve statehood. Farrington’s files clearly indicate that he recognized the ramifications of incorporation, which were unique amongst America’s island “possessions.” Guam, the Philippines, Puerto Rico, the Virgin Islands, and American Sāmoa were not incorporated, thus not on track for statehood. As such, those “possessions” were not guaranteed the same rights as states, including certain federal funding. Bell remarked that Hawai‘i’s elite (the haole sugar planters and descendants of East Coast missionaries) maintained an effective lobby in Washington D.C., which further enabled the territory to realize the goal of obtaining national aid.\textsuperscript{104}

\textsuperscript{103} U.S. Congress, House, Committee on the Territories, Hawaiian Bill of Rights, \textit{Hearings before the Committee on the Territories}, 68th Cong., 1st sess., H.R. 4121 (23–29 December 1923), 38-39, copy at the University of Hawai‘i-Mānoa, Hamilton Library, Hawaiian Collection.

\textsuperscript{104} Bell, \textit{Last Among Equals}, 40-41, 54-55.
The congressional hearings on the Hawaii Bill of Rights highlighted that congressmen finally realized and agreed that Hawai'i was paying more than its fair share and being asked to pay for infrastructure that had been built in the "national" interest. The hearing transcripts demonstrated that territorial officials presented a compelling legal argument. Farrington, a former newspaperman, praised his predecessor, Governor Walter Frear, as the Hawaii Bill of Rights' chief architect. Frear, who was also the territory's first chief justice, was well versed in Hawai'i's legal history and had helped frame its Organic Act. Lorrin Thurston was also involved. These men had long histories in Hawai'i and would have been familiar with the terms of annexation, the Organic Act, and its 1910 amendment. Confronted by this Bill of Rights, Congress had no choice but to agree with Farrington that Hawai'i was being "discriminated" against. The territory was not receiving the benefits it was entitled to according to the 1910 amendment to the Organic Act, which allowed Hawai'i to participate in federal appropriations wherever its functions were equal to those of a state.105

The other incorporated U.S. territory, Alaska, did not participate in the federal aid for highways program until 1956. From 1905, Alaska instead received funding from the U.S. War Department, which established the Alaska Board of Road Commissioners. Alaska nevertheless continued to ask Congress for additional aid.106

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Initiating Hawai'i's Federal Road Program

In 1925 the Territorial Highway Department (THD) was created to comply with federal highway legislation. The THD (within the DPW) immediately began planning its "seven-percent" system, as instructed under the terms of the Federal Highway Act of 1921. Each state was directed to designate three percent of its primary roads and four percent of secondary roads as federal aid highways, subject to BPR approval. Hawai'i's system consisted entirely of primary roads and was contrived to suit Congress' preference for military and
national park related thoroughfares. Hawai‘i’s federal highway system included O‘ahu’s belt/defense roads (Kamehameha and Kalaniana‘ole Highways and Wai‘anae Road); Volcano Road, which linked the port at Hilo to Hawaii National Park (HNP) on the Big Island; and byways on Maui that connected Kahului’s seaport to the Haleakalā section of HNP. (Figure 3) Six projects were already underway or completed by the time Hawai‘i’s “seven-percent” system was approved by Washington in 1928.\footnote{107}

Hawai‘i highways received another tremendous boost in 1931 when Congress amended the 1924 legislation that had extended federal funding to the territory. The revised law, H.R. 16913, included two important provisions. First, the new law removed the restrictions requiring defense and park roads. After 1931 the territorial governor and U.S. Secretary of Agriculture were allowed to choose Hawai‘i’s federal-aid roads. The bill indicated that the “system first determined and agreed upon” (based on the military and national park preferences) had been completed, so that Hawai‘i was free to add to this as funds became available. In addition, the legislation authorized a one-time appropriation of $880,000 for Hawai‘i roads. This represented a portion of the $1,364,720 the territory would have received between 1917 and 1925 had it been allowed to participate in the federal road program.\footnote{108} The congressional testimony did not explain how this amount was determined, but the discussion about unobligated funding seemed to indicate that the retroactive sum was probably limited by available appropriations already authorized by Congress.

While the revisions were significant for highway development, the congressional debate was of interest for two reasons. First, it highlighted the

\footnote{107} \textit{SPW Report}, 1925, 12-14; 1926, 11-12, 15, 17; 1927, 15-17; 1928, 17; and Seely, \textit{Building the American Highway System}, 74.
\footnote{108} \textit{Governor’s Report}, 1931, Appendix B, 131-133; and Lyman H. Bigelow, \textit{SPW Report}, 1931, 32-34.
dire financial situation facing Hawai‘i in 1930. Governor Lawrence Judd and Delegate to Congress Victor Houston explained that the territory had “in good faith” undertaken a “heavy road program” in 1917 when the federal highway program began. Without federal assistance, the territory had paid for its roads with loans and “practically exhausted” its bonding ability. In short, Hawai‘i was going bankrupt to build roads. By 1930 it had an outstanding debt of over $31 million. Hawai‘i could no longer meet its debt obligations, nor could it match federal funding, so it was forfeiting its federal highway allotments. Hawai‘i officials iterated that the territory was being discriminated against, especially considering its hefty federal taxes, which at that time, were higher than fourteen U.S. states. ¹⁰⁹

The congressional document was also useful because it provided a long-overdue explanation (or perhaps excuse) of the “chain of circumstances” that had excluded the territory from the original 1916 federal-aid highway law, then allowed limited participation from 1925. Congress reaffirmed that the Organic Act entitled Hawai‘i to all federal appropriations available “elsewhere in the United States.” The report clarified that Congress had always intended for the territory to receive federal aid: it was “an integral part of the United States, a full-fledged Territory...as much as Arizona or New Mexico [had been].” In other words, Hawai‘i’s political and economic status was no different from that of the U.S. mainland territories that had achieved statehood. The “injustice” that denied Hawai‘i money from 1916 until 1924 occurred because the U.S. Comptroller of the Treasury had interpreted the law to mean that the territory

could only receive federal funding if Hawai‘i was specifically mentioned in the legislation.\textsuperscript{110}

Finally, the report revealed that the restrictions regarding military and national park highways had been imposed to compensate for the fact that Hawai‘i’s geography prevented it from adhering to the mandate that U.S. highway aid be used to build interstate and intercounty roads. The restrictions were intended to ensure that U.S. money spent in the islands paid for federally related projects.\textsuperscript{111}

Having discussed these issues, congressmen admitted that they had never intended for Hawai‘i taxpayers to pay for federal needs and agreed that the territory had been unjustly treated. They rectified their mistake by granting the territory retroactive payments (even though this represented only a portion of lost highway funding) as well as the right to designate its own federal highway system in consultation with the U.S. Secretary of Agriculture (just as the U.S. states did).\textsuperscript{112} H.R. 16913 confirmed Hawai‘i’s economic and political status within the Union.

Amending the 1924 restrictions was logical and fair, especially considering that the THD had proven its ability in managing federal highway projects. By 1929 four of the six original federal-aid projects, as well as a seventh job, were finished; the other two were under contract. The THD initiated new work on O‘ahu and Maui (Haleakalā Highway) in 1930, and the BPR approved adding a thirty-seven-mile stretch of South Kona’s belt road to the “seven-percent system,” which would eventually connect Kailua to HNP.\textsuperscript{113}

\textsuperscript{110} Senate, \textit{Payment of Federal Road Funds to Territory of Hawaii}, 3-4.
\textsuperscript{111} Senate, \textit{Payment of Federal Road Funds to Territory of Hawaii}, 2-3.
\textsuperscript{113} Bigelow, \textit{SPW Report}, 1929, 14; 1930, 9, 21, 23.
Not only was the THD completing projects, it achieved good results. Kamehameha Highway, for example, was built to withstand heavy military traffic with twenty-foot-wide concrete pavement, six inches thick in the center, and nine inches thick at the edges.\textsuperscript{114} Despite adverse conditions, Volcano Road was finished using an “ingenious system” of movable, covered shelters that allowed concrete to be poured and set in “all kinds of weather.”\textsuperscript{115}

The $880,000 reimbursement was granted to “cure the question of discrimination.” Hawai‘i, however, still did not receive its fair share compared to the states or the Territory of Alaska. Alaska alone received $800,000 in War Department appropriations for roads in 1931.\textsuperscript{116} The retroactive money was nevertheless a timely and appropriate adjunct to public works funding during the early years of the Great Depression.

Even though Hawai‘i finally received a portion of federal highway aid, the territory, like most U.S. states, could not meet the required matching payments when the Depression worsened. In 1930 Congress allowed emergency appropriations to be used as a local match to federal highway projects. Without this money, many road programs throughout the U.S. would have completely halted. E. S. Wheeler, the BPR engineer in Honolulu, explained that Congress permitted emergency funding to be used as the states’ (and territory’s) matching funds to help relieve unemployment. The emergency allotments used as local contributions for highway projects were considered “loans” that would be repaid from future federal-aid appropriations.\textsuperscript{117}

\textsuperscript{114} Bigelow, \textit{SPW Report}, 1926, 12.

\textsuperscript{115} Bigelow, \textit{SPW Report}, 1927, 15.


The year 1931 marked a milestone in the history of Hawai‘i road development. The unrestricted federal aid program, together with the “special fund” of $880,000 and generous amounts of emergency money, allowed the territory to earnestly build its primary road system. THD activities dominated the SPW annual reports throughout the Depression years, with tremendous progress achieved in belt-road construction. Although Hawai‘i was a latecomer, federal funding allowed it to join what Seely labeled as America’s “Golden Age of Highway Building” from 1921 to 1936. This “golden age” was possible due to federal appropriations and the apolitical expertise of the BPR.118

SPW Lyman Bigelow explained that Congress allotted the territory $400,000 of the $80 million allocated for the nation’s emergency funding in 1931. He highlighted how the “unusually large amount of important work” generated from federal moneys challenged the THD. Each year's allotment had to be spent during the year it was granted. Bigelow's department had a small number of employees, but he praised them for completing their work efficiently and with low overhead. Bigelow pointed out that emergency money used to match federal funds was to be repaid over a five-year period beginning in 1933, an indication that officials had yet to comprehend the severity or duration of the Great Depression.119

In 1932 the THD revealed Hawai‘i’s expanded federal-aid highway system, which was approved by the BPR. The entity was comprised of ten roads that measured approximately 532 miles over five islands. A map of the routes demonstrated that the primary highways were based on the historic belt-road pattern. Federal-aid roads on O‘ahu and the Big Island included those

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118 Seely, Building the American Highway System, 87. Part II of Seely’s study is entitled “The Golden Age of Highway Building, 1921–1936.”
119 Bigelow, SPW Report, 1931, 5-6, 23, 28-32, 41-42, 50-51, 63.
islands’ entire belt roads, as well as important connections to the coastal towns of Wai’anae and Kawaihae respectively. Two federal-aid byways were designated on Maui to serve major population centers from Lahaina via Wailuku-Kahului and through to Ulupalakua, while also providing access to the boundary of the Haleakalā section of HNP. Moloka‘i and Kaua‘i were also included in the new highway plan. Both had previously been excluded because they had no ties to defense or Hawaii National Park. Under the expanded program, these islands obtained federal-aid roads that served population corridors; Kaua‘i’s comprised a significant portion of its belt highway. (Figure 4) The territorial legislature recognized the tremendous work to be achieved and provided the DPW with $50,000 to administer the federal-aid program.\footnote{120}

The *Honolulu Star-Bulletin* reported that Hawai‘i led the nation in obligating its National Highway Recovery funds in 1933, with 82 percent of its $2-million share under contract.\footnote{121} The next year the National Industrial Recovery Act (NIRA) pumped $1,872,000 into the territory’s federal-road program. Bigelow remarked that the money was spent on new methods that vastly improved highway alignments, grades, and other technical details. Some accomplishments were quite substantial, for example, a 491.5-foot-long reinforced-concrete structure at Kīpapa Gulch on O‘ahu, which was appropriately dedicated as the Franklin D. Roosevelt Bridge.\footnote{122}

\footnote{120} Bigelow, *SPW Report*, 1932, 20-28, 37, 39-41, 46-47. Hawai‘i’s two other populated islands, Ni‘ihau and Lāna‘i, were not included in the federal-aid system. Ni‘ihau is privately owned, and nearly all of Lāna‘i is private property as well. The revised federal-aid road system started at Mala Wharf near Lahaina, which was an important West Maui landing from its construction in 1922 and during the 1930s.

\footnote{121} “Hawaii Heads Whole Nation on NRA Roads,” *Honolulu Star-Bulletin*, 19 January 1934. Eighty-two percent of Hawai‘i’s $2 million share of NRA funds were under contract.

\footnote{122} Bigelow, *SPW Report*, 1934, 14, 18.
Figure 4: Hawai'i's Federal Aid Highway System, 1932.
Managing federal-aid projects was challenging. U.S. funding could only be expended on construction; local governments had to supply plans, surveys, and estimates. Fuel taxes that supported the “Territorial Highway Fund” were insufficient to administer the rapidly expanding federal-aid program, so the legislature doubled the fund to $100,000 in 1934. Like many states, Hawai‘i sometimes diverted its fuel taxes to the territory’s general fund. It also had trouble paying contractors in a timely manner. Since emergency work was designed to relieve unemployment, the U.S. government helped establish a trust fund so that contractors were promptly paid and could in turn meet their payrolls.\textsuperscript{123}

The 1936 SPW report indicated the great impact of emergency and federal aid in Hawai‘i. Ten road projects were underway or completed on O‘ahu, three on Maui, one on Moloka‘i, and four on Kaua‘i. The most exceptional work was on the Big Island, where the notoriously rugged section of the belt road along the Hāmākua Coast was being realigned and reconstructed to accommodate modern vehicles. Photographs highlighted spectacular structures built to traverse deep valleys that had historically been difficult to travel. A 118-foot-high, 353-foot-long concrete-arch bridge was erected at Kupapaulea, and a 487-foot-long, 100-foot-high reinforced-concrete bridge spanned Kealakaha Gulch.\textsuperscript{124} (Photograph 1)

\textsuperscript{124} Louis S. Cain, \textit{SPW Report}, 1936, 10-13. Photos of Kupapaulea and Kealakaha Bridges were included in the report. Cain also served as the Territorial Highway Engineer.
Infrastructure expenditures peaked in 1937, mostly due to federal contributions. Over $2.376 million in U.S. money was granted for Hawai‘i public works, with nearly half, $1,065,777, allocated for roads. Roads received more funding than any other relief program, reflecting the situation throughout America.\textsuperscript{125}

The THD had made enough progress in improving existing byways and building roads into “comparatively remote places” to declare in 1939 that highway transportation by motor vehicle had become a “great decentralizing agency” that allowed people to move from “congested areas” into homes in “healthier rural areas.” With its work largely completed or underway, the THD, like forty-four states, established a Highway Planning Division to study future highway needs. Although byway improvements had provided Hawai‘i motorists with “great savings” and “driving comfort,” many “glaring examples of inadequate highways” still remained, although these were not described.\textsuperscript{126}

\textsuperscript{125} Cain, \textit{SPW Report}, 1937, 11; and Seely, \textit{Building the American Highway System}, 88.
\textsuperscript{126} Cain, \textit{SPW Report}, 1939, 35; 1940, 21, 40.
In 1939 and 1940 the territorial legislature, still coping with the Depression, again failed to appropriate matching highway funds. The Federal Highway Act of 1940 reinstated the money Hawai‘i had allowed to lapse. This time, in light of the world’s political situation, it was not surprising that Hawai‘i’s road aid was restricted to military highways. By 1941 personnel became a problem with nearly 25 percent of THD employees leaving their jobs for higher-paying defense work. In mid-1941 Congress failed to include Hawai‘i in the nation’s “strategic network of highways.” This oversight did not matter; after the Japanese attack on Pearl Harbor, the military seized highway contractors’ equipment and assumed control over territorial road work.  

**Implications of Hawai‘i’s Federal Highway System**

The years 1925 to 1940 were a period of tremendous change in Hawai‘i in terms of the administration and success in road development. Many of these achievements resulted from the islands’ participation in the federal highway program and emergency funding during the Great Depression. Even though America’s Golden Age of highway construction began in 1922, the enormous sums of federal money for territorial highways during the 1930s allowed Hawai‘i to make a late entry into the game and benefit from its own “Golden Age.”

Federal road funding had substantial implications for Hawai‘i. First, the highway aid and emergency funding during the Great Depression allowed the territory to build a modern road system that met the uniform standards established by the BPR. This highway system was comprised of the most important segments of the belt-road plan, fulfilling the long-desired dream that

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127 Daniel F. Balch, *SPW Report*, 1941, 29-32; 1942, 26, 29. Balch, like Cain, was also the Territorial Highway Engineer.
haole and to a lesser extent (since their voices are largely silent), Hawaiians and others, had been trying to achieve since the mid-nineteenth century. By 1939 the territory had made enough progress on its highway system that it could, along with forty-four U.S. states, concentrate on planning its future needs.

A major consequence of the federal highway program was to remove politics from the territory’s federal road system. No longer were road projects subject to the whims of road boards and commissions dominated by plantation managers and Republican Party members who used money to benefit their personal interests. The THD took control, and road development financed by the federal highway program placed Hawai‘i within the BPR’s “apolitical” system, which, as Seely argued, administered and built highways based on professional engineering standards.

With national money to build main roads, the territory was able to apply local resources to build other byways that were popular with the community, but not part of the federal road system. As an example, territorial and county funding built the Waimea Canyon Road on Kaua‘i in 1928 to provide access to that island’s most popular scenic and recreational attraction.¹²⁸

Only a small portion of the territory’s roads were included within the federal-aid system, but Hawai‘i’s participation in the program positively influenced highways built by local authorities. In 1936 County Engineer A. L. Burdick claimed that despite antiquated equipment, Maui closely followed BPR standards and was able to achieve “riding qualities” that favorably compared to the island’s “federal roads.” The county was setting new guidelines in “the matter of alignment, curvature, sight-distance, super-elevation, extra widening on curves, and in general excellence of construction,” which did not necessarily

¹²⁸ Bigelow, SPW Report, 1927, 16, 52; 1929, 21; 1930, 25; 1931, 27.

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mean “expensive.” Presumably, other counties were galvanized to achieve similar results.\textsuperscript{129}

Historian Richard Hawkins concluded that the New Deal did not appear to significantly help Hawai‘i recover from the early years of the Depression. While his assertion that the territory’s unemployment rate never reached the staggering proportions elsewhere in the U.S. is true, that does not diminish the effect of U.S. emergency programs on the islands. Hawkins’ study has a limited focus, and he does not consider the wider social and economic consequences of the New Deal in Hawai‘i. Some of the New Deal’s impacts are admittedly difficult to quantify. Seely noted that federal relief kept the “Golden Age” of highways going. As this chapter demonstrates, federal-aid programs not only initiated, but kept the territory’s highway projects on course. Hawkins asserted that the sugar oligarchy insulated the territory from the Depression’s worst effects and its economy achieved “respectable rates of economic growth throughout most of the 1930s.”\textsuperscript{130} The territorial government, however, did not fare as well. Without emergency appropriations, Hawai‘i’s federal highway program, in its infancy when the Great Depression struck, might not have sustained itself or survived. Instead, millions of dollars in federal appropriations helped achieve the islands’ highway system.

\textsuperscript{129} A. L. Burdick, \textit{Consolidated Report of the County Engineer’s Department of the County of Maui, Territory of Hawai‘i, 1935–1936} [Wailuku, Hawaii: H. W. Rice, 1936], 13. This pamphlet was produced “Compliments of H. W. Rice,” who was looking for citizens to support him in his “step along with progress.” While the report focused on Maui’s substantial achievements, local standards usually depended on traffic volumes and location. In some cases in isolated, remote areas, roads were built as nothing more than bulldozed tracks through the lava wilderness. On East Maui’s remote coast, for instance, the Kanaio-Nu‘u Road was a very rudimentary road that was literally bulldozed over the lava in the late 1940s (SPW Report, 1948, 30.).

The New Deal made its mark on the territory, as chapters five and six will illustrate. Its programs funded several long-awaited and eagerly anticipated projects, most notably the roads to and within Hawaii National Park. These byways accelerated HNP’s development, and in the long run, facilitated the promotion of tourism as Hawai‘i’s “third” industry. The New Deal also provided vital employment, especially in remote rural areas.

As noted, better byways facilitated growth by allowing residential areas in “healthier” rural environments to be developed. Another likely consequence was improved communication to the outside world, especially with the U.S. mainland, as better territorial roads carried products and people to seaports. Island leaders highlighted this goal in 1923 when they lobbied Congress to pass the Hawaii Bill of Rights.131

Delegate Baldwin astutely recognized that the odds were heavily against a territory with no vote in Congress. Despite this, Hawai‘i leaders tenaciously asserted their goals and succeeded in convincing Congress to grant it equal economic rights with the U.S. states. Delegate Kalaniana‘ole worked for fifteen years to prepare the foundation for the territory to acquire its “fair share” of U.S. revenue, including federal aid for roads. While some historians have portrayed Prince Kūhiō as an “unthinking puppet of the Republican Party,” native Hawaiian historians have countered that this was not the case. Roads were not Kalaniana‘ole’s top priority; native Hawaiian health and welfare were. He explained that he ran for Congress to “work for the benefit of Hawai‘i in

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Washington” and “for the prosperity of the Hawaiian People across this entire land.”

Kalaniana’ole, as with most road matters in the islands, stood as the lone Hawaiian representative in these efforts to obtain road funding. After the delegate’s death, Farrington, Frear, Thurston, and others initiated an aggressive campaign (as was their style) to win U.S. revenue for the territory. They cultivated their contacts in Washington, but also recognized the compelling legal argument presented within Hawai‘i’s Organic Act. The haole who continued Kalaniana’ole’s efforts consequently concentrated on Hawai‘i being an “integral part” of the United States and worked to more firmly entrench that status. Prince Kūhiō, having spent a year incarcerated for his role in attempting to restore Queen Lili‘uokalani to power, may not have supported this reasoning.

Roger Bell recognized that the Hawaii Bill of Rights protested against Congress’s political discrimination, but correctly noted that haole businessmen did not want political equality because that would threaten their power. He viewed the Hawaii Bill of Rights as an economic outcome. This was indeed the case, but it seems incongruous to separate the economic and political consequences. Farrington intensely emphasized Hawai‘i as an integral part of the Union, and U.S. appropriations accelerated that process.

Federal highway aid was part of the larger national pattern of reorganizing and professionalizing state (territorial) governments. Fein observed that road building in New York coincided with the development of U.S.

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133 Bell, Last Among Equals, 2-3, 54-55.
federalism. Hawai‘i was part of the broader national narrative. The territory’s inclusion into the federal highway programs was particularly important economically, but should also be viewed as another step on the territory’s path to political integration and statehood, which was achieved in 1959. Federal road and other appropriations were, for Hawai‘i, part of a state-building exercise.

Federal highway projects, as will be demonstrated with case studies of national park roads in chapters five and six, continued to be initiated by community activism. Local residents wanted certain byways, but in the end, projects with federal aid minimized citizens’ influence as national agencies, namely the BPR and NPS, took charge. This nevertheless produced favorable results as Hawai‘i obtained roads of higher technical and aesthetic quality. Had these byways been built using local funds, it may have taken decades, not years, to complete. This was indeed the primary attraction of federal aid for highways, even if it resulted in some loss of democratic participation in the process. The Hāna Belt Road, to be examined in chapter four, is an exceptional contrast, as the local community was forced to build on its own.

The next chapter examines O‘ahu’s Pali Road. Built as a footpath by and for Hawaiians, for more than a century the Pali Road was Hawai‘i’s "impossible" road construction project. The road’s long evolution stretched from the 1830s until the 1960s. Hawaiians were involved at critical junctions along the way, having built the original footpath and in 1898, participating in constructing a carriageway. In the end the islands’ most famous highway was defeated by topography and the requirements of federal aid.

134 Fein, Paving the Way, 16.
Chapter 3

From Footpath to Freeway

The island of O'ahu is dominated by two mountain ranges, the Wa'ianae and Ko'olau, which are separated by a large, central plateau. The rugged Ko'olau divide the windward district of the island from leeward Honolulu, which historically created a formidable barrier to transportation and communication. Located approximately six miles north of Honolulu at an elevation of 1,183 feet above sea level, the Nu'uanu ("cool heights") Pali, commonly known as the "Pali," is a section of the range dominated by a sheer precipice of serrated peaks 500 feet in height. The Pali was significant in Hawaiian history for the Battle of Nu'uanu, where Kamehameha conquered O'ahu in 1795, thus uniting the Hawaiian Islands. The Nu'uanu Pali was also crucial for its narrow pass, which provided Hawaiians the most direct travel route from windward O'ahu to Honolulu.¹ (Figure 5)

The most famous of Hawai'i's historic overland routes, the Pali Road is one of the few island thoroughfares documented in histories of the islands, although these accounts are typically brief and sometimes inaccurate.² The history of Hawai'i's roads would be incomplete without the Pali Trail and its successor byways.

¹ Hawai'i's climate is almost continuously buffeted by northeast tradewinds. The tradewinds' moist air interacts with the islands' mountainous terrain, creating the rainy climate characteristic for the "windward" or northeast sides of the islands, whilst blocking the rain on the drier "leeward" or southwest sides (Sonia P. Juvik and James O. Juvik, ed., Atlas of Hawai'i, 3d ed. [1973; Honolulu: University of Hawai'i Press, 1998], 49-59.)
This chapter focuses on native involvement with overland transportation by examining Hawaiians' association with the Pali Road. The early history of the pathway illustrates how Hawaiians traveled and used this track. Demands for improving the trail began by the 1830s and were led almost exclusively by foreigners. Both Hawaiians and foreigners recognized the importance of the Pali route, with prime agricultural lands on its windward side and Honolulu markets on the other. Over the decades, the Hawaiians' predominant function was to provide labor; they often had little voice in road matters. Improving the path was a constant challenge, as the expenditures associated with working over the rugged topography dictated that there was little engineers could do to radically transform the road. As a result, the trail was always a work in progress, with numerous upgrades rather than complete reconstruction.

In 1898 after more than forty years of demands for a carriage road, part-Hawaiian engineer John Wilson with his associate, Lou Whitehouse, finally constructed what had been considered the "impossible" road. Wilson and Whitehouse restored Hawaiian involvement with the Pali by hiring skilled Hawaiian laborers. Unskilled and low-paid Asian workers built much of the project by manual labor, yet modern technology was an important feature of the new road. Within a few years of completion, the new thoroughfare, like its predecessor path, became a series of continual improvements, primarily due to the introduction of the automobile. By the end of the 1920s heavier vehicles and O'ahu's increasing dependence on motor vehicles spelled the beginning of the end as the road was quickly becoming obsolete. What remained of Wilson's extensively modified "carriage" road was subject to several more decades of modifications before it was finally replaced by a four-lane freeway and tunnels in 1961.
Early Travel to the Pali

The Nu'uanu Pali was one of the earliest "must-see" spectacles for travelers to Hawai'i and as a result, is well documented. Unlike other popular destinations in nineteenth-century Hawai'i, the Pali was easily accessible. The Pali Trail is one of the few cases in which it is possible to demonstrate indigenous involvement in overland travel through the use of English-language materials. Early visitors chronicled not only their own excursions to the Pali, but also the Hawaiians’ use of the trail. These accounts demonstrate that
Hawaiians were not merely “people of the sea,” but adept engineers, builders, and fearless overland travelers.

Missionary William Ellis emphasized that the Nu’uanu Pali was “well worth the attention of every intelligent foreigner visiting Oahu.”¹ Nineteenth-century accounts generally noted three reasons to go: the journey from Honolulu to the Pali through the lushly vegetated Nu’uanu Valley, the view from the notoriously windy pass, and the Pali Trail descending the other side of the precipice. Foreigners were also beguiled by the renowned battle, where according to some accounts, Kamehameha’s forces drove the O’ahu warriors over the cliff; others contended they jumped rather than surrender.²

Excursionists to the Pali responded to the landscape in a fashion typical of the Romantic Era. Their descriptions exemplified the contemporary tendency to seek out spectacular scenery and interpret natural features as manifestations of the picturesque and sublime. In 1823 missionary Charles Stewart enthused, “Nothing short of the testimony of my own eyes, could have made me believe that there was so much of the ‘sublime and beautiful’ in the vicinity of Honoruru.” Stewart was amazed that it took only an hour to travel from Honolulu’s dusty plains and desolate seaside to the grandeur and solitude of the forest, where the only sounds were chirping birds and distant cascades. His narrative described Nu’uanu Valley, its “exuberance of vegetation almost incredible.” The roaring noise of the strong wind at the pass added to his “sublime” experience. Stewart found himself balancing on the brink of a

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thousand-foot precipice, with no parapet to protect him against “the fatal consequences of a false step.” Scrutinizing the narrow trail that descended the cliff, Stewart satisfied his curiosity by proceeding only a short distance, a “dangerous experiment” that was accomplished by “clinging from rock to rock, and from cliff to cliff.”

Ellis also found his experience “romantic and delightful,” although his prose was less lofty. He portrayed the superb scenery, but also the route. Ellis traveled on foot through Nu’uanu Valley, which rose steadily from Honolulu. Near the valley’s head, he ascended a steep section, passed through a hibiscus thicket, and emerged into an open area. The Pali burst upon him with an “almost overwhelming effect.” As remarkable as the scenery had been, the views from the summit were even more awesome. Ellis described immense masses of black rock towering hundreds of feet above him, and the “fearful” sight of the precipice dropping hundreds of feet below. The sheer mountains spread before him in both directions, while in the distance were white-capped ocean waves, verdant landscape, and the cottages of O‘ahu’s Ko‘olau Poko District.

Ellis described the conspicuous footpath that wound its way up the precipice’s north face. He recalled, “the ascent was at first gradual and easy, but in two places, towards the highest edge, the volcanic rocks appear to rise perpendicularly, presenting an even, and apparently projecting front, which it seem[ed] impossible to ascend[].” Despite the challenge of traversing an exposed pathway almost 500 feet above the ground, Ellis noticed that the Hawaiians passed over it without distress, often transporting heavy burdens.

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5 C. S. Stewart, Journal of a Residence in the Sandwich Islands during the Years 1823, 1824, 1825, 2d ed. (New York: John P. Haven, 1828), 206-209.
6 Ellis, Narrative of a Tour, 13-14.
well-known story claimed that a Hawaiian woman carried her drunken husband
down the track, but Ellis believed the tale was merely “one of those fabulous
wonders” told to amuse foreigners. In any case, he witnessed Hawaiians
bearing provisions for the king’s household up the “steep,” with one man
carrying a large pig on his back, though “not without difficulty.”

Ellis noted that Hawaiians placed idols and offerings along the
dangerous trail in hopes their akua (gods) would protect them. He commented
that the practice was common on dangerous paths. George Byron of the
H.M.S. Blonde confirmed this habit, while remarking that the descent down the
Pali was the “most fearful imaginable.” In some places, the trail consisted of
little more than holes cut in the rocks for hands and feet. At its “most
commodious,” the path sat on a narrow ledge, where a misstep would have led
to “inevitable destruction.” Byron also disclosed that the Pali had a predecessor
path that was infinitely worse. It followed a different, shorter route through the
mountains and was precipitous on both sides, “there being no possibility of
climbing them, ladders of coiar [sic]-rope were used.”

Numerous accounts testified to Nu‘uanu Pali’s popularity with visitors,
while also providing further evidence of the astonishing trail and how it was
regarded by both Hawaiians and foreigners. The Blonde’s naturalist, Andrew
Bloxam, recalled only one dangerous spot, which was an almost perpendicular,
thirty-foot descent down small, projecting ledges worn smooth by the
Hawaiians’ bare feet. Before descending, Bloxam’s party handed its guns and
belongings to the “natives” to pass down. They then proceeded barefoot to
prevent slipping, “as one false step might have been fatal.” Bloxam was

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7 Ellis, Narrative of a Tour, 14.
8 Ellis, Narrative of a Tour, 14-15.
9 George Anson Byron, Voyage of the H. M. S. Blonde to the Sandwich Islands in the
Years 1824-1825 (London: John Murray, 1826), 140-141. Coir rope was made of coconut husk.
fascinated with the Hawaiians' ease in traversing the path, even with heavy loads, in contrast to his party, which cautiously ascended the mountain wall on both hands and feet.  

Bloxam's colleague, James MacRae, planned to cross the Pali and return by sea the following day. He noted his "most difficult" descent down the rocky winding path, "quite perpendicular." MacRae discerned the Hawaiians' amusement in watching foreigners proceed down the trail in terror, barefooted, scrambling as best as they could, sometimes going backwards on all fours. The Hawaiians protected foreigners from mishaps while carrying their own loads with "perfect ease." The next day, MacRae's party learned they could not take the boat back to Honolulu, and much to their dismay, had to ascend the precipice they had already found so difficult. During their return journey, they witnessed Hawaiians loaded with provisions for the chiefs, including large hogs tied carried over their backs, as well as bundles of kalo (taro) or large calabashes of poi hanging from both ends of a stick balanced over their shoulder. They moved with a "short shuffling step, stopping to rest themselves every now and then, and to have a draw in turn from a wooden tobacco pipe."  

John Townsend was surprised to see that every man carried a burden on the "sort of rude path," noting that sometimes the poles laden with calabashes were carried between two Hawaiians.  

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For Hawaiians, the Pali Trail was an expedient way to deliver their produce to Honolulu. The windward district featured a broad coastal plain of abundant kalo lo'i (taro patches). The hinterland likely produced great quantities of sweet potato, yam, banana, upland kalo, and other products.\textsuperscript{13} Commenting on the Hawaiians’ conception of the trail, missionary Reuben Tinker remarked that they saw nothing “wonderful or difficult,” rather it was a “common highway . . . the main road connecting the opposite sides of the island . . . .” Mothers with children crossed the most precipitous spots, “careless of danger as if they were on a level plain.” The only thing that amazed Tinker’s Hawaiian guide was Tinker’s awkwardness and fear. Tinker conceded that repeated trips made him more comfortable with the path, but “it seemed never very much to gain the confidence of the foreigners; white men sometimes descended; women came to the brow and looked, but none ventured to trespass further” until Mrs. Tinker became the first white woman to descend the track.\textsuperscript{14} For foreigners, the Pali route remained primarily a tourist attraction, though missionaries relied on the road for cross-island transportation.

In addition to traveling the Pali trail to facilitate their affairs, Hawaiians profited from sightseers. Townsend mentioned that his party was accompanied by several “native” boys. Just below the pass, the boys stayed with the horses while the visitors ascended to the edge of the precipice.\textsuperscript{15} U.S. Navy surgeon William Wood related that as he rode alone up Nu’uanu Valley, a “kanaka” (Hawaiian, man) approached alongside him. After the Hawaiian had traveled with him a mile or two, Wood handed him his overcoat, an indication that he

\textsuperscript{13} E.S. Craighill Handy and Elizabeth Green Handy, with Mary Kawena Pukui, \textit{Native Planters in Old Hawaii, Their Life, Lore, and Environment}, Bernice P. Bishop Museum Bulletin 233 (Honolulu: Bishop Museum Press, 1972), 452.
\textsuperscript{14} Reuben Tinker, “Extracts from a Journal, 1836–1838,” 7 March 1849, at the Hawaiian Mission Children’s Society, hereinafter HMCS.
\textsuperscript{15} Townsend, \textit{Narrative of a Journey}, 201.
"acknowledged and employed" the man, who was very pleased and promptly rendered the surgeon "every attention." Wood was impressed with the Hawaiians' kindness as they silently greeted each other when passing, exchanging a "whiff or two" of pipe or cigar. Near the summit, as was customary, Wood left his horse with the Hawaiian for safekeeping. Returning much later, he was "well pleased" to find the horse, apparently surprised that other Hawaiians walking the Pali route had not ridden it to Honolulu. Wood declared this was one of many indications he witnessed regarding the natives' "present" honesty, implying that Hawaiians were not trustworthy prior to missionary influence in the islands.\(^{16}\)

*Improving the Trail for Man and Beast*

Within twenty years of the missionaries' 1820 arrival in Hawai'i, the Pali Trail was being improved, often with modern technology. Tinker noted that a Boston merchant named Hinckley wanted to "level" the trail and spent considerable time digging and blasting, but ultimately failed to finish his project. A "great" improvement was made when stairs were cut into the steepest parts. In 1837, the newspaper *Ke Kumu Hawaii*, edited by Tinker, mentioned that (missionary Alanson) Beers was working on the Pali. Tinker credited Beers, a blacksmith, with installing an iron railing, a "lasting and honorable memorial" to a man who was only briefly in the islands.\(^{17}\) James Jarvis confirmed, without

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\(^{17}\) Tinker, "Extracts from a Journal, 1836–1838," 7 March 1849; and "No Ka Pali," *Ke Kumu Hawaii*, 26 April 1837.
elaborating, that “native ingenuity and foreign art” had made a “comparatively easy path,” which helped in supplying the Honolulu market.\textsuperscript{18}

Explorer Charles Wilkes acknowledged that the steps and iron rod assisted his safe descent in 1840. He observed that the path led to the “little frequented” village of Kāne’ohe, probably an indication that although travelers visited the pass, many dared not descend the track.\textsuperscript{19} Wood portrayed the path as a series of narrow shelves, some of which were connected by platforms or steps. The iron rod allowed him to “sustain” himself as he descended along a cliff on a projection just wide enough for a foothold. Even with improvements, Wood reached the trail’s end “quite fatigued,” his shirt “wringing with perspiration.” After resting himself by wandering amongst the “natives” houses, Wood ascended back over the Pali.\textsuperscript{20}

In 1840, a large tract of land at Kāne’ohe was leased to Hawaiians growing sugar cane. They petitioned the king for permission to build a toll road for horse and mule travel over the Pali. Although missionary Benjamin Parker indicated that work had begun, no further evidence of this project was found.\textsuperscript{21} Historian Ralph Kuykendall confirmed that three or four young Hawaiians had started a small plantation in the Ko‘olau District in 1840, and that mills were established in many places.\textsuperscript{22}

The Hawaiian government inaugurated the first major transformation of the Pali Trail in 1845, when the minister of the interior reported that a good

\textsuperscript{18} James J. Jarves, \textit{Scenes and Scenery in the Sandwich Islands, and a Trip Through Central America: Being Observations from my Note-Book During the Years 1837–1842} (Boston; James Munroe and Co., 1843), 57-58.

\textsuperscript{19} Charles Wilkes, \textit{Narrative of the United States Exploring Expedition, During the Years 1838, 1839, 1840, 1841, 1842}, vol. 3 (Philadelphia: n.p., 1849), 391.


\textsuperscript{21} Benjamin W. Parker, “Kaneohe Station Report,” 1840, in the Mission Station Reports, 1822-1865, TS, at the HMCS, 15, hereinafter “Kaneohe Station Report.”

“horse-drawn road” was nearly finished. The minister also discussed the potential for agricultural development, implying that good roads were necessary.23

Danish commander Steen Bille scrutinized various aspects of the Pali construction. Although the precipice track was being improved, he complained that the path through Nu’uanu Valley remained a “bottomless mire of mud.” Demonstrating that road work has always created inconvenience, Bille noticed that only an occasional Hawaiian traversed the track because it was nearly impassable. The project was supervised by an Englishman, a “kind of road engineer.” Apparently hesitating to label this as “new” construction, he related that a “more passable road” that permitted horses to cross the mountains was supposed to open within a few days. Bille noted that the project was “ostensibly a government undertaking,” but in reality, it was “principally furthered by the industrious missionaries.” Bille was probably referring to the fact that the missionaries controlled more than just religious affairs, or that the minister of the interior, who was responsible for public improvements, was Gerrit Judd, a former missionary doctor.

Like many travelers, the Pali’s impressive location inspired Bille to write about the annihilation of the Hawaiian warriors in 1795. Contemplating the blasting being done to improve the trail, he presaged a day in the not-too-distant future when a fast stagecoach would speed over the mountain. Bille correctly anticipated that a new route would obliterate the original, dangerous trail and obscure the impression of the historic battle site. His party then experienced a

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23 Gerrit P. Judd, Minister of the Interior, Report, 1845, 10.
“breakneck” descent down the track, which forced them to crawl more than they walked.24

The new trail opened to the public in June 1845, when Kamehameha III, accompanied by Judd, first traveled the road on horseback.25 The Polynesian predicted that the new pathway would be a boon to farmers, who would no longer have to spend an inordinate amount of their time transporting a back-load of crops worth only fifty cents. The track was expected to be the impetus for farmers to hire Hawaiians with “droves of donkeys” to take their produce to Honolulu markets.26 Missionary Benjamin Parker concurred that the trail would be a “great advantage” and increase freight volumes, stressing that Hawaiians living along forty miles of seacoast relied on the Pali Trail to transport crops.27

As would often become the case when constructing roads in Hawai‘i, the new horse trail was just the beginning. By 1848 it required substantial repair after heavy rain destroyed an embankment. In order to make the trail more durable, a new section of road was cut from solid rock. This work was “necessarily slow,” with the government using prisoners doing hand labor, not dynamite. Seventy Hawaiians worked on the trail in 1848; it is not known what they accomplished.28

In 1846, Minister of the Interior Keoni Ana asserted that the Polynesian’s predictions had materialized. The trail was purportedly “thronged with horses and mules, so that Koolau [was] exceedingly enriched by it.” According to Ana, people were pleased that mules and horses were hauling “in great abundance”

25 Polynesian, 28 June 1845. 
26 Polynesian, 5 July 1845. 
28 Keoni Ana, Minister of the Interior, Report, 1848, 5; and Parker, “Kaneohe Station Report,” 1848, 4.
the produce that had formerly been carried on men’s backs. Ana wanted to improve trails around all of the islands for the “convenience of transporting produce.” The Pali horse trail was the kingdom’s crowning achievement for public works in 1846, but Ana admitted that little else had been accomplished, as “the embarrassed state of our foreign relations” had precluded such activities.

*Kāne‘ohe, a History of Change* iterated Ana’s claim that the trail was “thronged” with users. This book failed to cite a lengthy article in the *Sandwich Island News* that rebutted the minister’s report as an “enormous exaggeration.” The unidentified writer declared that the “simple unvarnished truth” was that few animals were carrying surplus poi, pigs, melons, potatoes, cabbages, and grain to the Honolulu “metropolis.” The article recognized the tremendous possibilities for agriculture in windward O‘ahu, which would not only supply the “native” population and Honolulu, but could also furnish the growing new American markets of Oregon and California. “We will hope,” the writer continued, “that the spirit of enterprise that has constructed the road, will also stimulate the production at its termination, so that it may be really useful.”

The author praised the government’s achievement in finishing the horse road, but also emphasized previous efforts by Hawaiians and foreigners to improve the trail. Helen Chapin, who chronicled the role of newspapers in Hawai‘i’s history, disclosed that the anti-missionary *Sandwich Island News* was the mouthpiece of non-missionary foreign business interests. As such, it often

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29 Ana, Minister of the Interior, *Report*, 1846, 4-6. See Kuykendall, *The Hawaiian Kingdom, Foundation and Transformation*, chapters twelve through fourteen, for information on the turbulent nature of politics and foreign affairs in Hawai‘i during the 1840s.
31 “Ministerial Reports,” *Sandwich Island News*, 4 November 1846.
32 “Ministerial Reports,” *Sandwich Island News*, 4 November 1846.
printed essays that scorned Judd and may have been eager to highlight that the trail built under his tenure had not realized its potential.³³

*Getting Carts Over the Pass*

Several letters to the *Polynesian* highlighted residents’ frustrations and expectations for the Pali Trail and Koʻolau Poko District in 1852. A “friend of good roads” complained that no work had been done in the windward district, noting that a “faithful and judicious outlay of the road tax” could have built much-needed cart roads to the foot of the Pali. He criticized the inefficient system that did not provide workers with appropriate tools or supervision, which resulted in labor of “little use” that only served to perpetuate “bad habits.” The writer was pleased that the road through Nuʻuanu Valley had been improved, but suggested that a similar effort be applied to build a good carriage and cart road over the Pali. He realized that the Pali Trail was “about as good a road as it can be made,” but surmised that Oʻahu residents would never be satisfied until a tunnel was dug through the mountains. “Friend” suggested that a tunnel could be built for the budget devoted to furnishing the king’s troops and with a little more labor than had already been expended on cutting and blasting the trail.³⁴

“Farmer” responded to this “friend of good roads” by mocking him. He claimed that cart roads were too expensive to build through the district’s swampy areas. He agreed there were labor tax problems, but stated that the situation would not improve as long as supervisors were better at canvassing their electorate than building roads. Overall, “Farmer” emphasized that there

³³ Helen Geracimos Chapin, “Newspapers of Hawaiʻi 1834 to 1903: From “He Liona” to the Pacific Cable,” *Hawaiian Journal of History* 18 (1984): 63-64. For more about Hawaiʻi’s newspapers and the interest groups they represented, consult Chapin’s *Shaping History: the Role of Newspapers in Hawaiʻi* (Honolulu: University of Hawaiʻi Press, 1996).
³⁴ “Roads, Public Nuisances, &c.,” *Polynesian*, 6 November 1852.
simply was not enough money for the district's projects, believing that the only way to get the necessary pathways was to erect toll gates to pay for them. Regarding the proposed Pali tunnel, “Farmer” predicted that if residents would not be satisfied until this dream materialized, he anticipated a very long period of discontent. “Friend” countered that agriculturalists did not favor toll roads. If the Pali trail could not be improved, he stressed that a cart road was needed to connect farmers with the schooner landing so that produce could be shipped by sea.

Residents also delivered their demands to the government. An undated petition to the minister of the interior, probably about 1857, requested a good road be constructed over the Pali and to Waialua on O’ahu’s far north shore. The petitioners noted the need for a route through the island’s largest expanse of fertile land, which they claimed was increasingly being developed to supply Honolulu’s market. “Large quantities of produce,” they asserted, were “daily brought over a bad road[,] greatly enhancing their price in Honolulu.” A better road would increase freight and bring more reasonable prices. Signed by fifty-five men, the petition included some of Honolulu’s most prominent haole: Charles Bishop, Lorrin Andrews, Levi Chamberlain, and H. Hackfeld among them. These notables opined that a good road would increase business and pleasure travel, which were both essential to the “health of the rapidly increasing population of our city, and also to the development of the resources of our Island.” They requested $5,000 for the work, as well as prisoners to complete it. The Pacific Commercial Advertiser (PCA) newspaper reported that the government, in response to a formal petition, allotted $2,000 to upgrade

37 Petition to the Minister of the Interior, John Young [Keoni Ana], [1857], Interior Department, Misc., Document 64, HSA.
the road, employing two or three foreigners and about twenty Hawaiian
laborers.\textsuperscript{38}

Superintendent of Public Works (SPW) Metcalf, probably responding to
these demands, directed civil engineer William Webster to study the feasibility
of building a wagon road. Webster’s 1857 survey concluded that the horse trail,
even with “considerable improvement,” would be too steep for carriage traffic
and impassable due to its “many and acute bends.” The engineer therefore
recommended an entirely new route, noting that it was the best alignment he
could devise without a tunnel, which would be “rather heavy work.” Even so,
the proposed route was impractical, with an average grade of 20 percent, and
as great as 28 percent in some locations.\textsuperscript{39}

Webster explained that he had never seen a carriage road steeper than
10 percent, except for a short distance. His new road would require substantial
cutting, blasting, and 1,200 feet of ditches, which would cost over $18,000.
Webster’s findings concurred with what the SPW already knew: rather than
build an expensive new trail, the government would be wiser to hire a “proper”
foreman and gang to level the horse path and install proper drainage.\textsuperscript{40}
Webster’s survey was probably the first (of many) to be defeated by topography.
The government subsequently committed itself to maintaining the Pali Trail,

\textsuperscript{38} “The Nuuanu Pali,” \textit{Pacific Commercial Advertiser}, 25 June 1857, hereinafter cited as \textit{PCA}. The \textit{PCA} is a major source of information for this chapter. Started in 1856, the \textit{PCA} was
the first major secular newspaper to be printed in English. Helen Chapin classified this paper as
“establishment,” representing the “ascendant haole missionary-planter-business elite” that was
not itself part of the Protestant mission (Chapin, “Newspapers of Hawai‘i,” \textit{Hawaiian Journal of
History} 18 [1984]: 54-55). Native Hawaiian historian Noenoe Silva agrees with Chapin’s
classification of the newspaper, noting that “establishment” meant that the paper represented
the “dominant and prevailing interests” (Noenoe K. Silva, \textit{Aloha Betrayed: Native Hawaiian

\textsuperscript{39} William Webster to [Thomas] Metcalf, SPW, 9 August 1857, Interior Department, Box
50, Subject Files, Roads, Pali, HSA.

\textsuperscript{40} William Webster to [Thomas] Metcalf, SPW, 9 August 1857. R. C. Wylie referred to
Webster as a “civil engineer” (“Discourse on Roads,” \textit{Transactions of the Royal Hawaiian
Agricultural Society} 2, no. 3 [1856], 76).
directing the road supervisor to "of course employ as much native labor as possible in order to reduce the expense."\textsuperscript{41}

Fifteen years after the horse trail opened, the minister of the interior's anticipated agricultural boom had not materialized. Sugar and rice were grown on the windward side, but the Pali Trail remained a primitive thoroughfare. The PCA reported some progress when Dr. Judd and Reverend Corwin drove the first four-wheeled vehicle, a one-horse wagon, down the path, prompting speculation that the trail would become a popular carriageway into the potential farming district. Dr. Judd's feat was not easy. His son led the horse, the rear wheels were locked, and several Hawaiians held the cart back with a rope. Near the bottom, the cart, horse, and passengers were upset into a ditch, but luckily without injuries or damage.\textsuperscript{42}

The following year a buggy was driven up the Pali for the first time, which was considered quite an accomplishment. "When sugar plantations, thick as the leaves in Vallambrosa's shade, dot the Island of Oahu," a reporter speculated, "such drives will be of every day occurrence." Despite these noteworthy achievements, Reverend Rufus Anderson emphasized that the trail would never be "comfortable," as travelers would always look down over a precipice. He believed that the trail would eventually be converted into a zigzagging carriage road with sharp turns, making it "practicable," but that was all he "feared" could be said for it.\textsuperscript{43}

\textsuperscript{41} S. Spencer to T. G. Harding, 5 December 1857, Interior Department, Book 6, 480, HSA.
\textsuperscript{42} Untitled, PCA, 12 September 1861; and Joel Bean, "A Tour Around Oahu In 1861," \textit{The Friend}, November 1906, 6.
\textsuperscript{43} "Carriage Drive Around the Island," PCA, 14 May 1862; and Rufus Anderson, \textit{The Hawaiian Islands: their Progress and Condition under Missionary Labors} (Boston: Gould and Lincoln, 1865), 212.
Newspaper accounts demonstrated that the Pali Trail was not merely difficult, but also dangerous. In 1866 a horse stumbled and fell over the cliff to its death; its fortunate rider escaped serious injury when he was caught in some bushes. Four years later a Chinese rice farmer tumbled to his death while riding his horse over the Pali. Even when the trail did not cause accidents, the notorious winds did. H. H. Sawyer, riding his horse and leading another loaded with butter, approached the pass in 1862. A “whirlwind, frequent in that area,” blew both horses over the precipice, but the rider managed to jump just in time to save himself. Although the feat of guiding wagons over the trail was initially celebrated, by 1869 drivers were warned not to attempt the daring stunt.44

Photograph 2: Nu'uanu Pali Road, 1931.
This aerial photograph highlights the difficult terrain that challenged engineers as they designed a succession of Pali road construction projects. (Courtesy U.S. Army Museum of Hawaii, General Wells Collection, UHAMH Photo #4989.)

44 "Notes of the Week," PCA, 15 September 1866; "Notes of the Week," PCA, 1 January 1870; "Accident at the Pali," PCA, 12 June 1862; and "Notes of the Week," PCA, 12 June 1869.

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The Tortuous Path to a Carriage Road

Robert Stirling surveyed the Pali Trail in 1870 to determine the feasibility of reconstructing it into a carriageway. Stirling emphasized two points: the work required to make the road "really serviceable" and the "extreme difficulty" that this would entail. The chief technical hurdle was the cliff's steep pitch. Stirling explained that the general rule was that carriage roads should not have sharp curves, nor be more than a 5-percent grade over broken-stone pavement. He pointed out that some Hawai'i wagon roads were as steep as 20 percent, but only for very short distances that had no tight curves.45

Stirling explained the grade problem by calculating that the force required to pull a given load over one mile of road with a 10-percent grade was the equivalent of drawing the same load over six miles of level road. He clarified how topography impacted the proposed new road. The steepest part of the trail was near the summit, with a 33-percent grade over 1,000 feet. Working in this area would be extremely expensive due to the "precipitous nature of the ground." In other words, construction would be difficult and require significant blasting. Another portion of the trail was about 3,000 feet in length, with a 23-percent grade. To make this a suitable grade for carriages, the road would have to be rebuilt to nearly five times its existing length. Stirling also articulated that the area's frequent, heavy rains would make water flow like a river down the track, even if the grade was only 5 percent. The roadway would therefore have to be paved to facilitate good maintenance, necessitating another substantial expense. Stirling frankly admitted that he could not recommend the

45 Robert Stirling, "Report of Mr. Robt Stirling to the Minister of the Interior on the Feasibility of Re-Constructing the Nuuanu Pali Road," 26 April 1870, Interior Department, Manuscript, Interior Document 2, HSA.
large expenditure that this difficult project would entail, an estimated $50,000, and perhaps "a great deal more."\(^{46}\)

Stirling's report appeared in the *Hawaiian Gazette*, a government newspaper, which noted that residents were again pleading with authorities to build a carriageway. Though the endeavor would benefit agriculture, the newspaper attempted to convince its readers that the project's great expense made it impractical, especially as existing ocean transportation was considered to be cheap, safe, and reliable.\(^{47}\) The minister of finance accepted Stirling's expertise, agreeing:

> It would hardly be possible to make a good Wagon Road on this site at all, as the descent is too rapid to admit of a moderate grade, and the expense of such an undertaking would be enormous. Any attempt to modify the present road farther than to keep in the best possible repair, would only be to throw away money.\(^{48}\)

The Hawaiian Legislature, apparently acquiescing to residents' demands, disregarded Stirling's conclusions and appropriated $20,000 for a new road. A *PCA* article the following year iterated the importance of developing agriculture in windward O'ahu, which could only be accomplished by means of a good cart road over the Pali. In contrast to the *Hawaiian Gazette*, the *PCA* regarded coasting vessels as "roundabout and unsafe." The establishment newspaper of the haole missionary-planter-business elite, the *PCA* habitually criticized the Hawaiian government for failing to take action. It reported that a "gentleman" in Honolulu claimed that he could build a thoroughfare with a 12-percent grade for $30,000.\(^{49}\) The *PCA* did not state how he planned to accomplish this, nor how the additional $10,000 would be generated.

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\(^{46}\) Robert Stirling, "Report of Mr. Robt Stirling," 26 April 1870.
\(^{47}\) "The Pali Road," *Hawaiian Gazette*, 15 June 1870.
\(^{48}\) J. Mott-Smith, Minister of Finance, *Report*, 1870, 15.
\(^{49}\) "The Pali Road," *PCA*, 4 March 1871.
After the Stirling survey, the Pali Trail disappeared from government records until the 1880s, probably defeated by the topographical and financial challenges of the proposed carriage road. Although the 1870 legislative appropriation was "very liberal considering the resources of the country," the minister of the interior recognized it was "entirely inadequate to make a good cart and carriage road; the accomplishment of which could alone justify a large expenditure in that direction."  

The cart road was not forgotten; complaints, appeals, and accidents continued. After a traveler reported falling rocks in the same place where a landslide had killed a Hawaiian, the PCA scolded the Hawaiian government by noting it was a "standing disgrace to the country that we have not a good road to Koolau." The *Hawaiian Gazette* encouraged the government to find a way to build a cart road, stressing that it was of critical commercial importance. The newspaper reported that another engineer had surveyed the path and concluded that it was "perfectly feasible" to build a sufficient cart road or tramway for the "reasonable sum" of $42,500, which would cheaply transport sugar, rice, bananas, and other produce to Honolulu. The newspaper advised that if the government could not build the road, then private enterprise should be allowed to invest in it as a toll road. Several months after this appeal, a lucky Hawaiian escaped injury when his horse was killed by a falling rock. The PCA reprimanded authorities, demanding, "When are we to have the new and safe road over this bugbear to communication with the finest and most valuable part of this island?"

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51 "Notes of the Week," PCA, 27 November 1875.  
52 Untitled, *Hawaiian Gazette*, 20 December 1876.  
53 "Brief Mention," PCA, 10 February 1877.
Notwithstanding these problems, the Pali Trail was heavily traveled, with enough traffic to patronize the Half-Way House restaurant.\textsuperscript{54} Koʻolau residents used the path to attend to business, despite its condition being a "subject of alarm." The winter rainy season caused frequent rockfalls; in 1878 a Hawaiian was killed and two others suffered broken arms. Once again, calls arose for the government to hire a "competent" engineer to determine a feasible plan for a good carriage road.\textsuperscript{55}

The 1880 legislature approved $30,000 for "cutting down, and making an easy grade [Pali] road, by way of the present precipitous highway." The PCA, of course, supported this plan, but also suggested an alternative route via the adjacent Kalihi Valley. The Kalihi route was advantageous for several reasons. First, a "competent engineer" claimed that a road having an easy 2-percent grade could be built to the head of the valley and then through a tunnel in the Koʻolau. Secondly, this route would open Kalihi Valley to "patch cultivators" who would transform the area into market garden and poultry ranch for Honolulu. An investor was supposedly ready to build this toll road. In this scenario, Oʻahu might have both routes: one toll road via Kalihi and the government road via Nuʻuanu Pali. No matter how attractive this proposal seemed, it was likely as difficult as the challenge presented by the Pali: the tunnel alone, at 1.35 miles long, would cost $39,000.\textsuperscript{56}

The tramway and Kalihi proposals deserve further comment. Decades of complaints about the Pali Road had provided few alternatives for improvement, primarily because it was an almost insurmountable challenge at the time. The writer to the Polynesian in 1852 suggested a tunnel, which would have only

\textsuperscript{54} "Brief Mention," PCA, 7 July 1877.
\textsuperscript{55} "Brief Mention," PCA, 27 July 1878; and "The Pali Road," PCA, 2 August 1879.
\textsuperscript{56} Untitled, PCA, 4 December 1880.
provided a partial solution as the path down the windward side would still have to somehow traverse the sheer precipice. The tunnel proposal was not implausible, as relatively small-scale irrigation projects with tunnels were being built in the islands by the 1850s. The only other options were to build the road through other valleys and mountain passes. These, too, would be difficult and expensive, especially since a road from Honolulu through Nu’uanu Valley already reached the mountain summit. It is uncertain whether a tramway would have provided a workable solution or preferred option over land or ocean travel since the idea was probably never studied. The tramway would have the same disadvantage as the coaster, holding patrons subject to timetables. Only a public road would provide unimpeded freedom to travel whether for pleasure or business.

Eight months after the $30,000 appropriation, no work had commenced and the PCA again focused attention on the Pali Trail, which was so bad even a tourist had complained. “The road for the last two miles before reaching the Pali,” according to the newspaper, was “in an abominable condition, and that down the face of the Pali has long been so unsafe that only very adventurous persons attempt to ride down it.”

Despite the perception that the government was ignoring the Pali Road, archival documents indicate otherwise. P. A. de la Nux, a “civil engineer” in Los Angeles, offered to build the road in 1882 and mentioned that other builders were unwilling to take the project because they believed that $30,000 was insufficient. De la Nux claimed that he had surveyed the Pali and could build a

56 “Notes of the Week,” *PCA*, 27 August 1881.
feasible road that would be no steeper than other island pathways. His proposal seemed long on promises, but short on details.⁵⁹

The minister of the interior had already directed William Lawrence to survey the Pali. Lawrence was an engineer experienced in building railroads in mountainous countries. He prepared a detailed report, profile, cross-section, and specifications for a new route. Lawrence proposed to replace 3,500 feet of path on a 36-percent grade with a 5,050-foot roadway having a maximum grade of 14 percent. The new trail would allow a wagon carrying one ton to ascend without difficulty. Lawrence’s survey included 3,300 feet of protective rails. One noteworthy feature was that where the roadbed was cut from solid rock (as opposed to a built embankment), it would feature transverse grooves to provide traction for animals.

Lawrence furthermore recognized the hazard of falling rocks. His route avoided areas prone to landslides and recommended removing the cliff’s loose material. An exceptional aspect of his design was that the old road would serve as a catchment for rain and rockfalls. Lawrence admitted that construction would be difficult due to the Pali’s violent winds, heavy rains, and precipitous terrain. He planned safety precautions, including danger signals and guards to protect travelers, as well as notices for road closures and blasting. Lawrence’s estimate for the new road was $34,080.⁶⁰ Word of Lawrence’s survey spread to

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⁵⁹ P. A. de La Nux to Minister of the Interior, 8 March 1882, Interior Department, Box 50, Subject Files, Roads, Pali, HSA. The gentleman making this proposal was probably Pierre C. August de La Nux, a civil engineer who was credited with surveying and mapping most of O’ahu and Kaua‘i, as well as building the Anahola ditch on Kaua‘i (J. W. Siddall, ed., Men of Hawaii, vol. 2 [(Honolulu): Honolulu Star-Bulletin, Ltd., 1921], 125.)

⁶⁰ William N. Armstrong, Minister of the Interior (ad interim), Report, 1882, 15; William R. Lawrence, “Report to the Minister of the Interior,” 25 March 1882 and 29 March 1882; “Estimate of Cost of Constructing a New Road at Nuuanu Pali,” 31 March 1882; and “Specifications for Construction of a New Road at Nuuanu Pali,” 31 March 1882, all in the Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
San Francisco, from where Houseman and Jordan sent a brief proposal. It is unclear what became of Lawrence's survey.

The legislature appropriated $45,000 for the Pali Road in 1886. In 1887 the PCA reported that $75,000 was authorized from a "loan fund," adding that it was "full time the Government bestirred itself in this matter." The newspaper described the project, which was not difficult and had a grade of "only" 16 percent. The PCA concluded, "A good road across Nuuanu Pali would be a permanent and useful improvement, which taxpayers at large and 'strangers within our gates' would appreciate." 62

Eight months later, the PCA again drew attention to a "timely subject." O'ahu's transportation was rapidly advancing. Its street railways highlighted the need to improve the Pali route, since a railroad across the rugged mountains was unrealistic. As such, it was imperative that the government address what for years had been a "crying need:" a practicable carriage road that could be driven with ease and safety by those of "ordinary skill." The article lambasted Hawaiian authorities:

The way in which this important matter has been trifled with for years forms by no means the least disgraceful of the many disgraceful chapters in the past administrative history of the country. The repeated large appropriations, never expended, or squandered on senseless projects, the positive and reiterated promises made only to be broken, and the patience of the people whose interests and convenience were contemptuously ignored, are all matters still fresh in our memories.

61 Chas. W. Housman and D. Jordan to Minister of the Interior John E. Bush, 20 October 1882, Interior Department, Box 50, Subject Files, Roads, Pali, HSA. Dennis Devaney and others claimed that work began on Lawrence's route, citing the Housman/Jordan letter as a confirmation of contract (Dennis M. Devaney et. al., Kāneʻohe, a History of Change, 168). The Housman/Jordan document appeared to be a proposal to build the Pali road; no evidence of its acceptance or work was located.

62 Armstrong, Minister of the Interior (ad interim), Report, 1886, 51; and "Nuuanu Pali Road," PCA, 16 April 1887.
The PCA condemned the legislature for shirking its duty, appropriating only $10,000 rather than the $30,000 necessary for the new road.\textsuperscript{63} 

Minister of the Interior Lorrin Thurston also expressed his exasperation over the Pali Road, which he observed had been discussed for altogether too many years. "It suffices to say," Thurston asserted, "the time seems ripe for proceeding with this improvement, and it is urgently recommended."\textsuperscript{64} The acrimony displayed by the PCA and Thurston over the government inaction was not an odd coincidence. Helen Chapin revealed that several of the newspaper's editors between 1887 and 1900 helped impose the "Bayonet Constitution" and conspired to overthrow the Hawaiian monarchy in 1893. Thurston, the acknowledged ringleader of this conspiracy, became the PCA editor and publisher in 1900.\textsuperscript{65}

Frustration over the government's inaction was not limited to the haole establishment. At some point between 1890 and 1892, J. H. Pamaiaulu and 128 other Ko'olau "citizens of her Majesty the Queen" petitioned the government to rebuild the trail according to the legislature's 1890 appropriation bill. These residents, at least some of whom were Hawaiian, stressed they had paid their taxes to the kingdom's treasury and wanted the road construction to start immediately. The petitioners claimed that the project would be a "means of relieving us of some of the difficulties that we have waited for a long time, now past."\textsuperscript{66} They did not explain their "difficulties," nor why they supported the undertaking. John Watson and fifty-one others submitted a petition asking that work commence so that Ko'olau residents could obtain employment at a

\textsuperscript{63} "The Pali Road," \textit{PCA}, 26 January 1889. 
\textsuperscript{64} Lorrin A. Thurston, Minister of the Interior, \textit{Report}, 1890, 265. 
\textsuperscript{66} J. H. Pamaiaulu and 128 Others to Minister of the Interior Chas. N. Spencer, undated, translated by Arthur Keawe, Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
"proper" wage. Both foreigners and Hawaiians signed this document in support of needy Ko'olau families that wanted work.67

Whatever work was done on the Pali road did not go well. It is also evident that despite the haole perception that indigenes did not labor diligently, Hawaiians also expressed their concerns about work ethics. A letter from "Puhi and 26 others" complained to Thurston that two luna (overseers) superintending the trail project were unfit for government work. The laborers complained about luna Powers, charging that he was home drunk for much of a two-month period, directed his employees to do non-government work, had an employee leave the job to go buy liquor, and paid others for labor they did not do. The other overseer, Kimo Kelly, also came to work drunk and used employees to do personal tasks, which had been personally witnessed by Minister of the Interior Thurston. The complainants respectfully asked that Thurston "check carefully the misconduct of our superiors," and if their charges were accurate, dismiss the overseers for the "good of our Government."68

SPW William Rowell was already aware of these charges; nevertheless he visited the site and interviewed those involved. He learned that Puhi had submitted his accusations well after the incidents occurred. As such, some of the problems, including the prolonged incidents of drunkenness, were probably not ongoing. Rowell seemed to recognize Puhi's sincerity, but also noted that his letter was a response to being discharged, apparently for instigating men to walk off the job after they had been scolded for being late. Rowell failed to draw many conclusions from Puhi's charges, other than the fact that some workers disliked Kelly. He already knew that Powers was not a satisfactory luna and

67 John Watson and 51 Others to Minister of the Interior Chas. N. Spencer, translated by Arthur Keawe, Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
68 Puhi and 26 Others to L. A. Thurston, [1890], translated by Arthur Keawe, Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
that Kelly was only efficient under close supervision. Rowell's most significant judgment was that the appropriations were nearly exhausted. He therefore suspended work on the lower portion of the Pali Trail in hopes that the remaining money could make the upper end passable for travelers.\footnote{Puhi and 26 Others to L. A. Thurston, [1890], translated by Arthur Keawe; and W. E. Rowell to Thurston, 20 March 1890, Interior Department, Box 50, Subject Files, Roads, Pali, HSA.}

*The Friend*, a missionary periodical, optimistically claimed that "quite a start" was made in blasting the cliffs for a new road. The reduced appropriation dictated that most of the construction was done from the bottom working upwards, so that unfinished work would not fall onto the road below.\footnote{Untitled, *The Friend*, December 1889, 99.} It was therefore unlikely that much was accomplished near the upper portion of the route near the summit.

In 1892 about sixty feet of the new road collapsed due to faulty construction. Traffic came to a "standstill," although a Japanese plantation worker was killed when he apparently tried to cross the slide. Repairs were made by blasting a new roadbed from solid rock, which was better than the previous work and "calculated to last for an age."\footnote{"Death at the Pali," *PCA*, 3 February 1892; and C. N. Spencer, Minister of the Interior, *Report*, 1892, 209, 277.} The minister of the interior emphasized that the heavy traffic between Ko'olau and Honolulu made it imperative to build the carriage road and advised an appropriation of $35,000.\footnote{James A. King, Minister of the Interior, *Report*, 1894, 162.}

Despite local discontent, sightseers continued to journey to the Nu'uanu Pali and commended the small island kingdom's road-building efforts. Geologist C. E. Dutton praised the zigzag track over the "gigantic" cliff, remarking, "a good road has been built with much labor and skill."\footnote{Clarence Edward Dutton, *Hawaiian Volcanoes*, extract from the 4th Annual Report of the Director of the USGS [Washington: GPO, 1884], 212, at the Hawaiian Historical Society.} J. J.
Aubertin seemed unique amongst Pali chroniclers; he failed to see what the fuss was about. While agreeing that the "general effect" was "very impressive," he advised that, "At the same time I should be careful of using flaming language to any one who knew some of the Swiss precipices and passes. Nevertheless, it is on an island far out in the Pacific, and one must be very dull to mental impulses upon whom this reflection fails to cause special impression." An 1893 account noted that many travelers used the steep trail, and Hawaiians rode down it at a lope. By 1896 a more formal overlook with stone guardwalls had been established.  

Conquering the Pali

Buried within the pages of the PCA in March 1897 was a brief paragraph that should have generated excitement after four decades of failed expectations. The newspaper announced that engineer William Bruner had completed a survey and placed stakes for a carriage road over the Pali. Despite this project's perceived need, information on its progress was limited and often relegated to the inside pages of the newspaper. Publisher Thomas Thrum's annual retrospect reported that the carriage road was finished in 1898, but observed that annexation to the United States (not the long-anticipated byway) was the year's "all absorbing" topic.  

Bruner first evaluated the Pali in 1889 and estimated that a twenty-foot-wide road at an 8-percent grade could be built for less than $40,000. In 1897 he surveyed the area and determined new road alignment with assistant John

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74 J. J. Aubertin, A Fight With Distances; the States, the Hawaiian Islands, Canada, British Columbia, Cuba, the Bahamas (London: K. Paul, Trench & Co., 1888), 165-166.  
Wilson, who used this experience to bid on the project. The new road started 600 feet on the Honolulu side of the pass and involved replacing a 4,750-foot section of existing trail with a new roadway 7,630 feet long, with the job to finish in December. The added length of the road was needed to reduce the grade so that carriages could comfortably traverse the route. The Republic of Hawaii solicited tenders in April, specifying that 50 percent or more of the unskilled laborers be Hawaiian, American, or European. A contract for $37,500 was signed with John Wilson and Lou Whitehouse in May.

Construction on the new road began in May with forty employees. By July, 140 men were on the job. Progress was so good that the contractors planned to finish work a month early. Wilson and Whitehouse called attention to themselves and their project when they organized a tour and invited press representatives. A front-page PCA article highlighted the byway’s extraordinary features and challenges. The 8-percent grade was considered “easy.” The roadbed would be “solid” since much of it would literally be a “bench” blasted from the cliff. Cross drains were being built at 150-foot intervals to divert rain. The new road along with remaining sections of the existing thoroughfare would be protected by a railing.

The road’s most unusual innovation was illustrated in a sketch. Just below the pass, the cliff was too steep and narrow to accommodate the roadbed. To overcome this hurdle, a framework of steel beams would be constructed to support a concrete roadway. This was, in effect, a bridge. The PCA remarked

77 "The New Pali Road," Hawaiian Annual, 1898, 142.
78 W. E. Rowell, SPW, "Specifications for the Construction of the Road over the Nuuanu Pali," [May 1897], Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
79 "Sealed Tenders—Will be received," PCA, 20 April 1897; and "Contract between Minister of the Interior Jas. A. King, and J. H. Wilson and L. M. Whitehouse, 17 May 1897," Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
that this type of construction had been used at Colorado's Royal Gorge, implying that Hawai‘i's engineering skills and structures were on par with the United States. The reporter also noted that a small (seventeen-foot) concrete-arch bridge would span a gap near “the waterfall,” but failed to recognize that this, too, was cutting-edge technology (and probably the first structure of its type built in the islands.)  

Wilson and Whitehouse were a major focus of the article; they were commended for their fine work, not only on the road, but also in building their reputations. They were “decidedly young men to have such a contract on their hands,” the PCA opined, but the pair was “unquestionably competent, from what has already been done, to finish it to the satisfaction of the public and at a profit to themselves.” Wilson and Whitehouse met while enrolled in Stanford University’s early engineering courses. Wilson was twenty-six years old when awarded the Pali contract; his experience included summer employment with the Oahu Railway, which proved invaluable as owner Ben Dillingham furnished the bond for the Pali contract. Whitehouse, a Californian, had worked with the Northern and Central Pacific, and Colorado Central railroads.

The contractors were praised for working quickly and building around precipices that seemed impassable. Wilson and Whitehouse expected that their road would be as fine as Honolulu’s city streets and a “paradise for wheelmen” (bicyclists). The reporter was obviously impressed by the young men, who ended the tour with an “elegantly prepared” lū‘au (Hawaiian feast), which no doubt benefitted from Wilson’s Hawaiian heritage. While the

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81 “Pali Road Work,” PCA, 19 July 1897.
82 “Pali Road Work,” PCA, 19 July 1897; and “Local Brevities,” PCA, 18 May 1897.
83 Bob Krauss was probably mistaken in reporting that the bond for the project was half the value of the contract (Bob Krauss, Johnny Wilson, First Hawaiian Democrat [Honolulu: University of Hawaii Press, Kolowalu Book, 1994], 57). The project specifications attached to
contractors were making good progress, credit should have also been given to
government engineer Bruner for his role in designing the project.\textsuperscript{84}

In September the PCA reported that the new carriageway was almost
half finished and predicted that it would become the chief spot for viewing O'ahu
scenery, "[f]or at every turn in the road a new aspect of mountain and sea is
presented." The reporter's main objective, however, was to address what he
believed was unfair faultfinding against Wilson and Whitehouse. The
newspaper erroneously emphasized that the project was not difficult to engineer,
but it did need men who understood the work. There had been some criticism
regarding "defective work," but the reporter explained that the construction
problems were routine.\textsuperscript{85}

Reading between the lines, it seemed that the complainants were
engineers with "sour grapes" against the contractors, whom they charged with
doing work for less than cost. Wilson and Whitehouse's winning bid was the
only proposal under the government's estimated value of $40,000. The PCA
vigorously defended them, and the contractors admitted that the profit to be
made was less important than establishing their reputation.\textsuperscript{86}

More noteworthy was this newspaper's commentary on Hawaiians. The
writer praised the builders as "intelligent, industrious young men," but took
particular notice of Wilson, the part-Hawaiian son of C. B. Wilson, a public
servant who had been a marshal for the Hawaiian monarchy. Predicting
Wilson's certain success, the newspaper expressed:

\footnotesize{the Wilson-Whitehouse contract stipulated a bond of $2,500 ("Contract between Jas. A. King
for the Construction of the Road over the Nuuanu Pali," [May 1897]).
\textsuperscript{84} W. E. Rowell, SPW, "Specifications for the Construction of the Road over the Nuuanu
Pali," [May 1897].
\textsuperscript{85} "The Pali Road," 7 September 1897, PCA.
\textsuperscript{86} "The Pali Road," 7 September 1897, PCA.}
Special pleasure in calling the attention of others, Hawaiian and part Hawaiian, to his case. He has entered this large field of industry, instead of loafing about the town looking for some "easy berth." The outlook for the native and part native race would be more promising if more of the young men would show similar ambition.

The young engineers were applauded for their wisdom in being willing to sacrifice profit for their future good. "They must not be discouraged by unfair criticism. No public work, anywhere," according to the PCA, was "done without dish-water opinions from all sorts of people, who increase their criticism in an inverse ratio to their ignorance." 87

The question of who built Hawai‘i’s roads is usually difficult to answer. Occasional newspaper articles and government documents provided limited details of certain projects or labor in general. The 1897 Pali Road job is one of the few projects where some information is available about who constructed the byway. Although the request for proposals stated that "citizen" labor was supposed to be hired, the contract made no mention of it. Over the years the law sometimes required that "citizen" labor be employed on public works, but road boards often complained that it was difficult to hire "native" workers and that contractors violated the rules.

Wilson and Whitehouse subcontracted some of the work, probably because it required skilled labor. At least part of the masonry was handled by an unknown subcontractor, who may have hired Hawaiians or Japanese, as they had traditionally mastered these skills. Most or all of the explosives work was subcontracted to Joe Puni, a "trustworthy native" whose crew was also Hawaiian. Hawaiians were willing, perhaps even desperate, to work. When

87 "The Pali Road," PCA, 7 September 1897. No record of other bids was located in the Hawai‘i State Archives or contemporary newspaper accounts. Several articles on the road’s fiftieth anniversary noted that the next lowest bid was $81,000 ("Building of Pali Road in 1896 Recalled by Trio," Honolulu Star-Bulletin, 21 April 1947; and Sanford Zalburg, "Retiring Jan. 3, Says May Not Run Again," Honolulu Advertiser, 19 December 1954, A17).
one of Puni’s laborers, Kilauea, was killed by a blast, he left his wife and infant in the “most indigent circumstances.” Although Wilson and Whitehouse were under no obligation to assist, the PCA praised them for providing Kilauea’s wife with fifty dollars towards funeral expenses. 

Wilson recruited Japanese and Chinese laborers from sugar plantations, paying them five dollars a month more than their agricultural wages, plus piece-work bonuses. "Asiatics" were the preferred laborers for road construction as they were paid less than Caucasians or Hawaiians. Race relations on the Pali enterprise were no different than elsewhere in Hawai‘i. Workers lived in segregated camps, with conditions likely no better than those on plantations. A Chinese gang, which numbered at least forty, had a Chinese luna. It is unclear whether the Japanese were supervised by one of their own. Henry Crane was probably one of Wilson’s and Whitehouse’s principal assistants. Other employees with Western names may have been haole or part-Hawaiian, and were likely in positions of authority or responsible for skilled jobs, such as blasting. David Watson, another subcontractor, employed both Hawaiians and Japanese, who were also segregated. Watson had troubles with his employees; both gangs threatened him during a dispute over unpaid wages and money owed for provisions.

The Pali project was inherently dangerous due to blasting and the precarious job site, especially during an era without safety standards. Attitudes towards Hawai‘i’s Asian immigrants, especially the Japanese, who were being

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88 “Killed By A Blast,” PCA, 16 July 1897.
89 “Retiring Jan. 3, Says May Not Run Again,” Honolulu Advertiser, 19 December 1954, A17. In a 1937 interview, Wilson claimed he paid his workers twenty dollars per month, which was comprised of twenty-six ten-hour working days (Alexander MacDonald, “Pali Rd. Is Forty Years Old,” Honolulu Advertiser, 24 May 1937).
90 “He Just Escaped,” PCA, 3 December 1897; and “Blood or Money,” PCA, 5 November 1897.
brought to the islands in greater numbers, have been well documented. The
detested Japanese were blamed for accidents, which were attributed to their
lazy work habits. “Coolies” recovered a “Jap” worker who absent-mindedly
applied too much pressure to his lever and thrust himself 500 feet over a cliff to
his death. The PCA blamed the “reckless” Japanese, comparing his accident to
the “picturesque Irishman sitting at the slim end of the limb of a tree and sawing it in
two.” When Crane suffered similar misfortune nearby, he was not blamed for
his accident, but instead commended for saving his own life by the incredible
feat of managing to “get on his back” and use his hands and legs to stop the
fall.

Pali workers were supposedly warned “hundreds” of times to be careful,
but to no avail. Another accident happened when laborers set off explosives
without notice and injured a Japanese. Despite this man’s “innocence,” the
newspaper again scolded the Japanese, noting they were “scarcely adapted to
work requiring caution and a little head effort or forethought.” Rather than avoid
danger, they were accused of “coolly” doing the exact opposite, which
“invariably had the same result.” Extra overseers were hired to “save the men
from injuring themselves,” but the Japanese somehow managed to elude these
watchful guards.

The cavalier attitude towards workers was not unusual during an era
when immigrants (like the Irish and Chinese in the U.S.) were hired for difficult,

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91 A sample of the literature that discusses immigration and race includes Gary Y.
History* (Honolulu: Bess Press, 1961); Ronald Takaki, *Pau Hana: Plantation Life and Labor in
Hawaii 1835-1920* (Honolulu: University of Hawaii Press, 1983); and Roger Daniels, *Asian
America: Chinese and Japanese in the United States since 1850* (Seattle: University of
92 “A Dead Patient,” *PCA*, 18 November 1897; and “He Just Escaped,” *PCA*, 2
December 1897.
93 “A Dead Patient,” *PCA*, 18 November 1897; and “He Just Escaped,” *PCA*, 2
December 1897.
dangerous jobs and safety seemed optional. Closing the road for dynamiting, for example, was not necessarily considered an acceptable precaution. Wilson and Whitehouse wanted to close the road in July, which was apparently opposed. An editorial supported the measure, noting that blasting was "always attended with more or less danger." The writer emphasized that a six-week road closure during the cholera epidemic had not caused "serious" inconvenience to Ko'olau businesses, and that great precaution was essential to protect the traveling public during construction.\(^4\)

There was little mention of the project's progress until October 1897 when a brief notice disclosed that Wilson and Whitehouse planned to dynamite a large section of cliff that was a "menace to human life." The blasting was advertised as an opportunity for "Kodak fiends." This announcement, though relegated to page nine, called attention to the project's most thrilling spectacle.\(^5\)

In early October, the PCA announced that parties were organizing to attend the blasting. The morning newspaper of 4 October advised readers to arrive by two o'clock so they could be directed to safe viewing locations.\(^6\) The following day, more than 200 people "rode, drove, walked or pedaled" to the Pali to watch the explosions. Spectators included Sanford Dole, President of the Republic of Hawaii, who was "keenly interested" in the work, as well as two St. Louis College brothers and their students, who walked to the site. To remove the ledge that jutted out over the road near the pass, nineteen holes approximately twenty feet deep were drilled, then filled with up to 250 pounds of dynamite and powder. The work was carried out by Wilson, Whitehouse, W. G. Gorham, Charles Winchester, Crane, and Puni. They lit one fuse after another,

\(^4\) Editorial, PCA, 19 July 1897.
\(^5\) "Pali Notes," PCA, 28 September 1897.
\(^6\) Untitled, PCA, 2 October 1897; and "That Pali Ledge," PCA, 4 October 1897.
then scampered away to safety, while everyone expectantly held their breath.

The *PCA* described the event:

Scarcely had Whitehouse and Gorham disappeared from view when there was a roar and a mighty upheaval of earth and lava. Thousands of pieces of rock, from the size of an egg upward to that of a window, were loosened and shot out into the valley a thousand feet or more from the bed they had rested in for time immemorial. Downward rushed the tons of red dirt and boulders like a torrent of water and carrying sticks and trees with it to the bottom of the gulch. This blast closed the old road forever—not for a month—as Minister King ordered.97

Daniel Logan commented that observers might have imagined they were experiencing O'ahu's "molten period." He compared the event to an artificial volcano that rivaled, if only for a minute, the "sublimest ebullitions" of Kīlauea Volcano. The cliffs belched smoke and dust, then blew apart with rocks and trees flying in a series of eruptions. The first explosion started just after three o'clock and in fifteen minutes, the work was finished. Even with tons of mountain "disarranged," Logan claimed that "the scenery [was] scarred but a faint pin scratch by the sacrifice."98

An estimated 8,000 tons of rock were blasted using over 3,000 pounds of powder. Wilson, happy no one was hurt, claimed the work was a "success in every way." Whitehouse was "tickled to death." The rock ledge had been sufficiently dislodged so it could be easily removed, allowing them to bench, level, and complete the road on schedule.99 The *Independent* reported that Wilson and "Whitehead" skillfully superintended the work; "the operations were crowned with a perfect success" without incident. "[T]he old road," the newspaper observed, would "soon be remembered only in Hawaiian song and

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97 "New Pali Road," *PCA*, 5 October 1897.
99 "New Pali Road," *PCA*, 5 October 1897.
Although the old track was obliterated, the reports failed to understand that the original Hawaiian path had, for the most part, already disappeared, having been substantially modified since the 1830s.

While the spectacular blasting was praised as a success, an astute observer should have questioned whether someone miscalculated or misled. The contract required that the existing road be kept passable for traffic. Road closures could not exceed three days a week, with no more than two calendar months total. The minister of the interior had approved a "one-month" closure. Did Wilson and Whitehouse miscalculate or intentionally plan to bury the old road forever so they could move the project along and continue benching their road?

Contemporary information on the contractors' road-building techniques probably does not exist. Nor did newspaper accounts convey that relatively primitive construction methods accomplished most of the work. Dynamite was effective for removing large portions of cliffs, but the remaining work was finished by men wielding pickaxes, shovels, and wheelbarrows. Wilson later explained that after the cliffs were blasted, workers shoveled the rocks and dirt over the side.  

An extensive list of articles requisitioned by the Bureau of Honolulu Roads provided clues about how road work was done in 1897. Coal was needed for blacksmiths. Tools included picks, mattocks, shovels, hammers, wheelbarrows, brooms, and buckets. Many supplies were for horses: harnesses, blankets, cart saddles, hay, and grain. The list included no machinery, not even horse-drawn equipment such as scrapers, dumpcarts, or...
graders. Horses were probably used to haul equipment and supplies, perhaps to transport supervisors. Powder and fuses, of course, were on the list; explosives were used on the Pali as early as 1847.\textsuperscript{103}

Even though steam-powered machinery was coming into use in the U.S. during the 1890s, the Pali Road was Wilson’s and Whitehouse’s first contract. With their low bid, they relied on cheap, plentiful Asian labor. One of Wilson’s later associates, George Houghtailing, explained that cheap labor could be used for all tasks. Laborers bored holes for explosives using chisels, sledgehammers, and picks. They crushed the blasted rock using hand tools to make aggregate. Concrete was mixed and poured manually.\textsuperscript{104}

The blasting exhibition was the highlight of the Pali Road construction, after which progress reports reverted to the status of minor news. Praising Wilson and Whitehouse had become habitual. William Henry of Kāne‘ohe applauded the contractors’ achievements, observing that the work was being pushed with “all possible speed,” even if it would finish a bit behind schedule.\textsuperscript{105} Some challenges, such as building the steel-girder bridge, apparently went unnoticed.

Forty years after building the “impossible” road, Wilson and Whitehouse reminisced about working without machinery. They recalled how they postponed the most difficult task until the end. Three forty-foot steel beams had to be placed across a gap in the cliff, which was also on a curve. Maneuvering the girders into place was accomplished from a three-foot-wide trail suspended over a 200-foot drop. Slings were strapped around the beams and over the

\textsuperscript{103} M. Kekuanaoa to Minister of the Interior Keoni Ana, 10 April 1848, translated by E. H. Hart. Kekuanaoa noted that 891 pounds of powder were used on the Pali during a fifteen-month period, Interior Department, Box 143, Misc., HSA.

\textsuperscript{104} Bob Krauss, John Wilson Research Notes, U-163, Box 3, John Wilson tapes, George Houghtailing Interview, [1995?], HSA.

\textsuperscript{105} “Pali Road Works,” PCA, 12 November 1897.
shoulders of a dozen “powerful” Japanese on each side of the girder. The workers lifted the beam a few inches off the ground, then walked it toward the ledge and across the gap. Trying to envision the process, it seems clear that other workers must have been on the other side of the gap to help pull the girders over the break in the cliff and around the bend. According to Wilson, the structure was Hawaii’s first reinforced-concrete bridge, “and it sure was a tough one to build.” The newspaper account claimed that Wilson and Whitehouse decided to build a bridge rather than bench the road onto the cliff. The bridge plan, however, was in the government’s project specifications.  

Another tricky operation was building masonry retaining walls that supported the roadbed embankments, one of which was 400 feet long. These walls were built parallel to the cliffs and backfilled with dirt. Sometimes the walls could be constructed from a section of road that zigzagged below, which was fairly easy. Other walls had to be built directly from the face of the cliff, meaning that masons would have suspended themselves with ropes while building the wall. Rocks and materials would then be passed down or up by other workers. Dirt was backfilled using wheelbarrows. (Photograph 3) 

In December 1898 one of the project’s Hawaiian employees, Johnny Lilii, became the first to travel the new Pali Road on horseback, unofficially opening the road to horse travel. G. P. Wilder and George Robinson were the next to traverse the track when they rode to Ko‘olau for a hunting trip.

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107 “Pali Road,” the same article appeared in the PCA, 20 December 1897, and in the Hawaiian Gazette, 21 December 1897.  
108 “Local Brevities,” PCA, 21 December 1897.
While public reports indicated satisfactory progress, C. Bolte of the Kaneohe Ranch Company was not pleased with the quality or speed of work. In a series of letters to government officials, Bolte complained that Wilson and Whitehouse did not follow contract terms, especially in keeping the old road open and erecting the fence. Concurrent with the first horseback travelers crossing the new road, Bolte grumbled that the contractors did the blasting late every day, leaving a path of loose rock that was not safe for pedestrians and created hardship. SPW Rowell investigated the matter and witnessed half a dozen women crossing the path with ease. Although Rowell conferred numerous times with the contractors, this failed to satisfy Bolte.\(^{109}\)

\(^{109}\) C. Bolte to Minister of the Interior King, 6 December 1897; and William Rowell to C. Bolte, 10 December 1897, Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
Bolte then appealed to the minister of the interior and the acting president of the republic. With each communication, he increased the number of complaints. Unlike most observers, Bolte was unimpressed with Wilson and Whitehouse. He asserted they could have finished on schedule had they better managed the project. Bolte acknowledged that Rowell tried to supervise them, but their “juvenile minds knew better.” His most vocal grievance was that the guard fence was not built to specifications or on schedule. As a result, he could not safely drive his cattle to the Honolulu market. These unsafe conditions forced rice farmers to pay higher freight charges to ship by sea, and fishermen quit working because they could not send their catch to Honolulu. Producers losing money did not pay their rent to the ranch. Rowell answered the pages of complaints point by point, noting that Bolte was the only person grumbling. Rowell emphasized that road work by nature caused inconvenience, and that it was unreasonable to expect the contractor to keep a road open for pack animals during construction. The new road opened before Bolte’s dispute was resolved. He claimed damages against the government, which were dismissed.110

As the road neared completion in January 1898, the PCA provided snippets of its progress. With one exception, these achievements were noted in brief articles, not front-page news. The road withstood its first major test when strong winds and heavy rain inflicted no damage. Work was winding down on the project, with equipment being hauled away and the work force reduced from 175 to fifty men. Again, Wilson and Whitehouse were commended:

110 C. Bolte to Minister of the Interior King, 6 December 1897; William Rowell to C. Bolte, 10 December 1897; C. Bolte to Rowell, 11 December 1897; C. Bolte to King, 25 January 1898; C. Bolte to Henry E. Cooper, Acting President of the Republic of Hawaii, 5 February 1898; E. P. Dole, Deputy Attorney General to W. O. Smith, Attorney General, 15 March 1898; and William Rowell, SPW, Re Pali Road Claim of C. Bolte, n.d., all in the Interior Department, Box 50, Subject Files, Roads, Pali, HSA.
The construction of this road would present itself to the most experienced and oldest contractors as a stupendous undertaking. Some misgivings were expressed when it was learned that the two young men of the firm of Wilson & Whitehouse were the successful bidders. Mr. Wilson, who is a son of the ex-marshal, had done some work of the sort and Mr. Whitehouse was well-recommended. The boys took hold and splendidly vindicated themselves and the judgment of their friends. They have carried on the big business for months without a hitch, handling hundreds of men and thousands of dollars worth of material. They have fulfilled all pledges and have made a better road than the specifications call for.111

Several weeks later, Minister of the Interior King journeyed over the Pali in an “ordinary livery rig and agreed that the drive was enjoyable in the extreme...one of the best and easiest-graded thoroughfares in the islands.” He anticipated that the government would approve and accept the road within a few days.112 One week later, Henry Bryant, O‘ahu’s mail carrier, advertised that he would begin carrying passengers and express parcels on a scheduled service over the new road. The PCA helped publicize Bryant’s operation, assuring that he had the “very best of conveyances and will guarantee the very best of service.” It predicted the new business would be a boon to the public, which would no longer have to rely on uncertain steamer schedules, but could instead trust Bryant to make “quick time.”113 As if not quite believing that a road could withstand Nu‘uanu rains, the newspaper reported that the new thoroughfare had “defied” another downpour, standing “firm and solid under the weather,” which bode well for its future.114

The completion of the long-awaited Pali carriage road was apparently not very newsworthy even though headlines showed there were no major events to compete with the achievement. The PCA printed a brief notice on page seven:

111 “In a Few Days,” PCA, 6 January 1898.
112 “On the Pali Road,” PCA, 20 January 1898.
114 Untitled, PCA, 28 January 1898.
"The Pali Road was completely finished yesterday. Everything is now in good shape for travel." A newspaper account on the road’s fiftieth anniversary recalled that a long stream of horse-drawn carriages were part of the 1898 opening festivities; however, two searches of newspapers for several weeks on either side of the completion date located no contemporary reports of a grand opening.\footnote{115}

The new Pali Road was reviewed in the \textit{Hawaiian Annual} and \textit{Paradise of the Pacific}. Joseph Travis recognized that the summit view had long been a mecca for sightseers. He credited the "courageous" SPW for completing a project that was seen as foolhardy by earlier governments and engineers. Daniel Logan recalled the importance of the old road, with its heavy traffic of pedestrians, horses, and pack trains. As the most direct route between Honolulu and windward O'ahu, he expected the new road would bring major benefits. Logan predicted the byway would open one of the island’s most delightful districts, with its "exceptionally wholesome" climate. It would be a "blessing for city folk" by making country retreats easily accessible. He, too, acknowledged the Pali’s scenic grandeur, which entitled it to a prominent place in travel guides. "In beauty and sublimity to sight-seers," Logan enthused, "the road cannot fail to be one of Honolulu’s greatest attractions for both citizens and strangers."\footnote{116}

Both articles reported the technical highlights nearly verbatim, suggesting that the contractors provided the information. The road’s alignment and construction features were described, with particular emphasis on the framework of steel girders that jutted "conveniently from the face of the cliff for a

distance of one hundred and ten feet." This "dizzy stretch", according to Logan, literally hung in mid-air and was like a "lead pencil stroke on the side of a house." About 17,500 pounds of blasting powder and 10,000 pounds of dynamite were used during the course of construction.\(^{117}\)

The *Friend*, like Travis, Logan, and countless others, accorded "great credit" to Wilson and Whitehouse for their excellent work and predicted the road would carry heavy traffic. The *Friend*, however, rebuked the Hawaiian monarchy for not building the carriage road fifteen years earlier, observing that the Republic was responsible for bringing general improvements, including road building, to Hawai‘i. Bryant’s stage service was “one of the first fruits of the new Pali Road” and provided an opportunity to view a variety of O‘ahu’s scenery.\(^ {118}\)

The new Pali Road, although built for utilitarian reasons, was also promoted to tourists. Since its 1888 founding, *Paradise of the Pacific* had routinely featured the byway. In 1903 it characterized the Pali Road as O‘ahu’s "mecca," with equals in other lands, but "no rivals.” The road from Honolulu to the summit had been made as good as a boulevard. This easy access provided even more incentive to visit the Pali. *Paradise of the Pacific* highlighted Nu‘uanu Valley sites *en route*, including the royal mausoleum, Queen Emma’s former residence, the ruins of Kamehameha III’s country palace, and of course, the luxurious vegetation. Of particular interest were flower farms, where women of the “industrious class of Hawaiians” cultivated blooms and made *lei* (floral wreath) to sell in Honolulu. At the valley’s end, travelers still approached the


\(^{118}\) “Nuuanu Pali Road Opened,” *The Friend*, February 1898, 16.
summit through the narrow, windy pass and arrived at the brink with "hardly a moment's preparation for the grand climax of the journey."\textsuperscript{119}

The magazine recommended that sightseers retrace the Nu'uanu route to enjoy different vistas on the return, which put them in Honolulu in time for lunch. The mail stage was the preferred conveyance for those wishing to travel the new Pali Road, with Nu'uanu Valley scenes "but a foretaste of the glories that meet one's vision" on the descent from the pass. The stage journey allowed travelers to visit the windward side and return to Honolulu in time for dinner. If it did not rain heavily, the trip was "thoroughly enjoyed."\textsuperscript{120}

While the carriage road enhanced safety with its guard fence, nature could not be tamed and accidents continued. Within months of the road's opening, a man fell from the pali in an attempt to recover his hat. He let it go, continued to Honolulu and purchased a new hat, which blew off on his return trip. Trying to retrieve it, this time the man fell 250 feet over the cliff. Rescuers took him for dead, but he survived despite three skull fractures. Wind wreaked havoc on the road, especially with lightweight carriages. In 1901 a horse panicked in the wind, could not be calmed, and leapt over the fence to its death. The passengers had fortunately alighted from the carriage, intending to ride again once the winds subsided. Several weeks later, a man could make no headway in the forceful wind. While attempting to turn his horse and carriage around to return to Honolulu, a gust ripped the buggy from the horse and smashed the vehicle into the cliff.\textsuperscript{121}

\textsuperscript{120} "Through Nuuanu," \textit{Paradise of the Pacific}, December 1903, 37.
\textsuperscript{121} Untitled, \textit{PCA}, 23 May 1898; "Death on the Pali... Heavy Winds the Cause," \textit{PCA}, 20 June 1901; and "Prey of the Wild Winds," \textit{PCA}, 12 July 1901.
The Automobile Changes the Course

Before Wilson and Whitehouse even completed their job, the PCA emphasized that the road was a vast improvement, but still needed more work.\(^ {122}\) It was not clear what the writer wanted, but documentation showed that the new carriage road was only the beginning; it remained a "work in progress." By 1906 the road was "badly in need of repairs." Several contracts were awarded to Whitehouse to macadamize the road and replace Hawai‘i’s first reinforced-concrete bridge, which was already failing due to corrosion.\(^ {123}\) Future changes became inevitable due to the increasing dependence on the automobile.

The first motorcar appeared on Honolulu city streets in October 1899. In 1910, 555 autos were registered on O‘ahu; the next year the number had increased to 900.\(^ {124}\) In 1911 the *Hawaiian Star* proclaimed that Hawai‘i was the place for "autoing" when two gentlemen shipped their Winton to Honolulu. O‘ahu’s roads were "excellent," transporting the sightseers through "some of the grandest and most diversified scenery imaginable." After driving over the "famous" Pali, they continued through an agricultural cornucopia of sugar, pineapple, rice, *kalo*, coconut, and bananas.\(^ {125}\) Another Honolulu visitor noted that she and her companions often ended their evenings by motoring to the Pali summit overlook to enjoy Kāne‘ohe’s "glow-worm" lights. She opined that the Pali was more essential than visits to Waikīkī, Diamond Head, or Pearl Harbor,

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\(^ {122}\) "In a Few Days," *PCA*, 6 January 1898.
\(^ {125}\) "Says Hawaii Is Place for Autoing and Oahu Roads are ‘Excellent,’" *Hawaiian Star*, 20 September 1911.
because its memories were "pre-Territorial," its inclusive beauty as "poignant and inimitable as the Hawaiian voice lifted in Polynesian song."  

By 1916, the Pali Road was being modernized with concrete guardwalls to ensure safety for motorized traffic. Unspecified improvements were underway in 1918 when U.S. Secretary of the Interior Franklin Lane admired the Pali Road’s "class of engineering work," claiming it ranked with the achievements of Swiss engineers in their alpine districts. County Engineer Wilson planned to pave the road with concrete and improve dangerous curves. In 1920, 6,384 autos were registered on O‘ahu. Although "nearly obsolete," the occasional horse and buggy still trotted over the Pali. 

Willard Bassett astutely observed that by 1920 the Pali Road bore no resemblance to the 1898 carriageway. Contractor J. Lord was erecting the final 4,100 feet of guardwall and paving the road with concrete. By this time, portions of the roadway had been widened to twenty-three feet, with curves even wider. Of particular interest were the pavement corrugations intended to prevent automobiles from slipping. Lord’s project was nearly three times the length of the original carriageway, had the advantage of heavy equipment, and cost $281,000.

Despite these upgrades, driving the road remained a challenge. One motorist claimed that any Ford that did not boil over on the ascent was worth purchasing. Bassett nevertheless praised this "marvelous piece of road,"

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comparing its twists and turns to wool being raveled from a sweater. To ensure seeing the roadway (not the scenery), he recommended taking a taxi so as to not be distracted by driving. Basset also highlighted Wilson’s contributions, assigning him primary credit for the 1898 carriageway. Whitehouse was not mentioned. Although government engineer Bruner had devised the project long before Wilson entered the picture, Basset portrayed Wilson as if he were Bruner’s equal, with Wilson doing much of the preliminary work on his own. According to Basset, Wilson heroically surveyed (by hanging from the cliffs) and laid out the road. This type of publicity no doubt boosted Wilson’s reputation, much to his political advantage. Bassett’s article was timely as it appeared shortly before Wilson was appointed Honolulu mayor after the death of Joseph Fern.\footnote{Rosamond Swanzy Morgan and J. P. Morgan, “Haleiwa and Beyond,” \textit{Mid Pacific Magazine}, July 1920, 33; and Bassett, “Roman Road of Honolulu,” \textit{PCA}, 1 February 1920, section 4, 1-2. Popular books and articles on Wilson frequently cite the statements in Bassett’s article. Wilson, of course, would have also excelled at self-promotion. Honolulu mayor Joseph Fern died in February 1920. At some point, Basset became a Wilson “aide and confidant” (Donald D. Johnson, \textit{The City and County of Honolulu, a Governmental Chronicle} [Honolulu: University of Hawaii Press and the City Council of the City and County of Honolulu, 1991], 115).}

By 1931 O‘ahu’s automobile count had skyrocketed to 28,697. More traffic and heavier modern vehicles marked the beginning of the end for the Pali Road. During a six-hour period in 1931, 4,666 cars traversed the Pali. Safety was compromised by heavy trucks and buses, both of which required the entire width of the road to negotiate curves.\footnote{Schmitt, \textit{Historical Statistics,} 430; “Pali Drive,” \textit{Hawaiian Annual}, 1931, 69; and “Commission to Investigate,” \textit{Honolulu Advertiser}, 27 June 1935.} Larger cars were more difficult to maneuver around tight curves, sometimes forcing drivers to slow to a near-stop or even have to reverse to be able to make a turn. (Photograph 4)
By the Pali Road’s fortieth anniversary in 1937, it became clear that piecemeal upgrades could not meet existing or future needs. The road was quickly becoming obsolete. SPW Louis Cain and Honolulu city engineer Ben Rush considered the Pali in planning Hawai‘i’s 1937–1939 federal aid road program. Their first goal was to improve the road from Honolulu through Nu‘uanu Valley to the pass. Two options were presented for the remaining portion of the route down the cliff: complete reconstruction or a new highway that would run west of the existing road. Cain did not plan a tunnel, as he calculated it would cost $2 million; in comparison, the new road had an estimated price tag of $300,000.\(^{133}\)

From 1938 until mid-1941, transportation departments, public officials, community and business groups, and residents debated the future of cross-island travel, whether by reconstructing the Pali Road or by building a modern highway. Some officials believed the tunnel and new road should be a long-

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term goal and wanted to continue piecemeal improvements of the existing road. Many residents, however, protested that upgrading an obsolete byway wasted taxpayers' money. The alternatives were furiously contested in public hearings and in the newspapers. Arguments focused on traffic safety needs, as well as the desire for making windward O'ahu easily accessible for residential development and recreation.\textsuperscript{134}

Federal highway funding determined the Pali Road's fate. Jack Moskowitz, the BPR's principle highway engineer in Hawai'i, explained that federal aid would be available to improve the road through Nu'uanu Valley to the summit, where construction could bring the road up to federal standards. There would be no federal money, however, to fix the road down the pali. From an engineering standpoint, Moskowitz clarified that it was impossible to build a good road at any cost using the existing "pali strip." In other words, no amount of widening, straightening, and otherwise upgrading the obsolete byway would ever meet federal standards. Moskowitz asserted that the money would be much better spent on building a completely new road (which would require a tunnel).\textsuperscript{135} This matter was not resolved until decades later when cross-island freeways were built through both Kalihi and Nu'uanu valleys.

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\textsuperscript{135} "Prompt Pali Road Start Urged," \textit{Honolulu Star-Bulletin}, 26 November 1940.
The Pali Road’s Significance

Nu’uanu is richer in lore than any other O‘ahu locality and thus has great cultural value to Hawaiians. The Pali attained prestige as the site of Kamehameha’s 1795 military victory and the low pass through the Ko‘olau mountains. A path across the Pali was created by and for Hawaiians as the most direct route between Honolulu and Ko‘olau Poko. The Pali Road is significant in terms of culture, technology, and politics.

The Nu’uanu Pali Road illustrates the path of technological progress in one of the world’s most isolated archipelagos. People traveling on this remote island in the 1830s relied on an extraordinary footpath built by hand with primitive tools. In 1898 a carriageway constructed with the most modern technology facilitated travel over the precipitous mountains. The technology and often the impetus for change came from settlers and their descendants; at times, Hawaiians played an important role.

Although haole initiative drove much of the progress on the Pali Road, that situation changed in 1897. John Wilson, with partner Lou Whitehouse, restored meaningful Hawaiian engagement, that is, more than just unskilled labor, to the new Pali Road. Wilson and Whitehouse, Stanford-educated engineers, built the “impossible” carriageway at a price that other contractors refused to accept. Many of the skilled laborers on this difficult project were Hawaiian.

Wilson cultivated both his personal and professional contacts to establish his reputation, which became a springboard for an enduring political career. His parents had been associated with the Hawaiian monarchy. Wilson’s success

136 Handy and Handy, Native Planters, 475-476.
on the Pali led to positions as a government engineer on Oʻahu and Maui. As a private contractor he built other difficult mountain road projects on Maui (chapter four) and the Big Island (Laupāhoehoe Pali).

Wilson served as Honolulu mayor for twenty years and became one of the most influential politicians in twentieth-century Hawaiʻi. Perhaps more significant in the long run was his dedication to Hawaiʻi’s Democratic Party, which was inclusive (in contrast to the haole-dominated Republican Party) and lobbied for the rights of all people. It is ironic that the young engineer praised as a role model for the supposedly indolent Hawaiians spent much of his life helping build the political party that finally, in the 1954 elections, ousted the Republican haole oligarchy that had for decades suppressed Hawaiians and other non-whites.137

Good transportation over the Pali was always viewed as imperative for facilitating agricultural development and getting produce to markets. Census statistics demonstrate that the 1845 and 1898 Pali byways probably had little measurable impact on Oʻahu’s economic development. The Koʻolau Poko District population from 1853 until 1900 was relatively stable. After 1900 the population steadily increased. One thousand acres of pineapple were planted in 1910. In 1924, the first residential subdivision was built. During the 1930s road improvements and the Depression’s lower land prices convinced some residents to relocate to windward communities and “brave the Pali road as regular commuters” to downtown Honolulu.138

137 Biographical information about Wilson in Johnson, The City and County of Honolulu, especially chapters six and nine; and in Krauss, Johnny Wilson, First Hawaiian Democrat.
Will Cooper remarked that “old Hawaiians knew the lure of windward Oahu” and lived in this productive, densely populated district prior to western contact. He maintained that the Ko‘olau Poko District had played only a minor role in O‘ahu’s affairs since the arrival of the haole mostly because it had been “cut off by the impassable mountain barrier.” The area, according to Cooper, had been “rediscovered.” By the early 1930s “[g]ood roads and many automobiles” were allowing thousands to live in the more attractive, cooler climate on “the other side of the Pali.” While this development was positively portrayed, an unfortunate shift the other way had also occurred as Hawaiians, tempted by the “garish spell of the white man’s city,” abandoned their kuleana (property) and moved to Honolulu.\(^{139}\)

During the 1940s, the Ko‘olau Poko population more than doubled, most likely due to the influx of military personnel and mainlanders during the war. The Ko‘olau mountain barrier was not effectively broken until the opening of four-lane tunnels and freeways in the 1950s and 1960s. After the new Pali Highway opened, along with another cross-island highway through Kalihi Valley, Ko‘olau Poko’s population skyrocketed from 20,779 in 1950 to 60,238 in 1960. The district was no longer rural, but instead had become Honolulu’s newest suburban area. The dramatic population increases continued, with another 50 percent increase by 1970.\(^{140}\) The freeway construction destroyed all but one mile of the old road.

Although the Pali Road was constructed to facilitate agriculture and produce to market, it also played a secondary role as a scenic highway. While the scenery was indeed spectacular, Bassett enthused that the “marvelous...

\(^{139}\) Will J. Cooper, “The Lure of Windward Oahu,” *Hawaiian Annual*, 1933, 121-123.

piece of road" was a tourist attraction in its own right. The next chapter will examine Maui's Hāna Belt Road, which like the Pali Road, began as a utilitarian route. By the time it was built in the 1920s, the Hāna Belt Road had become a completely new type of commercial enterprise: a scenic thoroughfare to attract tourists and build a new industry to supplement agriculture.

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Chapter 4

Scenic Roads: Paving the Way for Tourism

"With a good drive to the top of Punchbowl," observed Minister of the Interior Lorrin Thurston in 1888, "it would immediately become the great point of attraction in connection with the city to tourists, and become a noted object which would effectively advertise us to the traveling public abroad."¹

Scenic motor roads were one of several highway innovations developed in the U.S. and Europe during the years between the World Wars. Historian David Nye observed that the establishment of these "fundamentally new types of roads," including those for the enjoyment of nature, is a "somewhat neglected subject."² Historian Robert Hadlow defines a "scenic road" as one specifically constructed for the purpose of allowing an "up-close" view of the landscape's natural beauty. Although often associated with the National Park Service, scenic thoroughfares were also built by local jurisdictions. Oregon's Columbia River Highway was built between 1913 and 1922; and in South Dakota, scenic roads were built at Custer State Park from 1919 to 1932.³

Hadlow's definition of a scenic road does not neatly fit Hawai'i's experience. Many Hawai'i roads are pleasant scenic drives, but they were not built with the primary purpose of providing access to natural beauty and

¹ Lorrin A. Thurston, Minister of the Interior, Report, 1888, 207, hereinafter cited as Minister of the Interior, Report, Hawai'i State Archives, hereinafter HSA.
boosting tourism. The majority were built for everyday travel. Exceptions were Haleakalā Highway, the thoroughfares around Kīlauea Volcano, sections of Maui’s belt road, and the Waimea Canyon Road on Kaua‘i.

This chapter examines the development of the Hāna Belt Road as a scenic highway to promote tourism. The byway’s history demonstrates the evolving reasons for its construction, which began with the premise of opening East Maui for settlement and agriculture, but ended with the concept that scenic roads were commercial enterprises designed to build tourism as a new, third “industry” that would supplement sugar and pineapple. Public-spirited Maui citizens began working to develop scenic roads as early as 1914. Rather than emphasize the romantic images often seen on travel brochures of the era, which became inherently associated with Hawai‘i and the Pacific Islands in general, these civic leaders aimed to provide easy access to Hawai‘i’s unique scenery and natural wonders, including the Hāna coast and Haleakalā Crater. The construction of a road through an isolated, sparsely populated wilderness was a substantial achievement for a remote island community and required a great commitment of financial, political, and engineering resources. Although a multi-purpose route, the Hāna Belt Road is Hawai‘i’s foremost example of a locally developed scenic, “commercial” byway.

Making the Connection between Roads and Tourism

In 1826 Hiram Paulding walked to the summit of Punchbowl, an extinct volcanic crater, and noted its "extensive & beautiful prospect." "A winding
footpath," he observed, "... showed us that it had long and frequently been
ascended by the natives, and encouraged us to make the attempt." By 1843
Punchbowl had become an established promenade.  

In 1888 Lorrin Thurston reported that a road had been surveyed to
Punchbowl’s 498-foot summit, which had a view described as "unsurpassed" by
any other in the country. He remarked that this drive had long been considered
one of the "greatest attractions which could be added to Honolulu." Thurston
understood, at a relatively early date (for Hawai'i), that scenic roads for tourists
were investments that would more than pay for the cost of construction. He
urged that an appropriation be made for a Punchbowl drive, referring to it as a
"profitable business investment by way of advertising the country and attracting
tourist travel, irrespective of the other advantages connected therewith."
Thurston, like many prominent haole, had the means to travel and was aware of
developments elsewhere. He knew that Montreal had a similar hilltop drive that
was its chief attraction, but commented that its vistas could not compare with
those from Punchbowl. With views extending from Diamond Head to O'ahu's
western shore, Thurston wanted a road that would make any country proud.

"Punchbowl Hill Road," completed in 1890, accessed the crater and
summit on a light grade that allowed carriages to easily trot in both directions.
Detractors objected to the drive as a luxury for the rich, not a necessity.
Thurston refuted this argument, asserting that his actions took into account the
needs of a growing city. He maintained that residents would not regret the

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5 Hiram Paulding, *Journal of a Cruise of the United States Schooner Dolphin, among
the Islands of the Pacific Ocean; and a Visit to the Mulgrave Islands in Pursuit of the Mutineers
expense, noting that complaints stopped after the road opened. According to Thurston, “everyone” realized that the carriageway was one of the “pleasantest” excursions around the city, a necessity they could not do without.⁸

Thurston editorialized that most people were not aware of Hawai‘i’s tremendous development potential. As such, he considered roads and paths to be wise, inexpensive investments. Thurston insisted that those opposed to improvements had not the “faintest conception of the value in dollars and cents of [e]very traveler who comes to the country, and of the immense increase which can be created in the amount of tourist travel by judicious advertisement and intelligent improvement of our natural resources [sic] advantages.” Thurston boldly predicted that winter visitors and tourists would become as profitable as Hawai‘i’s sugar industry within a “few years.” This income, he claimed, was preferable to sugar because it would stay in the islands, not be exported from the kingdom by foreign plantation owners. Thurston expected some would reject his ideas, just as naysayers had protested Volcano Road as a “luxury” and “Punchbowl Drive” as “wasted” money.⁹

Maui’s ʻĪao Valley trail likewise helped set the precedent for scenic thoroughfares in the islands. Like the Pali and Punchbowl, ʻĪao Valley was within easy distance of the island’s primary town. Only three miles up a mountain road from Wailuku, the government trail was used by Hawaiians and Chinese who cultivated the area, but also by tourists. The narrow valley featured lush vegetation, the “Black Gorge,” and ʻĪao Needle, a peak that abruptly jutted 1,200 feet from the valley floor. ʻĪao Valley’s other attractions were historical: legends, royal burial sites, and a renowned battleground. The

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⁸ Thurston, Minister of the Interior, Report, 1890, 100, 322. Government engineer W. W. Bruner surveyed the road and it was built for $4,900 by Kala and Kaiaikawaha, 264-265.

⁹ Thurston, Minister of the Interior, Report, 1890, 341-342.
trail into 'Iao was rough, requiring a sturdy horse and sometimes a staff, ropes, and an axe.\textsuperscript{10}

The valley was accessed by a wagon road and horse trails by 1900. During the early 1900s, \textit{Maui News} editorials demanded the government improve the byway; the sole emphasis was on accommodating tourists. The newspaper reported that word of the bad road was spreading, and tourists were "invariably disgusted" with the journey.\textsuperscript{11}

Maui built a carriage road; and by 1912, the valley was being referred to as the "Yosemite of Hawaii."\textsuperscript{12} The carriageway was ruined in Waikuku's disastrous 1916 flood, closing the valley to all but hikers for nearly six years.\textsuperscript{13} Although considered an "asset second to none in the islands," Maui County refused to rebuild the road, claiming that 'Iao had "almost nothing but scenery to warrant it." This opinion reflected the era's tendency to see scenic roads as a luxury. Residents were not necessarily rejecting the road's scenic value, but debating who ought to fund the byway: the county or the territory. Maui leaders insisted that 'Iao's main users were from Honolulu and abroad, thus the entire territory urgently needed the road, would subsequently reap the benefits, and therefore ought to pay for it.\textsuperscript{14} When the road finally reopened, a \textit{Maui News}

\textsuperscript{10} Herbert Henry Gowen, \textit{The Paradise of the Pacific} (London: Skeffington & Son, 1892), 77-82.
\textsuperscript{11} Editorials, \textit{Maui News}, 2 June 1900; 8 September 1900; 2 August 1902. As there are significant gaps in the government archive regarding Maui roads, the \textit{Maui News} is a major source for this chapter.
\textsuperscript{13} "Iao Valley Road," editorial, \textit{Maui News}, 15 July 1921.
editor encouraged "home folk" to enjoy the road just as tourists did, predicting that it would become the island's most popular drive.\textsuperscript{15}

Although these early roads were by no means comparable to the Hāna Belt Road in terms of length, cost, or technical complexity, the carriageways built to carry traffic from town centers to nearby natural beauty were significant for establishing the justification for scenic roads in Hawai'i.

\textit{Calling Attention to Hāna}

The Hāna Belt Road traverses through some of Hawai'i's most rugged topography and rainiest climate.\textsuperscript{16} East Maui, where the Hāna Belt Road is located, is comprised of Haleakalā, a massive dormant volcano that rises to 10,023 feet above sea level. Lava flows created the jagged coastline on which the road is aligned. Centuries of stream erosion from the wet, tradewind climate on Haleakalā's windward (northeastern) slope cut a rugged terrain of great sea cliffs and deep v-shaped valleys. The weather also promoted the growth of dense forests. Together, these conditions made the Hāna coast one of Hawai'i's most isolated and inaccessible areas. Reflecting this situation, Hāna was politically tied to the island of Hawai'i until 1781, connecting by canoe across the ‘Alenuihāhā Channel.\textsuperscript{17} (Figure 6)


Figure 6: Hāna Belt Road, Maui, Hawai‘i.
Extending for nearly fifty-one miles along East Maui’s rugged coast, the Hāna Belt Road required seventy-four concrete bridges and culverts to span the area’s gulches and streams. Although frequently considered part of the “Hāna Highway,” the road between Hāna and Kipahulu is known as the Pi‘ilani Highway. Haleakalā Crater was part of Hawaii National Park when the Hāna Belt Road was completed in 1926. At that time, the National Park Service had not acquired all the necessary land, and the park boundaries vaguely encompassed Haleakalā Crater. This map depicts the park boundaries in 1935 when Haleakalā Highway opened.

Few tourists visited Maui in the nineteenth century, yet these travel accounts revealed the allure of East Maui’s windward coast and established the need for improved overland transportation to Hāna. In 1869 Pacific Commercial
Advertiser editor H. M. Whitney cautioned that the “road” was good at first, but grew worse until reaching the “Hamakua Swamp,” where it became “wretched” and “abominable,” a disgrace to the government, and the worst route in the Kingdom of Hawaii. After slogging through the swamp on horseback, a trail emerged to traverse over pali and through valleys in “the Switzerland of Hawaii,” where nothing was more enchanting than the “wild and ever changing panorama.”¹⁸

Whitney declared that every valley was more beautiful than the one just passed, with steep precipices, frequent cascades, tropical vegetation, the “largest [mountain] apple orchard in the world,” and the Pacific Ocean. He emphasized that a week’s journey along the coast, with its “paradisiacal” scenery, was unforgettable and would more than compensate for the discomforts of the rough track and rainy weather. Whitney repeated a rumor that a good road would soon replace the muddy trail through the swamp.¹⁹ Like later writers, Whitney emphasized that the area was characterized by “impenetrable forests” that were impassable without a road, and a “highway” that was in fact no more than a trail.

George Bowser adventured along the coast in the 1870s, declaring that East Maui was a “perfect paradise” and “just the country to delight the tourist.” The one exception to his pleasure was the “roads,” although Bowser observed that a strong mule, a good camp outfit, and an experienced guide would assist in dealing with the precipitous mountain tracks and torrents. He advised that

tourists be prepared for “floundering and creeping along at anything but a lively pace.” Bowser highlighted another theme of early accounts, that adequate time and physical stamina were necessary for journeys along the Hāna coast.

Ferdinand Lee Clark’s 1888 Hawaiian Guidebook agreed that the tour was for those accustomed to “roughing it.” Observing that the Hāna trail had been recently improved when irrigation ditches were built, Clark surmised that travelers probably wondered how bad the earlier “road” had been. A “native” was still necessary to guide riders over the track, which wound “torturously” through gulches and over narrow ridges, and forded streams subject to flash floods. “This portion of East Maui,” Clark concluded, was “enchanting in its wild and picturesque beauty,” with each successive ravine being more spectacular. He also recommended studying the “most primitive forms of Hawaiian life” along the way, noting that indigenes considered hospitality a “pleasant duty.”

The Hamakua Ditch, completed in 1878 to transport water to central Maui’s sugar plantations, was probably the catalyst for initiating more regular overland travel along the Hāna coast. In addition to improving the existing government road, access trails were built. These tracks, as well as others constructed for subsequent ditches, became useful horsepaths.

By 1913, the “Ditch Trail” was considered one of Maui’s most popular highlights. During the early 1900s, a typical expedition combined two of the island’s famed attractions, Haleakalā Crater and the Ditch Trail. Guided horseback tours trekked to Haleakalā’s summit, through its massive crater, and

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20 George Bowser, “Touring the Valley Isle Nearly Fifty Years Ago,” Maui News, 4 December 1926, Sec. 7, 7.
down via Kaupō Gap to the village of Kaupō. Riders then continued on a rough track to Hāna via Kīpahulu. Near Nāhiku, they took the Ditch Trail through the rain forest to Kailua and then the government road back to central Maui.

A 1915 Hawaii Promotion Committee map delineated the "Famous Ditch Trail" at an elevation of 1,200 feet from west of Nāhiku to the end of the wagon road at Kailua. (Figure 6)

Six articles in the *Mid Pacific Magazine* in 1915 and 1916 enthusiastically recounted adventures along East Maui's trails, using superlative terms to prove that the windward coast's scenery was "unequaled in grandeur." An unidentified author praised Honomanū Gulch as having beauty that "baffled" description, claiming that if its attractions were publicized, "tourists in plenty would assuredly visit it to gaze down its two-thousand foot depth, and to feast their eyes on the wonderful vistas which it affords." Another sightseer enthused that the panorama was so stunning that the journey should be walked, in order to enjoy it longer and not miss anything.

Novelist Jack London conveyed the highlights of his adventure through this "Maui Wonderland." He recounted that the trail was narrow, and like the engineer who built it, "dared anything." London noted that where the ditch plunged through the mountain, the trail climbed over it; where flumes spanned gulches, the trail was carried on the flume. The path traversed nerve-rattling precipices, and London advised that the timid should not make the journey.

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25 Hugh Howell, compiler, "Island of Maui, Territory of Hawaii" (Honolulu: Hawaii Promotion Committee, 1915), University of Hawai‘i, Hamilton Library, Map Collection.

26 "Around About Nahiku," *Mid Pacific Magazine*, February 1915, 168; and Jack Walker, "From Kaupo to Keanae," *Mid Pacific Magazine*, April 1915, 335-337. The *Mid Pacific Magazine* was founded in 1911 by Alexander Hume Ford, a well-to-do journalist who moved to Honolulu in 1907 (John Siddall, *Men of Hawaii*, vol. 2 [Honolulu: Star-Bulletin Ltd., 1921], 165). He tirelessly promoted Hawai‘i and the Pacific. His interests included surfing, mountain hiking, and motoring. While Hume’s magazine featured stories on the Hāna track, he was a much stronger advocate for building a road to the summit of Haleakalā, as will be noted in chapter six.
Some crossings were rickety log bridges that "swayed and teetered" and had to be traversed one horse and rider at a time. London observed that most travelers quickly lost all fear, as the "ceaseless iteration of height and depth produced a state of consciousness in which height and depth were accepted as the ordinary conditions of existence." Looking down 500-foot cliffs from horseback was commonplace, and London claimed, "non-productive of thrills."\(^{27}\)

**Why Build the Road?**

While tourists had long recognized the advantage of traveling the scenic Hāna coast and eagerly anticipated road advancements, residents' initial reasons for demanding better trails were far more pragmatic than sightseeing. Maui's early twentieth-century road-building program was concurrent with the strategy of each major Hawaiian Island to develop belt-road systems. These thoroughfares benefitted the entire island by linking communities, opening land for homesteads, and improving communication. This was particularly crucial for the isolated Hāna coast.

The concept of belt roads dated to the pre-contact era. Hawaiians built a belt trail that completely circumnavigated Maui during the 1500s; other islands had similar thoroughfares. Nineteenth-century missionaries reported that a "paved" track attributed to Pi'ilani's reign extended more than thirty miles and helped them ascend and descend the mountains of Maui's windward coast.\(^{28}\) Segments of this Hawaiian pathway would later be covered by the government trail around East Maui.

Vernadette Gonzalez asserted in her ethnic studies dissertation that the Hāna road was a colonial project of extraction and pacification built by the "plantation efficiency" that helped erode Hawaiian sovereignty. Although her observations of late-twentieth century circumstances along the route may accurately reflect the impact of the byway and tourism on contemporary Hawaiians, her version of the Hāna Belt Road's history is misinformed. Gonzalez's historical overview relies almost entirely on a 1982 travel guide.  

Previous chapters explained how plantations dominated Hawai'i's road boards and directed road and bridge works, often to their own advantage. No evidence was located that demonstrated this to be the case in the Hāna District. Government documents instead indicated that the Kingdom of Hawaii and later the Territory of Hawaii, not the plantations, played a key role, albeit a sometimes ineffective one, in maintaining what was known as the "government trail" to Hāna. Native Hawaiians and other area residents were the primary beneficiaries of this early road and bridge work.

The Department of the Interior built bridges as early as the 1850s (predating commercial sugar in the area) to assist in crossing deep gulches in what were, at the time, the extremely isolated and remote locations of Kīpahulu and 'O'heo in East Maui. Dr. Ray, in 1858, commented that the 'O'heo bridge was important to Hawaiians, who recalled that seven lives had been lost and many near escapes trying to cross that stream. They were inconvenienced by having to travel upstream to cross the gorge in a safer location. The area's two bridges (the other was probably Kīpahulu) promoted "commodious"

29 Vernadette Vicuña Gonzalez, "Touring Empire: Colonial Travel and Global Tourism in Hawai'i and the Philippines," (Ph.D. diss., University of California, Berkeley, 2004), 28. Gonzalez's chapter on scenic roads relies primarily on Ron Youngblood's guide, On the Hana Coast (Honolulu: Emphasis International Ltd., 1982) as well as a few relatively recent newspaper articles. For more on Gonzalez's views of colonialism and road development, consult the dissertation's introduction and chapter one.
communication. The Department of the Interior acknowledged its obligations to the area in 1886, but emphasized the extreme difficulties of maintaining the bridges and seventy-eight miles of road. The government refused to extend the wagon road to Hāna in 1890, noting that the region was too extensive and sparsely populated to justify the expense.

The Maui News was founded in 1900 and served as a valuable source for local views and desires concerning road improvements. Both the Hāna Belt Road and Haleakalā Highway (see chapter six) became major issues. It is critical to acknowledge that the articles and opinions were the voice of Maui’s leadership and may not necessarily represent the views of native Hawaiians and “ordinary” residents.

Various commentaries during 1902 and 1903 highlighted how an improved Hāna byway would benefit the island. A 1902 editorial claimed that one of Maui’s most serious needs was a wagon road to Hāna and Kīpahulu. Another column asserted that a decent roadway would open land for “hundreds of small farmers to live and make money.” Others noted that “thrifty home farms” could produce marketable fruit, stock, and dairy along the entire route, while providing new markets for corn and potato farmers elsewhere on Maui. Observers realized that developed homesteads would raise property values and thus tax revenues. A decent wagon road would also allow a stage to service

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30 John Ray [Rae?] to SPW Metcalf, (date illegible) 1854, requested that two Kīpahulu bridges be repaired; and Dr. Ray to Lot Kamehameha, 4 December 1858, both documents in the Interior Department, Box 43, Subject Files, Roads, Maui, 1851-1858, Hawaii State Archives (HSA), Honolulu.
31 Charles T. Gulick, Minister of the Interior, Report, 1886, Appendix M, cviii-cix; 1890, 332-333. There were numerous references regarding the government’s activities on the Hāna Belt Road and its bridges in the Department of the Interior’s reports, letterbooks, subject files, and other documents deposited in the HSA.
much of East Maui, which would presumably help overcome the area’s isolation.\textsuperscript{32}

These editorials also considered how to obtain the road. One columnist initially advised that revenues from government leases of the East Maui watershed should be used to build a road through the rented lands.\textsuperscript{33} In this scenario, money generated from the sugar plantation’s water rights would have built improvements for residents. This proposal was apparently rejected by the irrigation company. Within six months, a \textit{Maui News} editor reported that the ditch company had offered to convert its track into a public road in exchange for a “fair” or “reasonable concession by the government.” By this time, the proposed byway was deemed too expensive, although in the long run, it was a “cheap investment” that would benefit the entire island.\textsuperscript{34} Despite this possible collaboration with the sugar industry, these editorials focused on the prosperity to be generated from facilitating settlement and small farms.

Editorials persisted in stressing the road’s importance, the most “badly needed” in the islands, which would “work magic” in developing East Maui with small-scale farming and “minor” industries. “What the Central Pacific was to California, and what the Panama Canal would be to the Islands,” the \textit{Maui News} emphasized in 1903, was “relatively what a good road all the way from Paia to Hana would mean to Maui.” Another column claimed that good wagon roads were as essential to the island as arteries were to the human body. The editor predicted the road would bring prosperity that would more than pay for its

\textsuperscript{32} Editorials, \textit{Maui News}, 28 June 1902; 15 November 1902; 27 December 1902; 7 March 1903; and 4 July 1903. Corn and potatoes were grown in the Kula District on the leeward side of Haleakalā.
\textsuperscript{33} Editorial, \textit{Maui News}, 28 June 1902.
\textsuperscript{34} Editorials, \textit{Maui News}, 15 November 1902 and 27 December 1902.
construction. While these commentaries understood the obvious economic benefits, there seemed to be little or no recognition of the advantages to be realized by eliminating the isolation of Hāna District residents.

Despite the editorial pleas, achieving the Hāna road proved difficult. The Territory of Hawaii Department of Public Works (DPW) realized the need to improve the trail, but like its predecessor agencies, lacked the resources to properly keep a road in East Maui’s less-than-perfect conditions. The territory appropriated funds in 1903, but failed to allocate the entire amount. Hana Road Board Chairman Dr. R. F. McGettigan highlighted the shortcomings of the road-tax system when he described the district’s hopeless situation in 1902. He estimated that $240,000 was needed to maintain and build roads and bridges in a district that collected only $1,300 in road taxes. McGettigan articulated the impact of extreme isolation and the difficulties of existing travel, noting that residents were forced to bear the nausea and expense of the steamer or risk dangerous tracks that crossed torrential streams and zigzagged over the numerous pali at grades as steep as 45 percent.

From 1899 to 1905 the territory built new sections of horse trail, and repaired or replaced bridges. (Photograph 5) The superintendent of public works (SPW) explained that because the trail traversed through very rough country, it was built “as narrow as possible in order to construct, with the money available, the maximum length of road.” Despite this work, gaps remained between the paths, and the infrastructure suffered from storms, floods, and deteriorating wood bridges. Freshets during the winter rainy season sometimes

35 Editorials, Maui News, 7 March 1903; 25 April 1903; and 4 July 1903.
37 Dr. R. F. McGettigan, Hana Road Board Chairman, to Henry Cooper, SPW, 20 November 1902, Department of Accounting and General Services Collection, DAGS 7-10, Public Works, Roads Maui, November–December 1902, HSA; hereinafter cited as DAGS Collection.
made travel impossible, as in 1902 when mail carriers could not complete their rounds.\textsuperscript{38}

The County Act of 1905, which assigned the responsibility for public works to the county boards of supervisors, became the mechanism by which Maui residents eventually obtained the Hāna road. The Maui County Board of Supervisors (BOS) immediately demonstrated its serious intentions by appointing Hugh Howell, who had surveyed a road near Hāna road in 1897, as county engineer.\textsuperscript{39} In his role as county engineer, Howell strived to keep the road passable while being economical. He focused on replacing failing, high-maintenance truss bridges with simpler, more cost-effective structures built on durable concrete or rock masonry piers. East Maui had forty-seven bridges in

\textsuperscript{38} John A. McCandless, Superintendent of Public Works, \textit{Report}, 1900, 45, 227; 1902, 33, 39, 47, 55; 1904, 6-7, 40, at the HSA, hereinafter cited as \textit{SPW Report}. 

\textsuperscript{39} "Board of Supervisors Hold Meeting," \textit{Maui News}, 6 January 1906; and J.H. Boyd letter to Hugh Howell, 9 November 1897, Interior Department, Book 89, HSA.
1908, and documents show that the wood structures demanded constant
attention as they were damaged or destroyed by floods, insects, and/or rot.\footnote{40}

Despite this initiative, BOS Chairman William Pogue was not satisfied. In
1909 he attempted to jumpstart belt-road construction (not just the Hāna portion)
with a letter that appeared on the front page of the \textit{Maui News}. Pogue
emphasized that Maui was ten years behind other islands in finishing its belt
road, which was barely halfway around the island. He declared that the meager
funding for roads was unproductive and urged citizens to lobby the BOS and
territorial legislature to complete the byway. Pogue predicted that at the present
pace, it would take fifteen years to finish the thoroughfare, that is, if financing
remained available. He worried that future supervisors might not support the
belt road and concluded it was wiser to secure adequate bonds to finish it,
estimating it could be completed in four years.\footnote{41} “What we want is the road,” he
emphasized, “a good one and in the right location.”\footnote{42}

Pogue’s efforts were unsuccessful, but work continued. The BOS along
with the Maui Loan Fund Commission (MLFC), established in 1911, worked with
the SPW and initiated the construction of twenty reinforced-concrete bridges
along the Hāna coast from 1908 to 1913.\footnote{43} The decision to build concrete
structures was a major advancement and followed the SPW’s directive to build
“permanent” improvements rather than short-lived timber bridges.\footnote{44} In 1912 the
MLFC obtained approval to construct a new portion of the belt road between

\footnote{40} “Supervisors Authorize Improvements,” \textit{Maui News}, 7 April 1906; and “Report of the
\footnote{41} “Advocates Belt Road,” \textit{Maui News}, 6 November 1909.
\footnote{42} William F. Pogue to SPW Marston Campbell, 29 December 1909, DAGS Collection,
DAGS 7-31, Public Works, SPW Maui 1905-1910, HSA.
\footnote{43} State of Hawai‘i, Department of Transportation, Bridge Inspection Reports, on file at
the Maui District Office in Kahului, Hawai‘i, hereinafter referred to as HDOT Bridge Inspection
Reports.
\footnote{44} Charles S. Holloway, \textit{SPW Report}, 1904, 4-5.
Nāhiku and Keʻanae, which was built by contractor Johnny Wilson. These improvements demonstrated local officials' resolve and were also timely, as Hāna residents were complaining about the unreliable weekly steamer service, which failed to maintain a regular schedule.

The BOS and MLFC seemed to achieve success in these early efforts to improve the belt road, first, because the agencies were local, thus solely focused on Maui (not territorial) needs. Furthermore, the MLFC may have been more effective because its only duty was Maui County public improvements. Its efforts to build concrete bridges throughout Maui served as a significant foundation for future belt-road projects when money became available.

Going the Scenic Route

In 1914 a Maui News editorial claimed that a scenic route along the Hāna coast was the "key to progress" that would put Maui on the "tourist map." Civic leaders recognized the necessity of making Maui's attractions accessible. Perhaps as a result of visitors riding the "Famous Ditch Trail" and the publicity generated in periodicals like the Mid Pacific, the argument for a road shifted from the economic benefits of accessing land to the advantages to be gained from establishing tourism as a new industry to supplement sugar and pineapple. It seemed that Mauians finally understood what visitors had long appreciated, that there was "no finer scenery in the Territory than along the north coast of

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45 William F. Pogue to Governor W. F. Frear, 25 November 1912, Walter Frear Collection, Gov 3-3, Loan Fund Commission, Territorial Departments, Loan Fund-Maui, HSA; and "Belt Road Bids Opened," Maui News, 5 October 1912. Hugh Howell, at this time a private contractor, also submitted a bid on the project.

Maui.” As such, the editorial advised that completing the Hāna road should be a priority. 47

This new justification for road building was quickly rejected. While Wilson built the road near Nāhiku, the MLFC decided that $135,000 should be allocated to extend it the final few miles into Ke’anae. The BOS supported the plan and informed Governor Pinkham that this road was Maui’s priority; it would not seek loan funds for other projects. After inspecting Maui, Pinkham renounced any benefits of a scenic road and vetoed the project, emphasizing that it had no “utilitarian necessity.” 48 The Maui News asserted that Pinkham “expressed his disapproval of Maui in various ways” and hinted that he unfairly axed its projects. 49

The newspaper did not explain the circumstances behind Pinkham’s veto. The governor’s records showed that he was not against tourism; he had previously expressed that a road to Haleakalā’s summit would benefit the entire Territory. 50 By 1914, however, he was concerned about economic uncertainties and tight bond markets during World War I. He furthermore expressed serious doubts about the project, noting that MLFC goals and work underway were “entirely beyond the means of the Territory or County of Maui.” 51 Pinkham was convinced that the Ke’anae extension’s price tag would be over $300,000. In his opinion, Maui’s tourism potential rested with Haleakalā and ʻĪao Valley, the

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47 “The Key to Progress,” editorial, Maui News, 16 May 1914.
50 Pinkham to Charles R. Forbes, 20 October 1914, Lucius Pinkham Collection, Gov 4-4, Territorial Departments, Public Works, August–December 1914, HSA.
51 Pinkham to R. A. Wadsworth, Maui LFC, 12 May 1914; and Treasurer, Territory of Hawaii, to R. A. Wadsworth, Maui LFC, 29 May 1915, both letters in Pinkham Collection, Gov 4-2, Territorial Departments, LFC-Maui, HSA; Pinkham to Charles R. Forbes, SPW, 20 October 1914, Pinkham Collection, Gov 4-4, Territorial Departments, Public Works, August–December 1914, HSA.
island's principal attractions at that time. As such, the governor recommended that residents concentrate on improving access and facilities for those places rather than the windward coast. He cautioned, "... conditions at the present time, certainly in the tourist business, do not warrant the expenditure of so large a sum for so inadequate a probable return in the near future." Pinkham concluded that if Maui citizens wanted public improvements, there were people "rich enough" to finance their own bonds. This method, in his view, was appropriate: residents should stand on their own feet, making "Maui improvements with Maui money."  

Pinkham's adamant opinions regarding Maui's ambitions demonstrated that politics probably played a role. An examination of his files and the events during his administration perhaps illustrates some underlying tensions. The governor was a Woodrow Wilson (Democrat) appointee in a Republican-dominated territory. Maui's civic leaders were staunchly Republican; many had plantation interests. The Maui News proudly proclaimed itself Republican as well. Pinkham also distrusted at least one Maui notable. In a private letter he claimed that Pogue supported his own interests, to the "financial and other detriment of the public." The situation was further complicated by disputes over sugar tariffs, which placed Hawaiian planters at odds with the Wilson Administration. Pinkham blamed the plantation lobby's cantankerous behavior for the industry's problems.  

52 'Letter from Governor Pinkham, October 2, 1915,' in Record of Proceedings of the Third Annual Civic Convention, 39-40.  
53 The Maui News editorial page of 16 May 1914 proclaimed, "A Republican Paper Published in the Interest of the People."  
54 Pinkham to Dr. J. H. Raymond, 13 October 1915, Pinkham Collection, Misc., Dr. J. H. Raymond, HSA.  
55 'Letter from Governor Pinkham, October 2, 1915,' in Record of Proceedings of the Third Annual Civic Convention, 41-42. The Underwood Tariff was signed in October 1913 under a Democratic administration, and the price of sugar dropped to 2.28 cents a pound and did not recover until after Congress repealed the act in 1916 (Ralph Kuykendall and A. Grove
Pogue’s 1909 concerns regarding intermittent roadwork proved prescient.

Johnny Wilson’s firm, although plagued by heavy rain, finished a “fine piece of road” near Nāhiku in 1914. The *Maui News* noted that it traversed some of Hawai‘i’s most spectacular scenery, unfortunately the roadway was “useless” because it ended in the middle of a forest. The newspaper again criticized Pinkham for vetoing the necessary Nāhiku-Ke‘anae extension.\(^{56}\)

In 1915 a brief *Maui News* commentary seemed to agree with Pinkham’s suggestion that residents “stand on their own feet.” It revived the proposal to upgrade the ditch trail into a motor road, at least from Kailua to Ke‘anae. The editor noted that good, permanent concrete bridges had already been erected (thanks to the MLFC work), the track’s grade was suitable, and road construction would only cost a “few thousand dollars.” Although this would not bridge the gap to Nāhiku, the action would help keep Maui on course in completing its belt road.\(^ {57}\) Roadwork, however, remained stalled, but the MLFC program to replace failing wood structures with reinforced-concrete bridges (which were relatively inexpensive compared to proposed road projects) forged ahead. Eight new bridges were erected in 1915 and 1916, including a barrel-arch structure that dramatically spanned the scenic gorge and waterfalls at ‘Ohe‘o Gulch near Kīpahulu. This bridge represented the latest in modern technology.\(^ {58}\) (See photograph 15)

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\(^{58}\) HDOT, Bridge Inspection Reports. These reports indicate that at least five bridges were constructed in 1915 and three in 1916. ‘Ohe‘o Bridge was one of these structures, a barrel-arch bridge built in 1916 for $6000 by E. C. Mellor. The bridge dramatically spanned the scenic gorge and waterfalls in an area that was eventually incorporated into the Kīpahulu Section of Haleakalā National Park. “New Contractor Lands Oheo Bridge Contract,” *Maui News*, 25 August 1916; Joel B. Cox, *Report of the Work of the Maui Loan Fund Commission for the*
Maui residents refused to be discouraged, but instead cultivated their plans to stimulate tourism by means of scenic roads. Concurrent with the Hāna proposal was the drive to convince territorial and federal officials that there ought to be a companion route to Haleakalā Crater. In 1914 a Maui News editorial, referring to a Chamber of Commerce discussion on scenic byways, touted tourism as “Hawaii’s destiny” and “laden with gold;” there was little anyone could do to avoid it. By 1917, both roads were viewed as attractions to “bait” visitors not just to Maui, but to Hawai‘i. Civic leaders realized that if Hawai‘i, not just Maui, wanted to “properly care for the ever swelling tide of tourists,” it had to make its attractions easily accessible. A fresh approach in the argument was that infrastructure that encouraged tourism would benefit all the islands, thus territorial money, not just county funds, should help pay for these projects. The commentary pointed out that no one had objected to territorial funds constructing the road to Kilauea Volcano, and the territory should help build byways to Hawai‘i’s other attractions as well.59

In 1921 Territorial Representative John Fassoth, anticipating the legislative session, apparently attempted to re-energize the Hāna scenic and belt-road issues for the Maui News. As the owner of Kipahulu Plantation, Fassoth obviously had much to gain from transportation improvements, yet he

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emphasized the project’s broader implications. Fassoth viewed road communication as the territory’s, especially Maui’s, most important issue.60

Fassoth praised Kaua’i and Hawai’i Island for building byways that connected destinations. In contrast, he maintained that Maui had not done a sufficient job of building passable roads to link its significant centers. Fassoth asserted that Hāna was as isolated as if it was on another island and insisted that this constrained everyone on Maui. Observing that the Hāna road would be a “tremendous asset in attracting tourists,” he concluded that Maui lost income from visitors. The incomplete byway also meant there was no incentive to develop land for agriculture, which retarded commerce and deprived the county government of tax revenues from higher land values. Businessmen wasted time and money because travel between central Maui and Hāna was slow (one week) and expensive. Finally, the lack of a good road hindered island-wide trade.61

Although not specifically mentioned, Fassoth appeared to be quite well informed of Hawai’i’s crusade to gain federal aid. He wanted the U.S. government to provide Maui with $500,000 for road building, emphasizing that the territory paid substantial U.S. taxes, but got nothing in return. He rebuked the federal bureaucracy for pouring money into Hawai’i for its “own protection” (defense), which in Fassoth’s opinion, did not benefit the territory. Fassoth believed that Congress was only interested in the “opportunity to collect taxes,” not in helping Hawai’i develop. A Maui News editorial, “Connect Maui Up,” supported him by reiterating the benefits of a good automobile road. While Fassoth’s opinion appeared to border on resentment of the federal government,

he was obviously aware of the larger issues and understood that Maui's general
development depended on good roads to connect island communities and
"industrial sections" (plantations).62

"Connecting Maui Up"

In early 1923 Maui's civic and business leaders finally organized a
successful campaign to obtain loan funding for the Hāna portion of the belt road.
Rather than using the tactics that had failed with Pinkham (which emphasized
the scenic road reasons for building the byway), they enthusiastically convinced
the new governor, Wallace Farrington, that Maui County was ready and able to
commence and complete construction.

The first part of the campaign to win Farrington's support was to finalize
County Engineer Paul Low's survey and estimates. Low's work was based on
data from previous surveys calculated by the former MLFC and county
engineers, including Howell. For unspecified reasons Low divided the project
into two phases, Kailua to Ke'anae (11.67 miles) and Ke'anae to Wailua Iki
(5.66 miles). The entire cost was estimated at $692,000.63 Low planned to
build a sixteen-foot wide "bench" (i.e. roadbed, which in many locations was
literally a bench blasted onto the side of a cliff, much like the Pali carriageway)
with a twelve-foot-wide macadam pavement.64

The decision to build two phases likely reflected the necessity of building
the road in manageable units as far as construction difficulty and cost were

62 "Roads First Need View Of Fassoth," Maui News, 2 February 1921; and "Connect
63 "Estimate Made Belt Road Cost By Way Kailua," Maui News, 13 January 1923; and
64 A. P. Low, County Engineer, "Report to the Board of Supervisors for the Month of
December 1922," 11 January 1923, Wallace Farrington Collection, Gov 6-14, General Files,
County of Maui 1921–1924, HSA; "Itemized Costs Proposed Belt Road Presented," Maui News,
19 January 1923. Low's report to the Board of Supervisors named the former MLFC and
County Engineers who contributed to his road survey: Howell, Harvey, Brune, Foss, and Cox.
concerned. Low planned to open the highway as far as Ke'anae first, enabling direct access with central Maui. The second phase of the project, although a shorter distance, was through more rugged terrain that presented greater technical and financial challenges.

With Low's estimates in hand, the BOS, now led by Chairman Sam Kalama, a Hawaiian, mustered support for the project. Kalama presented the plans to the Maui Chamber of Commerce, which established a "Belt Road Committee," chaired by Pogue, to further the BOS efforts.\(^{65}\) Even without the promise of financing, the BOS demonstrated its commitment to the project by purchasing a steam shovel and hiring twenty men to work near Ke'anae. Low also selected a location for a prison labor camp as the BOS planned to ask the governor for a prison workforce of fifty men to save on expenditures. The BOS then informed the governor of its intention to seek $300,000 for construction. According to the *Maui News*, there was never "such a concerted and systematic demand for the road in all the more than 20 years it has been under consideration."\(^{66}\)

Kalama, Low, and the county attorney met with Farrington, SPW Lyman Bigelow, and other officials in Honolulu in May 1923. Bigelow inspected and approved the project; Governor Farrington authorized the bonds needed to build the road.\(^{67}\) In addition to tenacity, their success was probably due to the improved postwar economy and politics. Hawai'i shared in the good fortune of the prosperous 1920s, with the territorial and county governments spending

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\(^{65}\) "Supervisors and Committee Agree As To Belt Road," *Maui News*, 8 February 1923.  
\(^{66}\) "Belt Road Work Will Be Started By Maui County," *Maui News*, 10 March 1923.  
\(^{67}\) "Belt Road Project Is To Go Forward At Once," *Maui News*, 26 May 1923; and "Bids for Belt Road Work Asked," *Maui News*, 14 August 1923.
significant amounts on capital improvements, including roads. Farrington, like Kalama, was also a Republican.\(^{68}\)

Despite the *Maui News*’ enthusiastic support of the road to Hāna over several decades, the newspaper made little mention of construction progress during the project’s first phase. In May the *Maui News* reported that the two steam shovels, which worked from both ends, were close to meeting. County supervisor Frank Summerfield and three friends drove over the rough, unfinished track and generated great excitement when they remarked that not only would the road soon be ready, it would be one of the island’s most scenic driveways. Kalama was extremely disappointed by the unauthorized joyride as he wanted Governor Farrington to have the honor of being the first to drive the new byway. The county engineers were not pleased to hear of the ride; they expressed safety concerns. Their reaction was the only information found that conveyed the project’s challenges. Engineers pointed out that the distance was only four miles as the crow flies, but from beginning to end, the road itself was twelve miles of winding up and down, in and around the mountains and valleys.\(^{69}\)

When the road to Ke’anae opened in June 1925, the justification for building it was inescapable. At the opening celebration, Farrington asserted that this byway marked the beginning of a new era in Maui’s history. He predicted that the scenic road would be a “tourist paradise” that would start a new “industry” as valuable as sugar and pineapple, not just for Maui, but for all


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of Hawai‘i. The governor anticipated that this transformation would take ten years and that visitors would come from around the world.\textsuperscript{70} (Photograph 6)

Photograph 6: Opening Day, Hāna Belt Road, Ke‘anae, 1925.
Governor Wallace Farrington (right) with William Pogue at the opening of the Kailua-Ke‘anae section of the Hāna Belt Road, Kamehameha Day, 11 June 1925. (Courtesy Hawai‘i State Archives, Photo Album #87b.)

Like previous travelers, Farrington marveled at the landscape along the thoroughfare, a “gorgeous spectacle . . . the blue sea in many places hundreds of feet below you, the white surf . . . the many gulches and every playing light, shade and color on the sides of beautiful and majestic Haleakalā.”\textsuperscript{71} Farrington also warned of the potential problems from accessibility. He cautioned homesteaders (Hawaiians) not to be tempted to relocate for other opportunities on the island, but to instead stay on their land, maintain their leases, and reap the benefits from the soil, their community, and the new byway.\textsuperscript{72}

\textsuperscript{70} “Maui Turns Out To See Opening Of Scenic Road,” \textit{Maui News}, 13 June 1925.
\textsuperscript{71} “Maui Turns Out To See Opening Of Scenic Road,” \textit{Maui News}, 13 June 1925.
\textsuperscript{72} “Maui Will Share New Loan Fund Governor Thinks,” \textit{Maui News}, 13 June 1925.

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While tourism remained the primary objective, the scenic drive also appealed to local residents. Some 1,500 persons in a 250-car cavalcade demonstrated the excitement generated by the road; about 2,000 people attended the lū‘au (Hawaiian feast). Most of those in the automobile procession were undoubtedly local residents, who drove the road to enjoy vistas they had never seen. Honomanū Gulch, which had thrilled adventurers along the ditch trail, was the journey’s climax. An extraordinary piece of engineering, the serpentine roadway descended down a steep mountain cliff, through the valley floor, and across several bridges before climbing up another steep cliff to exit the valley. From high points along the road, motorists could look back across the bay to see what they had travelled across.\textsuperscript{73}

The day’s activities demonstrated the influence of foreign cultures on the remote and isolated coastal communities. One of the featured events was a baseball game, billed as (America’s) “national pastime,” but played by multi-ethnic teams that included Hawaiians.\textsuperscript{74} It is significant that opening day was Kamehameha Day, a public holiday that honored Hawai‘i’s first monarch. Although it is unknown who made this decision, the \textit{Maui News} explained that it was because Kamehameha “promised safety and progress” for his people and the road reflected the “promises of that truly great leader.”\textsuperscript{75}

The \textit{Maui News} praised Pogue and Kalama for their efforts, claiming their twelve-mile byway was a tourist asset “hard to compute in monetary terms” that would also delight the Maui community.\textsuperscript{76} Pogue, Farrington, and the \textit{Maui News} editor, eagerly anticipating tourism, advised that the drive to Haleakalā

\textsuperscript{74} “Maui Will Share New Loan Fund Governor Thinks,” \textit{Maui News}, 13 June 1925; and “Maui’s New Road,” editorial, \textit{Maui News}, 17 June 1925.
\textsuperscript{75} “Maui’s New Road,” editorial, \textit{Maui News}, 17 June 1925.
\textsuperscript{76} “Maui’s New Road,” editorial, \textit{Maui News}, 17 June 1925.
Crater should be built next. Farrington predicted that a Maui visit that included the crater and Hāna would become one of Hawai‘i’s most popular trips.77 Good roads throughout Maui were considered crucial in establishing this “third business,” part of a plan of “sowing seed for a bountiful harvest of tourists.”78 Another commentary asserted that since catering to tourists was a business, a road to Haleakalā’s summit ought to be considered a “commercial” enterprise.79 The argument that scenic roads were not a frivolous use of taxpayer dollars, but a wise investment, was apparently worth repeating.

The byway drew interest from the U.S. mainland, with Los Angeles Times artist O. H. Owens marveling at the flora and describing the scene.80 As far as Maui’s leaders were concerned, the best news of opening day was Farrington’s prediction that the loan needed to finish the road was likely forthcoming.81 The inter-island steamer company representative also took notice, predicting that the new belt road was Maui’s “best bet” for tourist travel. He reminded Mauians that most visitors avoided Haleakalā because it entailed a horseback trip, not an automobile. He suggested “playing up” the new road, suggesting that Kaua‘i would draw tourists if Maui did not make the best of its opportunity.82

*Pushing through to Hāna*

A month after the Ke‘anae section opened, President Calvin Coolidge approved a territorial bond issue that included $150,000 to continue building the

77 “Maui Will Share New Loan Fund Governor Thinks,” Maui News, 13 June 1925; and “A Road to the Summit,” editorial, Maui News, 13 June 1925.
78 “Sowing for the Future,” editorial, Maui News, 1 July 1925.
79 “A Road to the Summit,” editorial, Maui News, 13 June 1925.
82 “Road To Keanae Now Maui’s Best Bet To Draw Tourist Travel,” Maui News, 7 October 1925.
Hāna Belt Road. Work immediately commenced on the byway's final link. Maui News articles between August 1925 and December 1926 provided updates on the last 3.5 miles of byway, which proved to be some of the most difficult. The construction challenges demonstrated the determination and skills of Maui's leaders, engineers, and laborers.

In March 1926 Low reported that the steam shovels were making little progress. One was out of service for more than a month after it "turned turtle" into the gulch. The accident was probably avoidable; Sam Kalama had inspected his "pet project" and was trying to rush the work. To retrieve the machine, laborers had to disassemble it piece by piece, reassemble it, then send it to Kahului for repairs. Soon after that, the other machine broke a gear. Despite equipment problems, Low reported that the manual labor was proceeding smoothly and complimented his prison laborers for doing excellent finishing work on the recently opened Ke'anae section. Other gangs were working on bridge approaches and stone masonry.

Both steam shovels returned to service the next month, but Low anticipated that progress would remain slow. He noted that both the Ke'anae and Hāna gangs were laboring against solid rock, which required considerable blasting and work by hand. To accomplish this work, men tied thick ropes around their waists and were lowered over the steep cliffs. They then dug a footing in the rock, set their drills, bored holes in the rock, and set the powder

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and fuses that blasted the new roadbed. Only after blasting the rock could the steam shovel begin its job.\textsuperscript{86}

Low enthusiastically updated the supervisors in May, estimating that the road might be ready by October. He explained that only a mile and a half of one of the “prettiest and most scenic roads in the entire territory” was needed to connect Hāna to the rest of Maui. Two groups of workers, none of them prisoners, were blasting their way through hard rock. The work was especially difficult from the Ke’anae side, where laborers “slowly but surely” dynamited through the mountains. Although Low’s earlier survey provided for a twenty-foot-wide roadbed, only sixteen feet was being benched into the mountainside; no explanation was offered. Supervisors quizzed Low about how the scenery along the new stretch of road compared with the recently opened Ke’anae section. In Low’s opinion, there was no comparison. He delighted in the section under construction in Wailua Nui Valley, where the road wound along the mountain on an elevated ledge for almost a mile, providing a panoramic view of the taro lo‘i and rice paddies of “quaint Wailua” below.\textsuperscript{87}

A week later, Low escorted the BOS on a tour of the project site at Wailua Nui, which was the last major piece of work to be done and proved to be one of the most difficult. Supervisors inspected the entrance to the valley, where they saw a solid wall of rock about 110-feet long. To bench the road, laborers tunneled into the rock in ten locations and placed large charges of dynamite therein to blast out the rock. Their work was complicated by a nearby ditch that watered the Akiona family’s taro lo‘i and rice paddies. Laborers dug a

\textsuperscript{86} “Builders Progress In Construction of Belt Road Project,” \textit{Maui News}, 17 April 1926; and “Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading to Hana,” \textit{Maui News}, 22 December 1926.

\textsuperscript{87} “Keanae-Wailua Link Belt Road Ready In Fall,” \textit{Maui News}, 8 May 1926. Low originally wanted the road opening to coincide with the popular Maui County Fair, which was usually held in October.
temporary ditch to keep their water flowing. Low was pleased with his crews' progress and expected to have the steam shovels moving along the new bench soon. SPW Bigelow added to the good news by approving the plans for the project's remaining major task, building the Wailua Nui Bridge.88

Excellent progress continued. Charles Bailey, an engineer praised by Kalama as one of Hawai‘i’s best bridge builders, supervised the construction of the West Wailua Iki Bridge in 1926. Designed by A. H. Wong, an assistant engineer in the County Engineer’s Office, the structure was set amongst some of the coast’s most striking scenery.89

During May steam shovel crews made good headway, with the Hāna shovel moving about 1,900 feet. The Ke‘anae shovel was in the midst of the high cuts and a rocky stretch in Wailua Nui Valley. The majority of the work in these often inaccessible locations was done by hand. Sand and gravel were delivered to bridge locations, where concrete was mixed on site. Overhanging boulders were sometimes chiseled off the cliffs. Workers used hand tools to clear the roadbed in preparation for the steam shovels and to top-dress the roadway. Many of the masonry retaining walls and bridge abutments were hand-laid using the rock made available by the road excavations and blasting. The month’s considerable gains came at a great price when a blast sent a rock flying over the ridge and into the next gulch, killing a twenty-five-year-old worker, Kaonohi Kaiwi.90

88 "Workers Blast Tons Of Rock On Belt Road," Maui News, 15 May 1926. Wailua Nui Bridge is the structure’s historic name, as noted on 1926 bridge plans at HDOT. The valley and stream where the bridge was built is Wailua Nui. It is unclear when the bridge became known as “Waikani” as it is called in contemporary times. This name may have been assumed as it refers to the name of the adjacent waterfall.
90 "Substantial Gain Made On Belt Road During Past Month," Maui News, 12 June 1926; and "Belt Road Worker Killed in Blast," Maui News, 29 May 1926.
Work came to a grinding halt in July when a landslide near Wailua Nui sent tons of rock and dirt into the gulch and trapped the steam shovel. Kalama (not Low) was “jolted” out of bed by a phone call informing him of the disaster, an indication of his day-to-day involvement with his “pet project.” The shovel was extracted from the mess the same day, but progress was impeded by a small slide the following day.\footnote{“Land Slide Halts Progress of Work On Maui Belt Road,” \textit{Maui News}, 10 July 1926.}
After a year of digging through mountains and blasting through solid rock from both ends of the project, the steam shovels finally met at the foot of Waikani Falls in Wailua Nui Valley in August 1926. Low was confident that the new road would open in November, pointing out that the difficult work was finished and the remaining tasks were “minor.” One major project, however, remained to be done, the construction of Wailua Nui Bridge, which had been postponed until the roadbed could be cleared through to the worksite so that materials could be delivered.92

The impressive construction gains prompted the Maui News to lavish praise on Low and Kalama. Low was credited with supervising one of the finest and most difficult road engineering works on Maui. Even though the job was not finished, the newspaper credited the young engineer (he was thirty-five) with completing it well within budget. Kalama was recognized as the person who made the road a reality, since it had been his dream for more than a quarter century. The Maui News reminded readers that Kalama stayed on the BOS so that he could push the project through to completion.93

Moses Akiona of Ke’anae was awarded the contract to build Wailua Nui Bridge; his crews began erecting the framework in August. Designed by Maui architect William D’Esmond in partnership with Low, the open-spandrel concrete-arch structure featured two rib arches and was 130 feet long and ninety feet high.94 The bridge was strategically located for maximum scenic effect in front of Waikani Falls, gracefully spanning the deep gorge at the end of the scenic, mile-long ledge above Wailua that Low had described as “without

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94 “Shovels Finish Belt Road Work,” Maui News, 11 August 1926; and Wailua Nui Bridge Plans, 1926, HDOT files.
comparison." Driving along the cliff towards the end of the valley, motorists would be treated to a view of an elegant arch bridge framed by the breathtaking scenery of the valley, lush vegetation, waterfalls, and high cliffs. (Photograph 8)

Although Low had hoped to open the road in November, he was instead monitoring Akiona's progress. Crews had poured the arch ribs; the forms were erected for the central superstructure; the bulkhead walls and both end spans were nearly completed. Low was pleased with the progress, but in order to give Akiona's crew adequate time to finish the bridge, he delayed the road's official opening by a week. The county then announced plans to open the byway the Saturday before Christmas, 18 December 1926.95

Photograph 8: Waiula Nui Bridge, Hāna Belt Road. Designed by Low and architect William D'Esmond, Waiula Nui (Waikani) Bridge, built in 1926, was one of the most technically sophisticated and aesthetically pleasing bridges along the Hāna Belt Road. (Photograph by author.)

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95 "Road Linking Hana With Rest Of Maui Will Be Opened Officially December 18, With Celebration," Maui News, 13 November 1926.
Despite everyone’s best efforts, East Maui’s notorious weather interfered with the timely completion of the bridge. The same day that the *Maui News* announced the date of the opening celebration, heavy rains washed out the bridge’s formwork and scaffolding. Approximately 600 bags of cement were washed into the stream below, and landslides covered the roadbed near the structure. Low determined that the damage would only cause a few days delay. The major loss was the large quantity of concrete. Even though the formwork had washed away, it had already been scheduled for removal as the concrete had been curing for nearly a month. Officials were confident that work could still be completed in time for the scheduled opening.96

Within three weeks of the Wailua Nui flood, Akiona’s team completed the superstructure and was finishing the bridge railings. Although all of the formwork was to be removed prior to the opening on December 18, photographs at the Hawai‘i State Archives illustrate that it remained.97 One week before the opening, the steam shovel operator was widening the road and finishing a scenic lookout into upper Ke‘anae.98

*Approaching the Journey’s End*

During 1926, Maui residents, especially those of the Hāna District, demonstrated their increasing excitement over the byway that would finally end their isolation. Sheriff Clem Crowell aroused the community’s interest in May 1926 after he visited the “practically unknown end of Maui between Nahiku and Kipahulu” and enthused that the scenery “beggar[ed] description.” He also

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96 “Flood Threatens Belt Road Bridge,” *Maui News*, 17 November 1926.
97 Photograph of Wailua Nui Bridge, [18 December 1926], Photograph Album 87b, HSA; and “Final Touches Given Program For Opening of Hana Belt Road,” *Maui News*, 11 December 1926.
warned that he would have to educate people from the "Hana side" about traffic rules and regulations.  

Hana's Kaahumanu Society, a Hawaiian women's civic club, announced in July that they would hold a fair on opening day. The society wanted to mark the "epoch making event" that would connect their community to Central Maui. In August, thirty motorists were so restless about the prospects of the new thoroughfare that they ran around a locked construction gate for a Sunday drive over the road, prompting Kalama to fear for their safety as the unfinished track was susceptible to landslides. John Medeiros anticipated a business opportunity by erecting a new hotel in Hana to coincide with the road's opening. "Automotive expert" James Faufata ran a brisk business tuning motorcars in Ke'anae for those intending to drive as part of the opening celebration.

In November the Maui News noted that the December road opening would be "somewhat of a Christmas present to the people of Maui." Maintaining its community focus, the newspaper stressed the importance of the long-awaited connection, a milestone that would "unite Maui in fact as well as in spirit." BOS member H. A. Drummond of Hana, who chaired the committee in charge of the opening festivities, redirected the attention back to tourism. He declared that the road's completion was "epochal" and there was "no doubt that

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100 "Hana Kaahumanus Will Hold Fair At Belt Road Opening," Maui News, 14 July 1926.
102 "Hana Notes: Hana Building Up," Maui News, 10 November 1926; and "New Hotel At Hana Ready For Visitors," Maui News, 15 December 1926. Medeiros' hotel was ready on opening day to accommodate travelers wishing to overnight in Hana.
103 "Hana Notes, Tuning Up for 18th," Maui News, 15 December 1926.
104 "Road Linking Hana With Rest Of Maui Will Be Opened Officially December 28, With Celebration," Maui News, 13 November 1926.
in the not distant future Hana will be one of the meccas for tourists from every
part of the world.\textsuperscript{105}

The celebration committee seemed to be acutely aware that the new
byway and its associated festivities were an opportunity to showcase Hāna.
The entire community was recruited to host and entertain invited dignitaries,
including Farrington, Bigelow, and Delegate-Elect to Congress Victor Houston;
as well as other government officials, Hawaii Tourist Bureau (HTB)
representatives, and the general public. William Pogue was no longer on the
BOS, but as the "champion of the belt road" was considered a special guest.\textsuperscript{106}
Hāna’s plans were on an elaborate scale as residents prepared to host up to
5,000 people.\textsuperscript{107}

The Maui sheriff’s department was also involved as traffic control would
be a major operation. Despite Low’s initial plans, the road was not
macadamized, but remained a dirt surface; it was also narrower than originally
planned. Sheriff Clem Crowell and his sheriffs arranged a schedule as to when
and in which direction automobiles could travel the route. The team established
traffic regulations and scheduled the byway to close in mid-afternoon to allow
traffic to return to central Maui. They insisted that motorists ensure that their
tires and automobiles were in road-worthy condition. Crowell wanted to prevent
breakdowns that might delay the entire procession, thus ruining the schedule for
the lū’au and other activities at the end of the road.\textsuperscript{108}

\textsuperscript{105} "Hana Prepares For Reception Of Farrington," \textit{Maui News}, 8 December 1926.
\textsuperscript{106} "Houston and Farrington Will Be Here," \textit{Maui News}, 4 December 1926; and "Final
Touches Given Program For Opening Of Hana Belt Road", \textit{Maui News}, 11 December 1926.
\textsuperscript{107} "Final Touches Given Program for Opening of Hana Belt Road," \textit{Maui News}, 11
December 1926.
\textsuperscript{108} "Governor Looks Forward To His Drive To Hana," \textit{Maui News}, 15 December 1926.
222
Introducing Hāna to the World

The Hāna Belt Road opened on 18 December 1926, which was declared a public holiday on Maui. Police were posted at strategic locations along the route to direct traffic and assist motorists. Boy scouts were available to help in the event of car trouble. Two-hundred automobiles joined the procession to Hāna and were greeted by residents, decorations, flags, and triumphal arches proclaiming “Aloha,” “Welcome,” and “Maui No Ka Oi (Maui is the best).” The multi-cultural plantation community of Hawaiians, Americans, Filipinos, and Japanese contributed to the day’s success.

Aside from the drive to Hāna, the day’s main activity was a lūʻau, with villagers serving about 3,500 guests at the pineapple cannery, the only structure large enough to accommodate such a crowd. The Kaahumanu Society held its crafts bazaar; the district’s children participated in a parade. The Maui News complimented Hāna for a successful event, which would have been a tremendous undertaking even for a much larger population. The visitors surely exceeded Hāna’s population, as census statistics indicated that the entire district had just 3,100 residents in 1920.

The Maui News published extensive coverage on the inauguration of Maui’s “newest scenic asset.” With its typical use of superlatives, writers applauded the Hāna Belt Road as the “greatest road making achievement in the Islands, fraught with tremendous difficulties in engineering and construction” and completed by “dare-devil exploits.” They proclaimed it was the “most

111 “Hana Prepares For Biggest Day,” Maui News, 22 December 1926; and “Hana Host At Celebration Marking Official Opening of the Road Which Links Together All Parts of Maui,” Maui News, 22 December 1926.
marvelous scenic driveway in the world,” with vistas of lofty mountains, the Pacific Ocean, wild canyons, cataracts, and luxurious tropical vegetation.\(^{113}\)

Recapping the history of the road, the *Maui News* praised county leaders (not the engineers and construction laborers) for overcoming Maui’s challenging terrain and climate to build a narrow shelf of road over the mountains and through the rain forest. The newspaper congratulated Pogue, Kalama, Low, Drummond, and Fleming (also a supervisor) for accomplishing a “coup d’état” in the annals of road-building history. Pogue was credited with jumpstarting the project in 1909 when the first appropriations were granted for concrete bridges.\(^{114}\) The *Maui News* did not mention, as it had in its coverage of the Ke’anae celebration, that Kalama and Pogue had originally discussed the need for a good road to Hāna thirty-one years earlier in 1895.\(^{115}\)

The significance of the belt (as opposed to scenic) road was not ignored, with an editorial observing that motorists could drive from one end of Maui (Lahaina) to the other (Hāna) in only five hours. Even so, forty-four more miles were needed to completely encircle the island and accommodate motorists. Much of the thoroughfare remained primitive: the Hāna segment could “not be whirled over in haste;” it was rough going.\(^{116}\)

The *Maui News* described the “visions of beauty” that unfolded along the road, but it also perceived that the taro patches that the “old Hawaiian civilization” had so highly valued were slowly fading beneath the “advances of


\(^{114}\) “Marks Epoch in Progress Of Maui County,” *Maui News*, 18 December 1926.


\(^{116}\) “Marks Epoch in Progress Of Maui County,” *Maui News*, 18 December 1926; and “Maui’s Newest Scenic Asset,” editorial, *Maui News*, 22 December 1926. The Maui Belt Road was finally completed for automobile travel in 1952 when the last segment around East Maui was built between Kanaio and Nu‘u. The last five-mile section in West Maui was also completed that year (Charles C. Young, “Maui to Have Encircling Belt Road,” *Honolulu Star-Bulletin*, 19 May 1950, 5; Robert M. Belt, *SPW Report*, 1952, 18).
mingled Occidental and Oriental mode of living."^{117} There was no recognition of the contradiction between this observation and an adjacent column that remarked that local children held American flags at the celebration. Farrington’s speech repeated his encouragement for Hawaiians to stay on their land and thus perpetuate their culture.\footnote{118}

While the road was officially opened, work along the new byway was not complete and the challenges faced during construction remained. The night the road opened, rains caused a small landslide, which closed the road to traffic for several hours the next morning.\footnote{119} Future work included widening, but the primary task was to replace the remaining wood bridges with reinforced-concrete structures. The MLFC had built many such bridges since 1911; others were erected in conjunction with road construction projects. In 1927 all the bids for Kūhiwa Bridge were over budget, so Low’s crew from the county engineer’s office erected the concrete-arch structure for less than the estimated cost.\footnote{120} Additional bridges were built in 1928 and 1929, with the last two wood bridges replaced in 1947.\footnote{121}

Did the Road “Harvest” the “Tourist Crop?”

Despite the enthusiasm over the completed drive, the ambition of attracting tourists seemed to send mixed messages. HTB officials, “exuberant” over their visit to Hāna, immediately proposed weekly excursions to the village,

\footnote{117}“Magnificent Scenery Unfolds,” \textit{Maui News}, 22 December 1926.  
\footnote{119}“Magnificent Scenery Unfolds,” \textit{Maui News}, 22 December 1926.  
\footnote{120}“County Builds Kuliwa Bridge at Low Cost,” \textit{Maui News}, 12 November 1927.  
\footnote{121}HDOT Bridge Inspection Reports; Lyman H. Bigelow, \textit{SPW Report}, 1929, 16-17; “Fong Bids Low on Hana Bridges,” \textit{Honolulu Advertiser}, 9 March 1947, 5; and “Three New Bridges on Maui Finished,” \textit{Honolulu Star-Bulletin}, 6 June 1948, 6.}
with visitors taking the steamer one way and motoring the other. A *Maui News* editorial heartily endorsed this idea, noting that the road was too taxing for tourists to drive both ways.\(^{122}\) No further mention of the steamer-auto tour was found. The HTB may have lost interest or lacked funds to enact its proposal. Perhaps it failed to convince the steamship company that the venture could be profitable.

Even before the road opened, a *Maui News* editorial had emphasized that Maui was not ready for visitors. Considering the islands' competitive nature, the columnist noted that Maui had more attractions and better accommodations than Kaua‘i, but Kaua‘i and Big Island roads were superior. The recently opened Ke‘anaae road was criticized for being rough, hard, and unpaved, as was the scenic belt route along West Maui's Lahaina Pali.\(^{123}\)

Another commentary endorsed tourism, but cautioned that Maui's advertising for the "soon-to-be-famous" Hāna road should be accurate. Although the byway was safe, not "makeshift," it counseled that drivers should be warned not to expect to motor over a smooth boulevard, rather a roadway that had been "put through." Much remained to be done to bring the road up to the standards expected by the average traveler: widening, straightening, improving grades, and surfacing.\(^{124}\) The editor took a common-sense approach to road construction, advising that improving existing byways ought to take precedence over new construction.\(^{125}\)

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\(^{122}\) "Tourist Bureau Works For Maui," *Maui News*, 29 December 1926; and "Excursions to Hana," editorial, *Maui News*, 29 December 1926. The Hāna Belt Road was not entirely paved until the 1960s.


It is difficult to assess the early success of the Hāna scenic road; tourist statistics on road usage do not exist.\textsuperscript{126} The Hāna byway, despite Maui leaders' lofty goals, was virtually ignored in the popular press of the day. Thrum's \textit{Hawaiian Annual} noted the road's completion to Ke'anae, but not to Hāna.\textsuperscript{127} \textit{Paradise of the Pacific} was one of the few periodicals aimed at tourists that announced the Ke'anae byway's opening. It failed to promote the completed route the following year, even though its Ke'anae article promised that the Hāna road was "to be made a feature for visiting tourists."\textsuperscript{128} Although the \textit{Mid Pacific Magazine} published extensively about the ditch trail, it apparently wrote nothing about the auto route to Hāna, despite its publisher, Alexander Hume Ford, being a staunch supporter of motoring in Hawai'i, as chapter six will show.

In 1925 the HTB's George Armitage noted the increasing importance of Hawai'i's "Tourist Crop;" his article did not mention the roads they drove.\textsuperscript{129} In extolling the islands' wonderful motoring opportunities for the \textit{Pacific Northwest} magazine, he recommended that tourists drive as much as possible to fully appreciate Hawai'i's beauty. The islands were becoming a well-known "motoring ground," according to Armitage. He advised touring along West Maui's "cliff road," but said nothing of the new road to Hāna.\textsuperscript{130}

Aside from the \textit{Maui News}, the \textit{Paradise of the Pacific} and Townsend Griffis's 1930 guidebook provided rare descriptions of the early motor road, but

\textsuperscript{126} Former Hawai'i state statistician Robert C. Schmitt compiled extensive reference guides to Hawai'i's statistics and published numerous articles gleaned from his experience and personal interest. None of Schmitt's materials provide the type of information that would highlight tourist usage of roads. The Hawaii Visitor and Convention Bureau claims that no such historic records were maintained.

\textsuperscript{127} "Retrospect for the year 1925," \textit{Hawaiian Annual}, 1926, 121.

\textsuperscript{128} J. H. Gray, "Maui Builds Scenic Driveway," \textit{Paradise of the Pacific}, December 1920, 119-120.


\textsuperscript{130} George T. Armitage, "Motoring in Hawaii," \textit{Pacific Northwest}, [February 1929], 28-29, photocopied article in the University of Hawai'i-Mānoa, Hamilton Library. The date for this article was noted in the library catalog record, not on the photocopy.
no indications of its popularity. *Paradise of the Pacific* emphasized that the dirt track was not a “good” road, yet it was a feat of engineering that appeared to hang on the mountainside. A thirty-mile-per-hour “clip” was not viewed as slow, nor a handicap, since it allowed motorists time to absorb the spectacular scenery.\(^{131}\) Griffis revealed that the Hāna drive was a trip that would not soon be forgotten, with “thrill upon thrill of inspiring scenery . . . around which we turn[ed] and twist[ed] in an heroic effort to live, so that we may look back upon the experience.”\(^{132}\)

Despite extensive searches, the only mention of the route and sightseers’ use of it was Sydney Clark’s 1939 travel guide, which remarked that the byway had attained well-deserved popularity and was a Maui tour “specialty.” Clark’s description, however, indicated that the road was not luring tourists from around the world. He observed that Hāna received a “daily quota of tourists,” but hardly any were *haole*. These excursionists were likely from elsewhere in Hawai‘i. According to Clark, tourism was hampered because the village had no restaurant (visitors brought picnic lunches) and only a “Japanese hotel of a sort,” where an adventurous traveler would be rewarded with a “most unhackneyed Maui holiday.”\(^{133}\)

The road, in Clark’s opinion, had two negative consequences. Despite providing access, the “corkscrew” nature of the byway prevented resort development. In addition, carloads of tourists impaired the “virgin quality” of Hawaiian life that visitors came to experience. Clark seemed to want it both ways: fine meals and accommodations in Hāna, which was a “natural” for

"hordes of tourists," but preservation of Ke‘anae as a Hawaiian settlement.\textsuperscript{134}

Hāna, a multi-cultural plantation community, apparently did not meet Clark’s expectations of a Hawaiian hamlet and could therefore be developed.

\textit{Maui’s Formidable Civic Achievement}

The Hāna Belt Road was a impressive public works achievement for the County of Maui during an era when Maui, especially the Hāna coast, was quite isolated from the rest of the world. Building this road and more than seventy bridges required a substantial, long-term commitment in terms of finances, political and public involvement, and engineering expertise.\textsuperscript{135}

Records demonstrate that the Maui County government completed this project almost entirely on its own. The SPW reviewed and approved plans, as was required by law. The territory provided prison laborers, and facilitated loan approval and funding, which was then authorized by the president. The territory’s involvement was so limited that the road opening was not mentioned in the SPW or governor’s annual reports of 1925 and 1926.

The Hāna Belt Road was a testament to Maui leaders’ extremely determined attitude during the early twentieth century. The \textit{Maui News} congratulated the "dreamers" who achieved a road that pessimists had claimed was impossible.\textsuperscript{136} Maui leaders proved Governor Pinkham wrong when they pushed a road through the wilderness, despite his assertions that their plans were beyond the territory’s or county’s means. At a time when Maui’s population was about 38,000 residents, most of which were agricultural laborers,

\textsuperscript{134} Clark, \textit{Hawaii}, 227-230.
\textsuperscript{135} For more information about the bridges along the road, see Dawn Duensing, “Hāna Belt Road, National Register of Historic Places Nomination Form,” U.S. National Park Service, U.S. Department of the Interior, 2001.
\textsuperscript{136} "Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading To Hana," \textit{Maui News}, 22 December 1926.
a $692,000 commitment for a byway through a sparsely inhabited rain forest was an enormous financial undertaking. Bond records indicated that Maui County borrowed more than $388,000 for Hāna Belt Road construction between 1922 and 1925; this total did not include many of the numerous bridges that had also been built over the years.¹³⁷ Over the course of sixteen years, Maui leaders spent $1.5 million on the island’s belt-road system.¹³⁸ Calculated for inflation, the 2010 cost amounted to the equivalent of $18,511,779.¹³⁹

William Pogue and Samuel Kalama were the driving forces that pushed the project through to completion. Many other civic-minded individuals lent support, including Maui Chamber of Commerce and BOS members, as well as Governor Farrington. Loyal Republicans, Pogue and Kalama were both well-known community leaders and between them, chaired the Maui BOS for nearly the entire duration of the Hāna Belt Road campaign and construction. Kalama headed the BOS for twenty years.¹⁴⁰ They served during a critical period in Maui’s history, when county government was in its infancy and responsible for building roads, schools, and other public infrastructure. These political leaders


¹⁴⁰ Pogue chaired the BOS from 1908 to 1912, as well as the Maui Loan Fund Commission from 1911. He also served in the territorial legislature. A missionary descendent, Pogue was well connected in Maui’s haole elite and heavily involved in agriculture, including the East Maui Irrigation Company, which was (and still is) located along the Hāna Coast (George F. Nellist, ed., *Men of Hawaii*, vol. 1 [Honolulu: Honolulu Star-Bulletin, Ltd., 1917], 213-214). Samuel Kalama served as a territorial legislator, then as BOS chairman from 1913 to 1933, chairing it throughout his tenure (“Samuel E. Kalama Answers Call,” and “Veteran County Chief Led An Active Life: Was Legislator Many Years,” *Maui News*, 28 February 1933). Although Pogue’s name is not commonly known on Maui in 2011, Kalama was a popular politician and is remembered with a Maui school and beach named for him.
Successfully assembled the necessities to build the road: financing, prison labor (to minimize costs), and capable engineers.

The Hāna road and its reinforced-concrete bridges were a remarkable engineering feat for the early twentieth century. As SPW Holloway emphasized in 1905, road construction in the Hāna District was through “very rough country.”\textsuperscript{141} The project challenged engineers, who had to determine a feasible alignment through rugged terrain. Miles of road had to be blasted from the mountainsides and numerous bridges erected to carry the byway across streams and gulches. Access was often a problem; materials were delivered by pack animals on horse trails and sometimes to the nearest beach and then hauled up the cliffs and valleys to the construction site. Efforts to build and then maintain the road were complicated by heavy vegetation, torrential rains, floods, and landslides.

Despite Maui’s remoteness the engineering talent that designed and supervised construction was remarkable for any small community during that era. Hugh Howell had a civil engineering degree from the University of California, came to Hawai‘i in 1894, and surveyed the road as early as 1897.\textsuperscript{142} He was Maui’s first County Engineer in 1906 and also worked for the MLFC. Howell designed several bridges along the Hāna road and enjoyed a very successful career in Hawai‘i.\textsuperscript{143} Another mainland transplant, Charles Bailey,

\begin{footnotesize}
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\item\textsuperscript{141} Holloway, \textit{SPW Report}, 1905, "Road and Bridges," 6-7.
\item\textsuperscript{142} J.H. Boyd to Hugh Howell, 9 November 1897, Interior Department, Book 89, HSA.
\item\textsuperscript{143} George Nellist, \textit{Men of Hawaii}, vol. 2 (Honolulu: Honolulu Star-Bulletin, Ltd., 1921), 211; and "Hugh Howell Passes Away On Molokai," \textit{Maui News}, 20 March 1946. Howell was perhaps better known for his later engineering success on Moloka‘i, where he was instrumental in designing and building that island’s irrigation projects. He also served as a civil engineer with the Hawaiian Homes Commission.
\end{enumerate}
\end{footnotesize}
supposedly the territory’s best bridge builder, had a civil engineering degree from the University of Vermont.\textsuperscript{144} Perhaps more impressive than these mainlanders were the two Honolulu-born engineers involved in the Hāna construction from 1923 to 1926. A. P. “Paul” Low and A. H. Wong were both of Chinese ancestry. Each attained something which, at that time, was probably achieved primarily by Hawai’i’s haole: a university education. There is evidence of a successful Chinese merchant class in Hawai’i during the early 1900s, although no studies appear to have been conducted regarding the higher education of Hawai’i residents.\textsuperscript{145} In 1940 only 9.3 percent of the population over twenty-five years of age had one or more years of university education.\textsuperscript{146} It is likely that most Hawai’i families could only dream of sending their children to a mainland university prior to the Second World War and the G.I. bill. It is unknown what Low’s and Wong’s parents did for a living, but in any case, their education seems unusual.

Paul Low received his civil engineering degree from Stanford in 1914. He served as Maui County Engineer from 1918 to 1928, when he became the first Chinese-American elected to the territorial senate. Wong succeeded Low as county engineer; he earned a civil engineering degree with honors at Purdue


\textsuperscript{145} A search of the Hawai’i Pacific Journal Index at the University of Hawai’i-Mānoa library provides periodical titles that demonstrate there was an established Chinese merchant class in Hawai’i during the early 1900s. These families may have had the resources to provide a university education for their children. The biographical guides, \textit{Men of Hawaii}, also included some entries of notable Chinese; most were merchants, but at least one was a lawyer and another an architect (Men of Hawaii: A Biographical Reference Library, Complete and Authentic, of the Men of Note and Substantial Achievement in the Hawaiian Islands, vol. 1-2, ed. by J. W. Siddall [Honolulu: Honolulu Star-Bulletin, Ltd. ], 1917, 1921).

\textsuperscript{146} Schmitt, \textit{Historical Statistics}, 208, 227. Schmitt also noted that the University of Hawai’i-Mānoa was founded as the College of Agriculture and Mechanical Arts in 1907 and became the University of Hawaii in 1920. Kuykendall and Day observed that about one third of the student population was Caucasian circa 1948, with the remainder representing Hawai’i’s various other ethnic groups, including the “A.J.A.s”—Americans of Japanese Ancestry—who were “crowding the classrooms” (Kuykendall and Day, \textit{Hawaii: A History}, 246-247). They did note that the rising enrollment was a result of the Servicemen’s Readjustment Act of 1944, the “G.I. Bill.”


The talent of this engineering team was exhibited not just in building the road, but also in the more than seventy concrete bridges built on the East Maui coast, including those constructed beyond Hāna towards Kīpahulu. Little information is available about when the stretch of road beyond Hāna was improved for automobile travel, but its concrete bridges were built by the MLFC and BOS.
The majority of the bridges built along the East Maui coast were simple in design and built using the technology typical of the era. Most were of concrete-deck girder and flat-slab construction, which came into widespread use during the early 1900s when America's highways were being improved to accommodate the automobile.\textsuperscript{151} Maui engineers recognized that these bridges were both economical and strong over short spans. Considered individually, most of the Hāna Belt Road's small bridges are unremarkable. Viewed as a collection, however, the simple bridges present a pleasing overall appearance. The parapets (bridge walls) were modest in design, but stylistically consistent, with either solid concrete walls or balustrades. (Photographs 9-14)

The Hāna coast's five reinforced-concrete arch bridges demonstrated that Maui engineers understood sophisticated technology and the appropriate location to use it. In 1916 engineer J. A. L. Waddell explained that concrete-arch structures were "eminently proper and economical" for deep gorges with rocky cliffs that could be used as natural abutments.\textsuperscript{152} On the Hāna Belt Road, these structures were used to dramatic scenic effect to span gorges at Wailua Nui, Koukou'ai and 'Ohe'o. The Hāna District's bridges demonstrated that Maui, despite its geographic isolation, was keeping up with the U.S. in terms of its use of modern technology. Maui engineers furthermore displayed their fine aesthetic sensibilities. Similar structures were erected on the U.S. mainland, including several on the scenic Columbia River Highway. (Photographs 15-16)

\textsuperscript{151} Robert McCullough, \textit{Crossings: A History of Vermont Bridges} (Barre, Vt.: Vermont Historical Society and Vermont Agency of Transportation, 2005), 200-203.

\textsuperscript{152} J. A. L. Waddell, \textit{Bridge Engineering} (New York: John Wiley and Sons, Inc., 1916), 618.
The majority of bridges constructed on the Hāna Belt Road featured two styles of parapet construction. About half the structures were built with a reinforced-concrete parapet of simple vertical concrete balusters and a square concrete rail cap. (Photographs by author.)
Photograph 11: Honolewa (South Wailua) Bridge, Hāna Belt Road.

Photograph 12: Waiohue Bridge, Hāna Belt Road. The other predominant style along the road featured a solid-paneled, reinforced-concrete parapet with a peaked concrete rail cap. Some of the solid walls also included dates of construction. (Photographs by author.)
Photograph 13: Pu‘uhoao Bridge, Hāna Belt Road.

Photograph 14: Waiokamilo Bridge, Hāna Belt Road.
A handful of the Hāna bridge parapets were unique, as these photographs depict, but still fit elegantly within the overall stylistic theme. (Pu‘uhoao photograph by author; Waiokamilo photograph by Jet Lowe, HAER HI-75-81, Courtesy Library of Congress.)
The design of the Wailua Nui Bridge (photograph 8) is strikingly similar to the Benson Falls Footbridge, built in 1912 on the Columbia River Highway in Oregon. Other bridges, though, were more contemporaneous with the Benson bridge. Koukou'ai Bridge, built in 1911, was the first reinforced-concrete arch bridge built in the Hāna area. The 'Ohe'o Bridge was erected in 1916. These bridges demonstrate that Hawai'i was constructing reinforced-concrete arch bridges as early as jurisdictions on the U.S. mainland. Maui County employed cutting-edge technology in building the barrel-arch 'Ohe'o Bridge. Maui engineers also proved that they were as aesthetically aware as the U.S. engineers who were designing some of the most renowned scenic roads and bridges in the nation. The Columbia River Highway's nearby automobile bridge was also a concrete-arch structure, as were the bridges at Eagle Creek and Sheppard's Dell. ('Ohe'o Bridge photograph by author. Benson Footbridge photograph by Brian Grogan, HAER OR-36-1, courtesy of the Library of Congress.)

The Road's Impact on the Local Community

Despite the claim that the Hāna road was a colonial project of extraction and pacification that helped erode Hawaiian sovereignty, some of the most important figures involved with this road were Hawaiians. Hawaiian politician Sam Kalama's enduring dedication ensured the completion of Maui's long-awaited road to Hāna. In contrast, the other case studies presented in this thesis were primarily influenced by the haole elite.
A *Maui News* editorial eulogized Kalama as a splendid representative of the "Hawaiian race" and one of the last in the line of "full-blooded Hawaiians" who had helped shape Hawai‘i’s political destiny. Kalama was vigorously involved in territorial politics for thirty years and considered one of the most influential Republicans on Maui. Hawaiian Republicans like Kalama were also well connected with the *haole* elite. Kalama’s ties were not limited to politics; he sometimes played polo with the “Baldwin boys” (Maui’s most prominent family). His determination and deep personal interest was crucial in bringing the Hāna Belt Road to successful completion. The *Maui News* credited Kalama for being “essentially a builder;” his priorities were roads and schools.\(^{153}\)

It is not clear what the *Maui News* editorial meant by its comment about Kalama being among the last of his kind. Kalama likely belonged to the generation of Hawaiian politicians that native Hawaiian historian Davianna McGregor discussed in her remarks regarding Kalaniana‘ole. McGregor noted that this generation of Hawaiian politicians maintained an adversarial and competitive relationship with the *haole* elite. Kalama certainly seemed to fit within this category: he ruled the Maui BOS for twenty years and pushed the road through to Hāna. McGregor observed that the passing of these men left a vacuum in the Hawaiian leadership. The next generation of Hawaiians who assumed political office in the 1930s were educated within the American school system and assimilated themselves to American values. They, unlike Kalaniana‘ole, and Kalama, would usher in a new period of cooperation and collaboration with the *haole* elite.\(^{154}\)

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In addition to Kalama, two notable contractors that worked on the road were part-Hawaiian, including Johnny Wilson, whose influence has already been discussed. Moses Akiona, who erected Wailua Nui Bridge, was born in Ke‘anae to a Chinese merchant and his Hawaiian wife. He established Moses Akiona Ltd. in 1920 and built many public projects, including part of O‘ahu’s H-1 freeway in the 1960s. Labor records apparently do not exist for the Hāna projects, but Hawaiians certainly would have been employed. The one fatality discovered, and there may have been others, was a twenty-five-year-old Hawaiian, Kaonohi Kaiwi. The road’s many masonry retaining walls, bridge abutments and other structures were probably built by Hawaiians and/or Japanese.

The opening of the Hāna Belt Road in 1926 was a transportation milestone with a tremendous impact on East Maui’s social history. The road ended Hāna’s isolation from the rest of Maui. It eliminated residents’ reliance on the weekly steamer for their transportation and communication needs to the outside world. With the new road, the trip between Hāna and central Maui could be made overland on the freedom of one’s own schedule rather than by the timetable of a steamer or guided horse trip. Instead of a round-trip journey of a week, travel time was reduced to 3.5 hours one way. People on both ends of the road could meet each other socially or for business with relative ease.

Tourists, too, had the freedom to travel as they pleased.\textsuperscript{157}


\textsuperscript{156} "Belt Road Worker Killed in Blast," \textit{Maui News}, 29 May 1926.

Maui’s Haleakalā Highway opened in 1935 using the advertising slogan “bringing the world to Maui.” Haleakalā Highway, like the Hāna Belt Road, was a great technical and civic achievement for a small island community in the midst of the Pacific Ocean. Haleakalā Highway, however, had little short-term social impact other than providing jobs during the Depression; it simply allowed drivers to access a magnificent natural attraction. The Hāna Belt Road, though, had immediate and substantial social consequences as it ended coastal communities’ centuries of isolation. Whereas Haleakalā Highway would bring the world to Maui, the opening of a road through windward Maui’s rugged and wet northeast coast was a “two-way street” that introduced Hāna to the world while also allowing the world to access Hāna.

The Hāna Belt Road helped open East Maui to settlement. The extent of economic (i.e., agricultural) development predicted by early Maui News editorials never happened, although homes and small farms were eventually built along the route. Agriculture was important, but in the long term, was overshadowed by the success of tourism, which developed beyond the wildest dreams of the road’s original promoters.

Pinkham was correct in his predictions that the returns from Maui’s scenic roads would not be immediately realized. Despite his assertions, by 1930 (perhaps earlier), tourism had been established and was being touted as Hawai‘i’s “third industry.” This observation reflected positively on Maui’s scenic “commercial” roads, which received another boost when Haleakalā Highway opened in 1935. These two roads were Maui’s crowning

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achievements in twentieth-century transportation projects and helped pave the way for tourism by the late twentieth century.

The following two chapters examine how Hawaii National Park roads were also prompted by local initiative. In these case studies, the resources of the federal government, together with the design and engineering philosophies of the National Park Service and Bureau of Public Roads, dominated the planning and construction of the roads, which were built to harmonize with nature. The HNP road system was unique in the territory, displaying the finest landscape design and engineering standards in the islands.
Chapter 5

NPS Roads on Hawai‘i, Laying Lightly on the Land

Hawaii National Park (HNP) was established by Congress in 1916 to protect the outstanding natural features of the Kīlauea and Mauna Loa volcanoes on the island of Hawai‘i and Haleakalā Crater on Maui. Kīlauea, one of the earth’s most active volcanoes, features dramatic landscapes and awe-inspiring spectacles of nature. Mauna Loa, an active shield volcano, rises to 13,677 feet above sea level and is the earth’s largest volcano. Occupying a volume of approximately 19,000 cubic miles, Mauna Loa measures 32,000 feet from its base on the ocean floor to its summit. HNP is located twenty-nine miles east of Hawai‘i island’s principal town of Hilo and ninety-six miles west of Kailua (Kona), the island’s main resort area. (Figure 7) Though located on another island, Haleakalā Crater, with one of the world’s largest volcanic craters, was included as the third section of HNP.

Hawaiians considered Halema‘uma‘u, which literally translates from their language as “fern house,” to be the home of the volcano goddess Pele, the creator and destroyer of land. Also known as the “fire pit,” Halema‘uma‘u is within Kīlauea Crater. As the purported home of Pele, the crater and its environs were sacred to Hawaiians. From the earliest days of tourist travel on the island of Hawai‘i, Halema‘uma‘u was also the premier attraction at Kīlauea.

This chapter examines the road system in the Kīlauea section of Hawaii National Park (HNP), which reflected the landscape architecture ideals established by the National Park Service (NPS) during the early twentieth century. Before the Second World War HNP’s primary roads were Crater Rim Drive and the first Chain
of Craters Road. Both roads were designed to lie lightly on the land and present landscape features that had been admired by tourists since the early nineteenth century. Early roads to the volcano were initiated by the local government and private entrepreneurs to promote tourism. After active administration of HNP commenced in 1922, park service officials assumed the lead role in developing a road system that fulfilled the NPS mission of providing access to park attractions. HNP thoroughfares were developed through the inter-agency cooperation of the NPS and BPR, which combined the landscape preservation ethic of the NPS with the BPR's technical standards to design modern roads that blended with the natural environment. The completed road system reflected general trends found throughout the national park system, but it was also subject to Hawai‘i's unique geological and climatic conditions, which continually challenged park service officials.¹

¹ The Hawaii National Park road system includes primary and secondary thoroughfares. The Hawai‘i Belt Road (Māmalahoa Highway) is part of this system and passes through the park, connecting it to Hilo and Kailua. This serves as the “approach” road as well as the main artery to other roads in the park. The primary park roads are Crater Rim Drive and the Chain of Craters Road. After World War II, Chain of Craters Road was extended to the village of Kalapana, thus providing a “loop” back to Hilo. The park’s secondary roads are the Hilina Pali and Mauna Loa “truck trails,” which were originally built for administrative and protection purposes. For a more comprehensive history of the HNP road system, see Dawn E. Duensing, "Hawaii Volcano National Park Roads," Volcano Vicinity, Hawaii, HI, HAER HI 47, National Park Service, Historic American Engineering Record, (Washington D.C., 1999), TS, at the Library of Congress.
Figure 7: The “Big Island” of Hawai’i.
Early Routes and Travel to the Volcano

Hawaii's volcanoes have long attracted visitors with their striking scenery and romantic allure. In August 1823, English missionary William Ellis was the first non-Hawaiian to document his journey to Kilauea, writing that the volcano, "until visited by us, [was] unknown to the civilized parts of the world." Ellis' response to the landscape was typical of the Romantic Era. His description of the journey exemplified the contemporary tendency to seek out spectacular scenery and interpret natural features as manifestations of the picturesque and the sublime.

Ellis and several American missionaries journeyed around the Big Island to survey the "religious state of the inhabitants." Governor Kuakini provided a guide named Makoa, who had served as the king's messenger for many years. Part of the party traveled on foot from Kailua traversing native forests, rough lava fields, deep chasms, and a sandy desert that Ellis described as "extremely fatiguing." Conditions near the volcano were scorching hot, with the sun beating down on the sand and lava fields. As the party approached the volcano, the smell of sulphur became noticeable.

Arriving at Kilauea, Ellis described the crater rim region as "a great precipice, with a vast plain... fifteen or sixteen miles in circumference, and sunk from 200 to 400 feet below its original level." The sojourners descended to the edge of the pit to view the lava lake, which roared from the volcanic crater like a vast furnace. Contemplating the scene, Ellis was filled with wonder at the "overwhelming manifestation of the dread Being who created the world" and would someday

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2 William Ellis, Narrative of a Tour through Hawaii, or, Owhyhee; with Observations on the Natural History of the Sandwich Islands, and Remarks on the Manners, Customs, Traditions, and Language of the Inhabitants, 2d ed. enl. (London: H. Fisher, Son, and P. Jackson, 1827), 249.
3 Ellis, Narrative of a Tour through Hawaii, 100, 219-221.
destroy it by fire. The party explored nearby areas and returned to view the volcano at night, describing the spectacle as “a sight terrible and sublime beyond all we had yet seen.” They watched the volcano shoot up fountains of fire, making very loud detonations as it ejected bright, ignited stones.\(^4\)

Ellis expounded upon the Hawaiians’ respect for Pele and her power. Kuakini had commanded Makoa not to visit the volcano. The Hawaiians who did go became increasingly agitated by the foreigners’ disregard of their customs near Pele’s abode. Ellis and others ate ‘ōhelo berries, but the Hawaiians would not until they reached the volcano and offered ‘ōhelo to Pele first. When the foreigners poked into the earth to examine sand samples, the indigenes feared that disturbing the ground so near the volcano would result in an eruption or some other form of Pele’s wrath. Ellis noted that for Hawaiians, Pele’s awesome power was evident everywhere; the landscape served as a constant reminder. As a Christian missionary, he was disturbed by these religious traditions.\(^5\)

By the 1820s explorers were traveling to Kīlauea from Hilo, which had become the island’s main port and thus established the primary route to the volcano. Queen Ka‘ahumanu assigned a “great number” of kānaka to guide, carry provisions, and erect huts as overnight accommodations for Lord Byron’s party of eleven, which quickly attracted over 150 followers. Byron’s naturalist, Andrew Blookam, observed that Hawaiians usually traveled up to ten miles a day at a slow pace and stopped where convenient to build temporary shelter. The kānaka

\(^4\) Ellis, *Narrative of a Tour through Hawaii*, 226-228.

complained about the lengthy daily distances covered by foreigners, nevertheless they seemed accustomed to the journey’s hardships and to “mind it but little.”

Bloxam noted that the path was good in some places, but in others, to “describe the roughness and badness of the road [was] impossible, it far exceeded all the previous descriptions.” The track was narrow; choked with saturated vegetation; and punctuated by chasms and sharp, projecting pieces of lava that were difficult to see. The lava cut through the travelers’ shoes and destroyed the Hawaiians’ stout grass sandals. At Kilauea, Bloxam found it impossible to describe the scene, but emphasized that it exceeded expectations, “no one but a person who has seen it could imagine it to be such as it is.” The party camped on the crater’s edge, the next day leading themselves to the volcano, as the fearful Hawaiians refused to go. The party returned to Hilo via the same route, but much the worse for wear, with scarcely a shoe to tread on and feet full of bruises and blisters.

In 1845 Steen Bille described road improvements between Hilo and the volcano. In some areas, conditions remained “abominably poor,” mostly due to the deep holes caused by the “eternal” rain, which buried horses in mud up to their bellies. The government had built a type of corduroy road through the forest, which Bille described as “paradise.” The roadbed was constructed of transversal fern trunks held together by stones along the path’s perimeter. Bille noted plans to extend this “wood paving,” but in the meantime, his party set out across the old “road,” a ribbon of black lava through the grass as far as the eye could see. Bille

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was probably the first traveler to identify Kilauea as an underutilized resource, presumably for tourists, and he recommended building a good thoroughfare to connect it to Hilo. This corduroy road, a nineteenth-century alternative to stone, indicates the early application of imported pavement technology to Hawai‘i.

By the 1860s, Hawai‘i’s volcanoes had become an established tourist destination, with Hilo the main approach route. In 1865, traffic was substantial enough that the thatch-roofed “Volcano House” hotel, located on the crater rim, began keeping a guest book. In the early 1870s, several guests noted that travel time was seven hours from Hilo, although bad weather or other obstacles could make the trip longer. The jaunt could still be a challenge, as Sidney Sweet noted in 1880, when the typically heavy rains stretched his journey to nearly eleven hours. The difficult expedition left him badly demoralized. He recounted that rain “fell in torrents so great” that “the road was completely submerged for miles.”

Despite such adversity, visitors rarely left disappointed. Many praised the comfortable accommodations and excellent service afforded by the hotel operators, as well as the spectacular show that the volcano often provided. During his fifth visit to Kilauea in 1874, F. A. Schaefer noted that the surrounding countryside

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10 “Corduroy” was a popular nineteenth-century pavement in places where wood was plentiful, such as in North America (M.G. Lay, Ways of the World [New Brunswick: Rutgers University Press, 1992], 206-207). Hawaiians may have built a type of wood road, as a legend noted that Menehune built a road of sticks through Kauai’s Alaka‘i Swamp (William Hyde Rice, Hawaiian Legends, Bulletin No. 3 [Honolulu: Bernice P. Bishop Museum, 1923], 46). The Menehune were a legendary race of small people who built public works projects at night.

11 Darcy Bevens, ed., On the Rim of Kilauea: Excerpts from the Volcano House Register, 1865–1955 (Hawaii National Park, Hawaii: Hawaii Natural History Association, 1992), 6, 9, 16. Bevens noted that the Volcano House Hotel has been “perched” on the rim of Kilauea Crater since the mid-1800s. The original building was a grass hut, which was eventually replaced by the second Volcano House in 1866 (”The Volcano House,” Hawaii Nature Notes, [November 1953]).

proved "sufficiently interesting to induce daily excursions on tolerably good roads."

He intended to stay at Volcano House for eight days and was surprised that even
with the fine hotel, most excursionists stayed only a day or two.\textsuperscript{13} Schaefer's
experiences sharply contrasted with those of Yosemite visitors, where historian
Stanford Demars revealed that the road and accommodations were consistently
bad, causing some travelers to regret the trip and expense. Even picturesque
Yosemite could not compensate for their hardships.\textsuperscript{14}

The demonstrated interest in tourist travel to the volcano prompted more
commercial development. In 1885 Wilder's Steamship Company announced its
new route to the volcano. The company built Keauhou Landing on the coast
approximately ten miles south of Kīlauea, as well as a bridle path to convey tourists
from the landing to Volcano House. Wilder's offered a fifty dollar round-trip
expedition from Honolulu on its steamer \textit{Kīnau}, which included Volcano House
accommodation and a day of sightseeing. It advertised the new approach as "only
fourteen miles from the steamer to the Volcano, over a good road," and
emphasized that the bridle path was "less than half the distance of any other
route."\textsuperscript{15}

\textsuperscript{13} Volcano House register entry of F. A. Shaefer, 29 August 1874, and others, in Bevens,\textit{On the Rim of Kīlauea}, 16-17.
\textsuperscript{14} Stanford Demars, \textit{The Tourist in Yosemite} (Salt Lake City: University of Utah Press, 1991), 45-47.
\textsuperscript{15} Wilder's Steamship Company advertisement, \textit{Honolulu Pacific Commercial Advertiser}, 16
June 1885, hereinafter cited as PCA. Most of the newspaper articles cited in this chapter were in
the "Newspaper Clippings Binder" in the Hawai'i Volcanoes National Park library. Some of these
clippings were missing dates, the newspaper name, or headline. Brackets have been used to
indicate the missing items.

This collection of photocopied news stories consisted of articles from the \textit{Pacific Commercial Advertiser}, founded 1856 in Honolulu, which became the \textit{Honolulu Advertiser} in 1921. Photocopied articles from the Hilo newspapers were also in this binder. The \textit{Hilo Tribune-Herald} was founded in 1895 and the \textit{Hawaii Herald} in 1896 (Helen Geracimos Chapin, \textit{Shaping History} [Honolulu: University of Hawaii Press, 1996], 53, 116). Later mergers and name changes resulted in the \textit{Hilo Daily Post-Herald} and the \textit{Hilo Daily Tribune}. 250
The Keauhou route was touted as a great improvement over the difficult road from Hilo, which one sojourner described as eight-to-ten hours of the "hardest possible kind of travel." A Honolulu newspaper claimed that Wilder's trail passed through "charming country" and could be easily traveled on horseback in two to three hours. The first part of the trip was a challenge, as passengers had to ride from the coast up the steep pali. A two-seat horse cart transported tourists over the upper portion of the road to Volcano House, which had been acquired by Wilder's.  

Tourists were apparently pleased with the arrangements. Extolling his experience in the hotel's guest register, J. B. McC Chesney of California observed:

Nearly all the way a well graded road runs through a tropical forest, the beauties and rarities of which are a source of constant surprise and enjoyment. In fact the three or four hours occupied in the ride is only too brief for the pleasure offered, and we arrive at the Volcano House, not jaded and worn as is too often the case in seeking the rare and wonderful in nature, but actually refreshed by the ride. With the present arrangements for transporting passengers from the landing to the volcano no one need hesitate about undertaking the journey.  

Another California visitor asserted that the last eight miles of the road were as good as, if not superior to, some roads in Honolulu. In 1886 Wilder's began transporting tourists by carriage for ten miles, leaving only four miles by horseback. 

\[18\] Volcano House register entries of 'Geo.' Bixby, 28 September 1887, and N. H. Davis, 18 February 1887, in Bevens, On the Rim of Kilauea, 61-62.  
By 1888, there was a third way to the volcano, a carriage road constructed by Peter Lee, the proprietor of several nearby hotels. Lee's byway approached from Pāhala, approximately twenty miles west of Kīlauea. That year, H. S. Tregloan claimed that he was the first visitor to travel by means of a wheeled conveyance the entire way from an ocean port to the volcano. He described Lee's new road as:

A fine one, over which the carriage rolled with the greatest ease. The going was good, the grade low, and the landscapes grand. Failing to get an even grade by the zigzag course always thought necessary for that route, Mr. Lee had struck a line directly across the five miles of rugged lava. To effect this bold plan he had to do a good deal of rock cutting, filling in the frequent depressions with fine pumice stone from ancient eruptions. The result is an even thoroughfare of about twenty-five feet in width, as safe and easy for a carriage as the road through Kapiolani Park [in Honolulu].

A Honolulu newspaper praised Lee for his enterprise, pointing out that he constructed the road on his own initiative with no promise of public compensation. Although Lee built the road to increase the patronage at his Punalu‘u hotel, the newspaper maintained that the public also benefitted from his enterprise.

In 1888 the Pacific Commercial Advertiser (PCA) reviewed the roads to the volcano in an article titled "What They Are and What They Should Be." The Peter Lee Road was obviously what the newspaper believed a road should be; it had nothing but praise for the twenty-mile thoroughfare. Although Tregloan claimed the byway was twenty-five feet wide, the paper reported it as ten-to-twelve feet wide, with an easy grade and no steep hills or gulches. The PCA denounced the old route as one of the "worst roads assigned to pleasure-seekers," a "tedious old trail"

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21 "Great Consummation," [PCA?], 7 November 1888.
that traversed the lava fields. Furthermore, the newspaper disparaged Hawaiians who used it, deriding them as the “savages of a century ago, who cared little whether they progressed more or less than one mile a day.”

The PCA continued to explain what a road should not be, criticizing the government road as a “rough bridle path” that took five to six hours in good weather and up to ten hours in the typically rainy weather. As with the Pali Road, newspapers did not hesitate to condemn the Hawaiian government for its transportation failures. Lee’s surveying skills and building techniques were cast as a substantial improvement over the government’s. His route was recognized as a more pleasant excursion than the hot jaunt over the lava. The newspaper bragged that a loaded brake drawn by one horse could travel the Peter Lee Road in just over three hours, with the horse arriving at the end of its journey just as fresh as it had started.

Despite the newspaper’s criticism, the government appropriated $30,000 to reconstruct the road from Hilo. Minister of the Interior Lorrin Thurston recognized that if the volcano, the nation’s “great wonder,” was “brought within easy communication it might be turned into a mine of wealth.” As with the Punchbowl carriage drive, Thurston believed that a good road to Kilauea would increase tourism. He understood that good roads were a business opportunity that would repay the costs of construction. In 1890, Volcano Road was the kingdom’s biggest

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22 “The Approaches to the Volcano. What They Are and What They Should Be,” PCA, 7 November 1888.
23 “The Approaches to the Volcano,” PCA, 7 November 1888; and untitled, PCA, 11 December 1888. In 1894 the Minister of the Interior reported that the government road from Pāhala to Volcano had been “practically abandoned” for a number of years. Travelers were instead using the Peter Lee Road, which was purchased by and turned over to the Hawaiian Legislature in 1892. By the time the Peter Lee Road became a government road, it required significant repair (James A. King, Minister of the Interior, Report, 1894, 131-132).
24 “The Approaches to the Volcano,” PCA, 7 November 1888.
public works project.\textsuperscript{25} By then, tourists traveled from Hilo for two hours by stage, then four-and-a-half hours by horse or mule. The experience was pleasant when the weather was fine, but one Canadian visitor noted that the Volcano Road could not be completed too soon "for the good of the country." As Darcy Bevens explained in her compilation of entries from the Volcano House register, "As more roads were built, expanded, and improved, visitors were delighted, but also wished for further improvements."\textsuperscript{26}

Work on the government road from Hilo continued in the early 1890s, usually with prison labor. Nearly twenty-two miles were completed by 1892, leaving less than ten miles of horseback riding.\textsuperscript{27} In 1894, S. E. Bishop advised that the new Hilo byway was "excellent." An anonymous hotel register entry noted that the carriage road from Hilo to Volcano House was completed in September 1894. By this time, the environs were being referred to as "Volcano."\textsuperscript{28}

The Inter-Island Steam Navigation Company (IISNC) controlled the Keauhou Route in 1897 and considered whether to improve it, since the road from Hilo had been modernized. The company wanted a road in "fit condition" for carriages or stages and believed that the existing trail was useless, as tourists still had to ride up the pali on horseback, then board a carriage for the remaining journey to Volcano House. The IISNC wanted to transport passengers by carriage the entire length of the route. Without a carriageway, Keauhou Landing was considered worthless. The Keauhou Route was still the shortest route from the

\textsuperscript{25} Lorrin A. Thurston, Minister of the Interior, \textit{Report}, 1890, 208-209, 262.
\textsuperscript{26} Bevens, \textit{On the Rim of Kilauea}, including the Volcano House register entry of "V.M.,” 14–16 August 1891, 62-65.
\textsuperscript{27} Volcano House register entry of "Wm." N. Bruner, 14–16 August 1891, in Bevens, \textit{On the Rim of Kilauea}, 63; and C. N. Spencer, Minister of the Interior, \textit{Report}, 1892, 283.
\textsuperscript{28} Bevens, \textit{On the Rim of Kilauea}, including Volcano House register entry of S. E. Bishop, 28 August 1894, 62-65.
coast to the volcano, so the company investigated whether a road could be cut through the steep *pali* at a reasonable cost.²⁹ Two months later, it dropped plans to improve the trail, and the Keauouh route was abandoned.³⁰ The new carriage road from Hilo had rendered Keauhou Road obsolete, thus confirming the role that good roads played in conveying tourists to scenic attractions.

The government road was suitable for carriage traffic, but a new factor soon entered the equation, initiating another round of complaints, and eventually leading to demands for more improvements. After making the first automobile trip from Hilo to Volcano House in July 1902, an A. James noted that the journey had taken three hours “over some of the worst roads possible to find anywhere.” James blamed the bad conditions on the Territory of Hawaii legislature.³¹

Although the first automobile trip had been accomplished, motorcars did not immediately replace the stage. Sometime before 1905, the Hilo Railroad Company began transporting passengers from Hilo to Glenwood, where they boarded a stage to Volcano. Volcano House visitor Chase Osborn of Michigan described his journey of twenty-two miles by rail and nine miles by stage: “The rail ride was through an attractive country forming a panorama of sugar plantations and fields of bananas and coffee. But the particularly enchanting ride was that by stage over a very good basaltic mountain road, walled with tropical vegetation.”³²

Many travelers still complained about the trip, one claiming that the area roads “would make a better sea bottom than anything else.” H. C. Bruns grumbled

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²⁹ “Keauhou Route. Inter-Island Company Considering New Volcano Road,” *PCA*, 16 January 1897; and “New Road to Kilauea,” *PCA*, 28 January 1897.
³⁰ Untitled, *PCA*, 18 March 1897. Remnants of the old Keauhou Road still exist and are used by backcountry hikers. The Keauhou Landing area is a backcountry campsite.
about his stage ride, claiming that it felt like he had traveled “one thousand and two miles instead of nine miles” by the time he reached Volcano House. He noted that his journey was not conducive to acceptable Christian behavior, but instead produced the opposite effect. Bruns confessed, “What little chance I did have for a harp and a crown in the hereafter is surely lost to me now, owing to the method by which I silently expressed my feelings during that stage ride.”

Despite the grumbling, many travelers were thrilled with their Volcano experience, often praising the accommodations and steamer service. Several repeat visitors noticed great road improvements. Mrs. Phillips had first come by horseback in 1872. In 1909 after traveling by train most of the way, she exclaimed, “What a change! . . . What comforts now, compared with the simple necessities of those days.” E. A. Mott-Smith and his wife had taken the stage all the way from Hilo in 1896. In 1909, they traveled by train to Glenwood, pleased that the agony of a stage trip had been reduced by 72 percent.

Motoring to the Volcano and Reaching Halema‘uma‘u

Having improved the roads to Volcano, better access to the crater itself was necessary. Nineteenth-century sightseers traveled from Volcano House to Kilauea Crater by horseback or on foot. In 1907, Acting Territorial Governor Jack Atkinson suggested building an automobile road to Halema‘uma‘u Crater. He recommended that the road enter Kilauea Crater where the cliffs were low and suggested that prison labor do the work. Atkinson wanted a road that enabled older people to

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33 Volcano House register entry of Cephus B. McCallum, 24 April 1918; and H. C. Bruns, 3 June 1909, in Bevens, On the Rim of Kilauea, 69.
34 Volcano House register entry of Mrs. L. H. Phillips, 27 January 1909; and E. A. Mott-Smith, 27 October 1909, in Bevens, On the Rim of Kilauea, 70.
have an easier, more comfortable journey. He furthermore emphasized that better access would make the volcanic spectacle a regular trip rather than a once-in-a-lifetime experience.³⁵ Atkinson asked the County of Hawaii Board of Supervisors to cooperate, which it did, because supervisors believed the road would be an incentive for more people to visit their island.³⁶

Atkinson suggested a route that approached the crater from the west. Within a month, however, an auto road based on the existing track along the crater’s east rim, which followed the Hawaiians’ old Hilo-Ka’ū trail, was proposed since it had a better grade. The road would be extended to the opposite side of the crater, just as Atkinson intended. The east route’s disadvantage was that it traversed private land owned by the Bishop Estate.³⁷ Governor Frear endorsed the crater road project, believing that it would benefit both the territory and county. He preferred the east route, discerning that it “would seem to be of easier construction and, having the craters of Kīlåuea Iki and Keanakåko’i along the way, would add to the interest of the route.”³⁸

With political support guaranteed, engineer Charles Smith surveyed the predecessor road of Crater Rim Drive. Smith located both routes, working in rain, fog, and “other difficulties.”³⁹ He reported that the line from the east by way of Kīlåuea Iki was “incomparably better both from a scenic and an engineering standpoint.” As to the scenery, Smith asserted that there was “nothing to compare with it in the islands.” The Hawaiians’ old trail line was chosen, and Bishop Estate

³⁵ “Automobile Road to the Crater’s Edge,” [PCA?], 28 July 1907.
³⁶ “Atkinson Road to Halemaumau,” PCA, 16 August 1907.
³⁷ “Change of Plan For Crater Road,” PCA, 27 August 1907.
³⁸ “Proposed Road into Kīlåuea,” PCA, 7 September 1907.
³⁹ Volcano House register entry of C. H. Smith, 3 October 1907, in Bevens, On the Rim of Kīlåuea, 68.
trustees granted a right-of-way. The PCA declared that the new road would be infinitely easier than the old horseback/foot path, since it would allow visitors to “ride right to the brink of Halemaumau in a buggy or automobile or any other kind of conveyance.”

In 1907 Smith led a party over his surveyed route, which they “formally christened” Halema‘uma‘u Road. He claimed it would be the most scenic byway in the Territory of Hawaii. Roadside views were “indescribable” and engagingly diverse: lush forests of ‘ōhi‘a and towering tree ferns as high as thirty feet gave way to desolate volcanic craters, with glimpses of the sea attractively interspersed. Smith’s alignment began at Volcano House and traversed the edge of the “extinct” crater of Kīlauea Iki, then passed through the fern forest to Kīlauea Crater. One-half mile further, Keanakāko‘i Crater was visible. From there, the route curved with easy grades to the south side of Halema‘uma‘u; then visitors walked ten minutes to the edge of the pit.

Convict labor built the Atkinson Road in 1907. High Sheriff William Henry reported the new road “getting along splendidly,” noting that the prisoners made no trouble, as only those with the best records were chosen, and they appreciated the change. Smith similarly observed the prisoners’ work was “going merrily on” and suggested that they came to Volcano to “improve their health and enjoy the climate found here, and incidentally to build the Halemaumau Road.” Although progress was satisfactory, the sheriff pleaded with the Board of Supervisors to provide

40 “Atkinson Road to Halemaumau,” PCA, 17 September 1907.
41 “Enthusiast Describes the Atkinson Road,” PCA, 23 September 1907. Most of this article was Charles Smith’s observations on his survey for the proposed road. He, his wife, and other Big Island residents had traveled over the route. The ‘ōhi‘a is a native tree that grows abundantly in wet areas (Pukui and Elbert, Hawaiian Dictionary, 277-278).
42 “Volcano Road Progressing,” [PCA, 21 January 1908].
43 Volcano House register entry of C. H. Smith, 3 October 1907, in Bevens, On the Rim of Kīlauea, 68.
transportation for the prisoners, as they were losing nearly two hours a day walking to and from the worksite. As construction progressed, this problem would only worsen. Sheriff Henry argued that the faster the work was completed, the sooner steamer travel would increase to Hilo, since visitors would want to take advantage of the easy access to the volcano.\textsuperscript{44}

The \textit{Sunday Advertiser} jokingly referred to the project as the "Road to Hell," but the "Jack Atkinson" (Halema'uma'u) Road was cast as having tremendous importance in terms of attracting more visitors to Volcano and thereby boosting local tourism. The newspaper praised Atkinson as one of the road's primary supporters and for securing convict labor. Volcano House proprietor George Lycurgus was commended for providing workers with transportation as well as housing in one of the "prettiest spots" along the road. By January 1910, six of the seven miles to the crater were completed. Construction of this section through the fern forest had been relatively easy, the paper noted, but the balance of the work was expected to be slow because the trail had to be cut through lava.\textsuperscript{45}

The route's technical appeal was in its careful avoidance of sharp curves and steep grades. The average grade was 3 percent, with maximum grades of 6 percent. The road was sixteen-feet wide, which allowed for carriages to pass without pulling over. Reflecting the automobile's growing influence, the reporter noted that the grades along the first six miles could easily be taken in high gear. Four-foot walls constructed of lava rock were strategically placed at dangerous

\textsuperscript{44} "The Crater Road," \textit{PCA}, 30 March 1908.
points so motorists could make the entire trip "with a feeling of perfect safety." 46

These design techniques were similar to those that would later feature prominently in the road system design by the National Park Service.

Halema'uma'u Road was completed in 1910. 47 (Figure 8) Visitors appreciated the scenic route through the fern forest and its easy access to Halema'uma'u's "lake of fire." In 1911, Philip Henry Dodge jotted his thoughts on the road in the Volcano House register:

When twenty years ago, through toil and flood
We reached the crater's glare
How little did we dream that large-eyed
Motor cars would rush and stare! 48

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46 "Enthusiast Describes the Atkinson Road," PCA, 23 September 1907; "Better Material than Good Intentions," Honolulu Sunday Advertiser, 16 January 1910; and "New Carriage Road to Kilauea Crater," [PCA?], 28 October 1907.
47 Untitled, PCA, 1 December 1910.
**NPS Development Philosophy**

When Congress created the National Park Service in 1916, it charged the agency with the dual mission of preserving the parks' natural resources and providing access to these assets. Naturalistic landscape design was used to fulfill this mandate. Historian Linda McClelland observed that it was already clear when the service was organized that a “well-rooted philosophy existed that called for development, whatever its function, to be suited to its particular site and to the natural character of the surroundings.” Historian Ethan Carr noted that designed landscapes served to guide the visitor experience and enhance their appreciation of the “vast wilderness beyond.”

Both McClellan and Carr explained that early NPS development projects were influenced by the nineteenth-century principles of naturalistic gardening and rustic architecture popularized by Andrew Jackson Downing, Frederick Law Olmsted, and others. Henry Hubbard, Frank Waugh, and other landscape theorists who emphasized native vegetation and naturalistic gardening practices also influenced park design. In 1918, a National Park Service policy statement declared that improvements would be guided by two principles, harmony with nature and landscape preservation. From 1918 until 1933, Park Service landscape architects and engineers shaped a “cohesive style of naturalistic park design” that

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established the uniform character and appearance of America's national parks, including HNP.⁵₀

Roads were an essential component in fulfilling the service's duty of providing access. Thoroughfares, Carr observed, were designed to lead motorists to specific areas and through a "considered sequence of views."⁵¹ Park roads required careful planning in order to balance a manmade intrusion with the nature it impacted. During the early 1900s NPS landscape engineers developed road-building policies that aimed to preserve the natural environment, provide access to scenery, and harmonize the road with its setting. The result was roads that lay lightly on the land by following nature's contours and highlighting scenic vistas along the way.

Landscape historian Timothy Davis noted that the NPS-BPR collaboration produced a distinctive "park road" aesthetic. The designers drew heavily on nineteenth-century carriage road composition techniques, but updated the practices to suit automobile traffic and the geographic diversity of the individual parks. Among the practices they implemented were alignments that were subtly configured to showcase park landscapes in the most attractive and engaging manner, while also including a variety of scenery to keep motorists interested. They arranged safe turnouts at particularly scenic locations, conducted tree-trimming to present carefully calculated vistas, and built narrow roads to offer close-up views of nature. Hazardous hairpin curves were eliminated, but park roads were more winding than conventional roads, as sinuous curves were an attractive feature. Curvilinear byways that followed the contours of the land were

⁵₀ McClelland, Presenting Nature, 1-3, 75, 80-81. Carr's Wilderness by Design discusses the precedents for U.S. national park landscape design in chapters one and two.
⁵¹ Carr, Wilderness by Design, 1.
preferred, as these avoided ugly and expensive excavations. Where such cuts were unavoidable, park road builders minimized construction disturbances and restored the affected area to its original appearance.⁵²

The NPS implemented many of these road-building policies by means of a 1926 memorandum of agreement with the U.S. Bureau of Public Roads (BPR). Under this arrangement, park superintendents and NPS landscape architects were responsible for road construction. They determined the character of park roads based on their assessment of landscape features. Initial investigations of proposed byways were conducted in consultation with BPR engineers. The BPR was then responsible for surveying potential routes and determining contract specifications. The BPR work was reviewed by the landscape architects and park superintendents to assure that the proposed projects would meet strict NPS guidelines for landscape preservation and aesthetics. All proposals were approved by the NPS’s San Francisco landscape division. The BPR managed construction, with park superintendents retaining the ultimate decision-making authority. This NPS-BPR collaboration ensured that park roads reflected state-of-the-art engineering and modern standards, while also protecting the landscape. Furthermore, it made it possible to standardize roads throughout the national park system. The 1926 agreement provided the framework for decades of cooperation between the two agencies, including the design and construction of Hawai‘i’s Chain

of Craters Road, Crater Rim Drive, the Mauna Loa Truck Trail, and Haleakalā Highway.⁵³

Hawaii National Park’s Early Years

Although established as a national park in 1916, Hawaii National Park (HNP) was not dedicated until 1921. In 1920, Horace Albright, Field Assistant to the Director of the National Park Service, visited Hawai‘i to inspect HNP and to study “tourist possibilities” throughout the islands. Albright’s primary goal was to facilitate land acquisition and to prioritize the ensuing development opportunities. At the time, more than half the land within the area designated as HNP remained privately owned.⁵⁴

Albright noted that the park had sixteen miles of roads, including the seven-mile Halema‘uma‘u Road. The remaining mileage included the “cross-park” (government belt) road. Albright praised Hawai‘i’s people for constructing a “very good highway” from Hilo to the park without “a cent of federal money.” He consequently recommended (as Hawai‘i officials had done for years) that Hawai‘i be allowed to participate in the federal aid for roads program so it could complete the approach road to “Volcano.”⁵⁵

Albright’s observations responded to National Park Service Director Stephen Mather’s foremost concern during the NPS’s early years: accessibility. Mather wanted to encourage automobile travel and believed the U.S. government

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⁵³ Carr, Wilderness by Design, 98, 174-175.
⁵⁴ Horace Albright, Field Assistant to the Director, National Park Service, “Annual Report,” 1920, TS, pamphlet no. 114 in the Hawai‘i Volcanoes National Park library, Volcano, Hawai‘i, 2, 4. Albright later became director of the National Park Service. HNP was designated the same year that Congress established the National Park Service to manage the nation’s national parks. Yellowstone was the first national park, set aside by Congress in 1872.
was obligated to build park road systems. Mather recognized that attracting visitors to the parks was essential to establish a constituency and support for the new national park system, which would influence Congress to adequately fund the parks. Roads and automobiles were necessary to achieve this goal.\(^{56}\)

Acquiring private land was the key to HNP development. Albright emphasized that once land was obtained, the NPS could appropriate money to protect the park and build roads, trails, camps, and other visitor amenities. Of immediate importance, the NPS wanted the land along the main approach road from Hilo in order to protect the forest. Albright worried that the Bishop Estate would sell this land for summer homes, which was contrary to NPS values as it would ruin the highway’s "sylvan beauty."\(^{57}\)

Characterizing Halema’uma’u as the "most awe-inspiring thing" he had ever witnessed, Albright vigorously supported improvements for HNP, a "great national resort area" without peer in the world. He asserted that Halema’uma’u was the National Park Service’s "most wonderful feature;" it surpassed Yosemite’s waterfalls, Yellowstone’s geysers, and Sequoia’s big trees. HNP’s other attractions

\(^{56}\) McClelland, *Presenting Nature*, 73; Carr, *Wilderness by Design*, 148; and David B. Louter, "Windshield Wilderness: The Automobile and the Meaning of the National Parks in Washington," (Ph.D. diss., University of Washington, 2000), 35-36. National parks had been set aside by Congress before the NPS was established in 1916. Alfred Runte noted that prior to the NPS, preservationists recognized that to assure the survival of national parks they needed to encourage tourism. Visitors would provide a reason, "economic development," to justify the parks’ existence. In other words, Congress and others were not satisfied with setting aside land for the sake of preserving a view. Runte maintained that the first parks were not established for wilderness conservation, but instead to preserve scenic views that would instill an American cultural identity  

\(^{57}\) Albright, "Annual Report," 9-10. Albright also recommended that other privately held properties be acquired for HNP, including the land that Volcano House was built upon, a portion of Halema’uma’u Crater, Thurston Lava Tube, as well as fine specimens of forests, all of which were, at that time, owned by the Bishop Estate.
were also impressive: steaming and "dead" craters; great forests of tree ferns, ʻōhiʻa and koa; the "Seven Craters;" and Bird Park's tree molds.  

Historian Alfred Runte emphasized that the early impetus for scenic preservation and establishing national parks was part of America's search for a "distinct national identity." He described the practice of emphasizing America's natural wonders over those elsewhere (in Europe) as "scenic nationalism." Carr noted that magazines during the early years of the NPS publicized the parks with articles claiming that national parks "encouraged patriotism, national productivity, and public health." Albright's enthusiasm for Kilaeua reflected the commonly held opinion that Hawai'i's volcanoes were "safe" and accessible and should therefore be enjoyed by all. Moreover his emphasis on the park as a "unequaled" "national resort" seemed to display the desire to exploit America's scenic wonders for the sake of instilling patriotism and national identity. He recognized Kilaeua's potential and advocated taking whatever steps necessary to advance HNP, believing it would attract thousands of U.S. visitors.

Albright was not alone in these efforts, and the promotion of HNP had greater implications than patriotism. National parks may have been a tool to shape good U.S. citizens, but HNP's development was an opportunity to Americanize the

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58 Albright, "Annual Report," 6-7, 10. Koa is the largest of Hawai'i's native forest trees, with light-gray bark and crescent-shaped leaves (Pukui and Elbert, Hawaiian Dictionary, 156).
59 Runte, National Parks: The American Experience, xii, 20. Other historians have studied how tourism facilitated national identity. John Sears, Sacred Places: American Tourist Attractions in the Nineteenth Century (New York: Oxford University Press, 1989; reprint, Amherst: University of Massachusetts Press, 1998) examines how American tourists traveling in their own country developed an image of their land and thus forged a distinct American national identity. American scenery (like that in the national parks) played an important role. Marguerite Shaffer continues this theme, looking at tourism since 1880 and how America's national identity was further entrenched during the railroad and early automobile eras. She examined the "See America First" promotional campaign, which used patriotic rhetoric to encourage tourism in the spectacularly scenic U.S. west (Marguerite S. Shaffer, See America First: Tourism and National Identity, 1880-1940 [Washington D.C.: Smithsonian Institution Press, 2001]).
60 Carr, Wilderness by Design, 77.
residents of the relatively new U.S. territory, instill the American national identity, and integrate the Territory of Hawaii into the Union. Lorrin Thurston, who had worked so tenaciously to achieve Hawaii’s annexation to the U.S. was also the “father” of HNP. 62 Various articles in the *Mid Pacific Magazine*, which had always been a promotional tool of the *haole* elite, focused on the park as an American playground. Secretary of the Interior Franklin K. Lane invited the “American People” to become guests at “Uncle Sam’s” parks. Lane believed that a visit to HNP, the “Pacific Gateway to America,” would “make more hardy your affection and admiration for America.” Another account written by the secretary of the Hawaiian Volcano Research Association claimed that the park, only six days’ journey from the U.S. West Coast in 1927, was becoming “America’s greatest wonderland.” 63 Hawai‘i’s attractive scenic destinations were used to help Americanize the territory.

Active administration of HNP began in 1922 with Thomas Boles’ appointment as superintendent. 64 In one of his earliest monthly reports, Boles described tourist travel to the park, which was intermittent and entirely dependent on the twice-weekly steamer trips between Honolulu and Hilo. From Hilo, visitors

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62 Lorrin A. Thurston, “Hawaii’s New National Parks, *Mid Pacific Magazine*, October 1919, 343; and “A Biographical Sketch of Lorrin A. Thurston’s Career,” *Mid Pacific Magazine*, July 1931, 25-26. Thurston no doubt promoted HNP in his newspaper, but also wrote a number of articles for the *Mid Pacific Magazine*, see especially, “The Proposed Hawaiian National Park,” March 1911, 303-332; and “The Story of a Volcano,” January 1921, 17-32. Historian Christine Skwiot maintained that all Thurston’s activities worked for annexation (and thus Americanization). He seemed to be involved in nearly anything that promoted Hawai‘i and worked to secure its annexation, including the Hawaii Bureau of Information and ownership in the hotel at Volcano at one point (Christine M. Skwiot, “Itineraries of Empire: The Uses of U.S. Tourism in Cuba and Hawai‘i, 1898–1959,” [Ph.D. diss., Rutgers, the State University of New Jersey, 2002], 3).


64 Nash Castro, “Important and Interesting Dates (1778-1953), The Land of Pele,” timelines compiled by the former Assistant Superintendent at Hawaii Volcanoes National Park, [1959], TS, Pamphlet no. 52 in the Hawaii Volcanoes National Park library, 2.
traveled to Glenwood by train, where most of them joined organized automobile
tours. Individual motorists at this time were the exception to the rule. Boles
described the typical visit:

Three auto lines, operating heavy cars, handle the visitors from Hilo
to the Park and return, over the 30 mile highway. All boats reach Hilo
at 8 AM and the tourists take a six hour ride along the east coast of
the Island over the Railroad, and then drive to the Park, reaching
here about 5 PM. The volcano is first visited after supper, and again
by daylight next morning; other nearby points of interest are then
visited, and the return trip is made just after dinner, reaching Hilo in
time for the 4PM departure of the boats. 65

Boles reported on improvements to the approach road from Hilo, including
eleven miles of “first class” reinforced concrete pavement. 66 During the 1920s,
Hawai’i County extended the concrete pavement as funds became available. By
1923, twelve miles of road were finished, and a contract had been awarded to build
another four miles. Reinforced concrete pavement was relatively advanced
technology at that time. Boles commented that it was “a far higher type of roadway
[than] the immediate or future traffic warrants.” 67 In 1926, the Hilo Railroad
Company discontinued service to Glenwood; thereafter visitors traveled to Volcano
entirely by road. 68

In 1923, Mather complained that the national parks’ most urgent need was
new roads. Appropriations lagged behind projected needs in most national parks,

65 Boles, “Superintendent’s Monthly Report,” April 1922. All the “Superintendent’s Monthly
Reports” were typescript and are available in the Hawai’i Volcanoes National Park library.
to concrete highway development during the “boom years,” noting that by 1914 concrete highway
paving was making “substantial headway.” Its momentum was slowed by restrictions during the
First World War, but by the time the war ended, highway builders had begun to realize the benefits
of concrete.
68 Castro, “Important and Interesting Dates,” 2.
including HNP.\textsuperscript{69} Funding any improvements during the park’s early years was difficult. In 1924 road equipment consisted of two wheelbarrows, some picks, and shovels. Other apparatus was rented or borrowed, and difficult to obtain. When money was available, Hawaii County road crews were sometimes hired to complete projects.\textsuperscript{70} In light of the budget situation, Boles was forced to maintain and extend existing roads, primarily Halema’uma’u (also called “Crater”) Road, rather than build new thoroughfares.

Despite the budgetary constraints, Boles worked diligently to improve visitor access, while observing NPS design policy. The superintendent was dedicated to making HNP as popular as Yosemite or Yellowstone National Parks. To foster this goal, an abandoned wagon road around Waldron’s Ledge was improved to provide access to impressive views of Kilauea Crater from the top of a 600-foot cliff. In accordance with park service goals of providing scenic vistas, viewpoints were also constructed along the road. Recognizing that elderly visitors had trouble walking the existing half-mile path to view the lava, Boles hired county crews to build a temporary, 1,800-foot long road across the crater to a parking area about 150 feet from the fire pit’s south rim. Scenic overlooks were also built on the Kilauea and Kilauea Iki crater rims. Road safety was improved by reducing and widening sharp curves and building “parapets of lava” as guardwalls.\textsuperscript{71}

Boles highlighted the construction challenges encountered near the volcano, where lava tubes hid underground caverns and earthquakes frequently altered the landscape:


\textsuperscript{70} Boles, “Superintendent’s Monthly Report,” March 1924.

This side of the crater seems firm, and I do not think we will lose any of the road, or be endangered by further widening of the crater. [7]he county was dubious about allowing their roller to work on this road on account of the possibility of the lava crust breaking, but I have 'sounded' all the road and have sledged down the weak places, and have tested the entire road and parking space with a loaded truck giving a total weigh of seven tons, insuring the safety of auto traffic.72

A 1924 eruption underscored Boles' concerns by obliterating one-half mile of the road. Crews rebuilt the parking lot and trail 1,000 feet from the crater's new edge. Boles remarked that the menace created by "skiddy ashes" deposited on the road was a hazard more dangerous than the eruption.73

Although Halema'uma'u was the park's most popular destination, Crater Road's "fern jungle" also captured the imagination. The thoroughfare passed through a graceful arch of tree ferns thirty feet high, with fronds as long as twenty-five feet. As part of his effort to make HNP as popular as Yosemite, Boles sent photographs of this tunnel-like scenic drive to Mather, requesting that he use his influence to have them placed in the Saturday Evening Post. Carr remarked that Mather frequently employed his public relations skills and press connections to publicize America's national parks.74

Other low-cost improvements included grading the Mauna Loa trail to carry light auto traffic as far as Bird Park. A ten-acre campsite was built above Byron Ledge on the crater's east rim to encourage auto tourism. In 1927 the short

72 Boles, "Superintendent's Monthly Report," April 1922, May 1922. Boles did not explain the "temporary" nature of the new road. Since the road was located so close to the crater, one might deduce that Boles expected that a permanent or expensive road might be damaged or destroyed by earthquakes or volcanic eruptions.

73 Boles, "Superintendent's Annual Report," 1924, TS, Hawai'i Volcanoes National Park library. All of the annual reports are typescripts; some were filed with the "Superintendent's Monthly Reports" in the park library.

74 Boles, "Superintendent's Annual Report," 1922 and 1925; Boles to Stephen Mather, attached to "Superintendent's Annual Report," 1925; and Carr, Wilderness by Design, 77. Period photographs showing a very narrow track covered by an arch of tree ferns confirm how spectacular this drive was. Today's wide road and cleared shoulders do not provide the same intimate view and tunnel effect of the early twentieth-century fern forest drive.
Sulphur Banks road was built along Kīlauea's north rim (in the opposite direction from Volcano House) to provide easier accessibility to this natural feature where gases and steam seeped from the ground and stained the landscape.  

![Map of Kīlauea Crater](image)

Figure 9: Hawaii National Park Roads, 1931.

**Engineering a Road System**

Inter-agency collaboration between the BPR and HNP began in 1925 when BPR engineer Frank Kittredge investigated the park's proposed road system, which was presumably devised by Boles. Kittredge had extensive experience in building park byways and was considered one of the of BPR's best locating engineers. His report analyzed seven proposed thoroughfares to help determine how to budget HNP's $250,000 road allocation. Kittredge reviewed possible routes

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for all three sections of HNP, including Haleakalā Highway on Maui. Byways studied for the Kīlauea section of the park included Halema'uma'u Road, Chain of Craters Road, and Bird Park Road, which was part of the Mauna Loa Trail and connected the Kīlauea and Mauna Loa sections of HNP. Kittredge also studied the portion of the Hilo approach road that traversed the park. Finally, he analyzed a Mauna Loa Summit Road and Red Hill Road.77

Kittredge’s report demonstrated the level of NPS-BPR cooperation that was formalized through the 1926 agreement. As the BPR engineer, he investigated and laid out the potential routes, prepared cost estimates, and offered recommendations regarding construction issues, including engineering standards and available materials. He staked the proposed byways, which allowed Boles and other NPS personnel to examine and comment on the engineering work. His plans and specifications were submitted to the NPS’s San Francisco office for review and approval. The park superintendent made the final decisions on HNP’s proposed road system.

Kittredge’s report acknowledged the other issues that impacted HNP engineering surveys. Citing a letter from botanist E. Finch, Kittredge recognized the need to protect the rare birds and trees of “Kipuka Puaulu” (Bird Park) and emphasized that it was “unwise” to traverse this fragile area with a road. He also acknowledged scientists’ interest in transportation that would facilitate their work,

including suggestions from prominent vulcanologist Thomas Jaggar of the Hawaiian Volcano Observatory.\textsuperscript{78}

Kittredge concluded that HNP’s road priorities should be in the Kīlauea section, which “urgently” needed twenty-five miles of highway. He recommended building extended lengths of adequate rather than high-quality (paved) roads in order to make the greatest number of scenic features accessible to the public. Kittredge conceded that traffic censuses had not been conducted, but estimated that HNP roads only occasionally carried one hundred vehicles per day when larger ships brought tourists to Hilo. HNP officials agreed that the anticipated traffic numbers did not justify the expense of asphalt paving.\textsuperscript{79}

The final analysis of the proposed road system indicated that Boles and BPR officials were in “complete agreement” on the preferred projects and construction standards. They agreed that the Halema‘uma‘u Road improvements already executed by Boles were sufficient for the time being, with the thoroughfare in “travelable condition,” even though many curves remained “dangerously sharp.” Chain of Craters Road was considered a priority and recommended for “early construction.” Bird Park Road also took precedence, as it was needed to connect the Kīlauea and Mauna Loa sections of the park. The estimated cost of the HNP road system was over $1.7 million.\textsuperscript{80}

\textsuperscript{78} Kittredge, “Report on Hawaii National Park Road Program,” 8, 10b, 10c.
\textsuperscript{79} Kittredge, “Report on Hawaii National Park Road Program,” 11-12.
\textsuperscript{80} Kittredge, “Report on Hawaii National Park Road Program,” 2-3, 16-17.
A Sidetrack: What “Locals” Wanted

While HNP had settled on its road priorities, local park enthusiasts advocated their preferences. While they no doubt supported HNP’s decision to build the Chain of Craters and Bird Park roads, Hawai‘i leaders on the Big Island and in Honolulu also wanted the Mauna Loa Summit Road constructed, sooner rather than later.

Horace Albright had favored a road to Mauna Loa’s summit in 1920. It should come as no surprise that Thurston, too, was involved in this matter. He was an ardent supporter of the Hawaiian Volcano Observatory (HVO), which was established on the rim of Kīlauea in 1912 and headed by Jaggar. In 1921 Thurston began campaigning for the byway, emphasizing that this road would enhance tourist travel and “revolutionize” volcanic observations by providing access to Mauna Loa’s Moku‘āweoweo Caldera.

Superintendent Boles surveyed a possible route with Jaggar in early 1923, but with no road funds available, only a horse trail was built. Boles felt that this was adequate for the time being, noting that there was little tourist interest in the summit; the Kīlauea area remained the park’s premier attraction.

Several other issues impacted the proposed Mauna Loa Road. The first, as always, was money. The major hurdle, however, was insufficient land on which to

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build a byway. Kittredge surveyed the mountain and discovered an “indefinite number of possible routes,” but noted that it would be difficult to align a road within the existing park boundaries. The NPS therefore advised the territorial government to acquire the necessary property.\textsuperscript{84} Like the Hilo approach road to the park, there had to be sufficient land to protect the roadside’s natural environment and shield it from manmade intrusions that might arise from adjacent property owners. The NPS’s policy on an ample right-of-way was strictly non-negotiable. Congressmen who visited HNP in 1925 emphasized that they wanted a strip of land at least one mile wide on each side of the proposed road.\textsuperscript{85}

In late 1930 HNP Superintendent Allen reported that Thurston, publisher of the \textit{Honolulu Advertiser}, was “pushing Mauna Loa road propaganda.”\textsuperscript{86} The following year Governor Lawrence Judd asked the new superintendent, Ernest Leavitt, to start construction as soon as possible. Leavitt supported the project, believing that Mauna Loa’s summit had more scenic attractions than Kilauea, which at the time, was inactive and thus less interesting. He therefore recommended building the road.\textsuperscript{87} Despite Leavitt’s advocacy, the NPS was committed to constructing the Haleakalā summit road since the Maui section of HNP had no modern roadway to its impressive crater. The Great Depression had also begun, putting an additional strain on park funding.

The Haleakalā priority rekindled the competition between the islands, with Thurston’s son, Lorrin P., urging Big Island residents to lobby for the Mauna Loa

byway. Construction had not begun on either Mauna Loa or Haleakalā, and Thurston warned that if Haleakalā Highway was built first, Maui would use the road to draw tourists away from the Big Island. A month later, with the Great Depression becoming more serious, federal authorities ordered that no new road construction be initiated.88

Big Island boosters refused to relent, especially after NPS Director Albright announced National Recovery Act (NRA) money for park roads. Dr. Jaggar promoted the Mauna Loa byway in the Honolulu Advertiser. He asserted that an automobile road was important for scenic purposes, but moreover vital for its scientific value, which would make possible discoveries “such as the world has never dreamed of.”89

By the end of the year, Mauna Loa erupted and reinvigorated the demand for the summit road. Leavitt reported that agitation came from “throughout the territory.” Thomas Sakakihara of Hilo led the campaign with a resolution in the territorial legislature that called for the NRA to allot a million dollars for the road. Similar decrees were passed by the county government and other organizations.90 Jaggar predicted more eruptions and again urged the NPS to consider the road’s scientific and emergency value. He emphasized the great advantage such a road, even a “very rough one,” would provide to vulcanologists. Jaggar insisted that if enough “steam” was put into a campaign, eventually the money for a road would

88 Leavitt, “Superintendent’s Monthly Report,” February 1933, March 1933, and “Memorandum for the Press,” 15 March 1933, attached to “Superintendent’s Monthly Report,” March 1933. Lorrin A. Thurston died in May 1931, which was noted in the Superintendent’s Monthly Report for that month. Superintendent Leavitt, in this 1933 report, noted that Lorrin A. Thurston was speaking to community groups on the Big Island about the need to lobby for the Mauna Loa Road. He must have meant Lorrin P. Thurston, who carried on in his father’s footsteps both at the newspaper, in tourism promotion, and in other island affairs (Helen Chapin, Shaping History, 193, 222, 236).
become available. Despite Hawai‘i residents’ wishes, other park projects took precedence, namely Haleakalā Highway and the Uwēkahuna-Bird Park Road.

Even though efforts for the summit road failed, the creation of the New Deal’s Emergency Conservation Work (ECW) program in August 1935 provided the opportunity to construct an alternative “truck trail” on Mauna Loa. ECW funding was provided by Congress as unemployment relief. Kittredge’s 1925 investigations had suggested reducing expenses by building a lighter “auto trail” for Mauna Loa. Truck trails, too, were cheaper to build, but designed to be separate NPS road networks used for administrative and protection purposes rather than as tour routes for the motoring public. Superintendent Wingate emphasized the utilitarian nature of this truck trail, noting its importance for park patrols, fire protection in “heavy grass country,” and monitoring eruptions (Mauna Loa flows sometimes headed towards the population center of Hilo). HNP Associate Engineer A. H. Wong, who had worked on Maui’s Hāna Belt Road, prepared plans for the Mauna Loa track with NPS landscape architect Merel Sager and Superintendent Wingate. The truck trail began at the end of the Uwēkahuna-Bird Park Road and ran approximately ten miles to the 7,000-foot elevation of the 13,679-foot volcano. The dirt motor trail was only eight feet wide. (Photograph 17) Although it did not reach the summit, emergency response time would be substantially reduced. The existing horse trail necessitated long trips by park personnel when it was necessary to investigate the latest lava activity at

92 Kittredge, “Report on Hawaii National Park Road Program,” 17; McClelland, Presenting Nature, 105-106. HNP’s truck trails were Mauna Loa and Hilina Pali, which later became available for tourists as well.
Moku‘āweoweo Caldera. Even with the advantage of an army plane in 1935, it took fourteen hours for the pilot to be dispatched and report the direction of the latest lava flow. The Mauna Loa Truck Trail was built by Civilian Conservation Corps (CCC) enrollees and completed in 1936.

Photograph 17: Mauna Loa Truck Trail. This view along the Mauna Loa Truck Trail has changed little since it was bulldozed through the lava in the 1930s. The original track was dirt and several feet narrower than the current roadbed, which is seen here in 1999. (Jet Lowe, HAER HI-50-6. Courtesy of the Library of Congress.)

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95 Wingate, “Superintendent’s Annual Report,” 1937, 7. A road to Mauna Loa’s summit was never built. The Civilian Conservation Corps (CCC) was a work relief program instituted during the Great Depression. It ran from 1933 until 1942 and concentrated on conservation and natural resource projects throughout the United States, including the Territory of Hawaii. The CCC made a major contribution to conservation and construction programs in the national and state parks, with enrollees completing projects under the direction of qualified landscape architects (Carr, Wilderness by Design, especially 250-251; and McClellan, Presenting Nature, 200-202). Enrollees lived in camps in the parks or other areas where they worked and sent most of the money earned to their parents each month.
Connecting the Chain of Craters

In 1922 Superintendent Boles remarked that Halemaʻumaʻu was the park's premier attraction, but there were other promising scenic road possibilities. With only fourteen miles of good roads in HNP, Boles pointed out that tourists could see all its attractions in one day. Those staying longer left their automobiles and hiked the park's trails. He was convinced that the popularity of the "Six Crater Trail" made it imperative to construct a road into the area. This hiking track was a ten-mile loop that passed Thurston Lava Tube and ten steaming craters, seven of which were located along "Cockett's Trail." A month after Boles' report, Makaopuhi Crater erupted and drew more local visitors to the park. Situated near the end of the "chain of craters," Makaopuhi was seven miles from Crater Road and must have provided added justification for a new byway. (Figure 10)

![Diagram of Chain of Craters Road, 1928](image)

Figure 10: The Chain of Craters Road, 1928.

Boles increased his efforts to develop what he was calling the "Chain Crater" or "Pit Crater" Road during 1924 when Kilauea was inactive, and park visitors trekked to other calderas if they wanted to witness volcanic activity. Iterating that limited roads made it difficult for the park to offer attractions other than Kilauea, Boles argued that a road to the craters could be built quickly and cheaply. He was convinced that nothing would make HNP more popular among Hawai'i residents than a road through the crater district with its steaming pits and molten lava. Boles asserted that it would be in greater demand than the proposed Mauna Loa summit byway. The superintendent reported that even Thurston, who had traveled to Washington seeking $400,000 for the Mauna Loa road, conceded that a road through the "Pit Crater District" would be more popular.\(^\text{97}\)

Boles' emphasis on attracting residents was significant. He admitted giving "great weight" to the opinions of the influential Thurston and Jaggar, but also realized that he needed widespread support, since visitor numbers helped justify funding. Building a road to attract local motorists would create a broader constituency for HNP. Boles' roads and the Byron Ledge auto camp followed this policy. Boles was cognizant of the need to promote HNP. In 1923 he emphasized that "not over one out of five visitors to this area knows beforehand that this is a National Park." To correct this situation and introduce people to U.S. Department of the Interior, he had a traditional NPS rustic-style entrance arch built of *koa* logs to announce HNP and "invite the public to enjoy it as their own property."\(^\text{98}\) This project could also be considered as part of the efforts to instill patriotism and further integrate Hawai'i into the U.S.

Kittredge supported Boles' proposed "Chain of Craters Highway," agreeing that it would open a new area to tourists. He described the craters as "gigantic" holes as deep as 1,000 feet. Noting the vulcanologists' description of the area, he mentioned its educational potential, which was also part of the NPS mission. Kittredge furthermore pointed out that Hawai'i County intended to build a road along the Puna Coast that would eventually connect with this new HNP road and create a ninety-mile circuit route from Hilo, thus making even more scenery accessible. Circuit roads were classic features in NPS road systems. Loop roads helped facilitate and control the flow of traffic, but were also appealing to visitors, who would not have to backtrack along the same route.

From an engineering standpoint, Kittredge explained that the route's landscape was gently rolling lava fields covered by trees and brush. Its alignment was excellent for automobiles, with no sharp curves and a maximum grade of 6.5 percent. Kittredge concluded that drainage was not needed along the road (in contrast to Crater Road through the rain forest), since the area had "been shattered by volcanic and earthquake action to such an extent that it is rendered thoroughly porous." The proposed seven-mile road traversed from its intersection with Crater Road, approximately five miles west of park headquarters, to Makaopuhi Crater. Its estimated cost was $155,254, with a targeted completion date of May 1927.

Park employees completed preliminary work, including clearing and grubbing, in 1926. Construction officially commenced in April 1927. Richard Evans, the new superintendent, reported that the project was HNP's "outstanding

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development of the year.” The BPR engineer reported that the work was satisfactory, but observed that a shortage of laborers was slowing the progress. Three months later, the crew of eighty-five had only been increased by fifteen men.\textsuperscript{102}

No explanation was given for the inadequate manpower. One possibility was that the contractor did not anticipate needing extra laborers to handle construction difficulties, such as cutting the roadbed through a thick core of basalt near ‘Ālo‘i Crater. Work was also hampered by rainy weather, and the completion date was delayed several times. The road was finished in March 1928, and opened to the public a month later, with lower than expected attendance due to what NPS officials described as “garbled publicity.”\textsuperscript{103}

In addition to the easy curves and grades, Chain of Craters Road highlighted other NPS design practices, the most notable of which was achieved by means of Kittredge’s road alignment. One favored NPS design technique was to maintain motorists’ interest by presenting views on alternate sides of the roadway.\textsuperscript{104} Proceeding from Crater Road southward, the first four craters were viewed in an alternating sequence on the right and left sides of the byway. Presumably, the thoroughfare passed along the south side of the remaining craters due to the necessity of building the roadbed on stable land.

Another important NPS road design principle was the emphasis on making scenic vistas accessible. Overlooks were built at each crater to provide resting


\textsuperscript{103} Hilo (Hawaii) Tribune-Herald, 15 April 1928; and Evans, “Superintendent’s Monthly Report,” October 1927, March 1928, April 1928, September 1928. No information regarding a formal road dedication was located.

\textsuperscript{104} McClelland, \textit{Presenting Nature}, 106.
places, but also to afford visitors spectacular views of the huge volcanic pits. Evans commented that the “Guard walls of masonry at the rim of each of the seven craters supplement[ed] to a high degree the attraction of the road.” These crenellated lava-rock parapets complemented the natural surroundings and were common structures throughout the NPS. They were individually suited to each park by the use of native building materials, in HNP’s case, lava rock. Historic photographs depicted visitors enjoying views of the craters and adjacent scenery from the Chain of Craters Road overlooks.  

Clearing vegetation to improve or expose vistas was another important design and maintenance technique along the new byway. The first NPS landscape engineer, Charles Punchard, advocated this practice as early as 1919. During the 1950s, Superintendent Wosky noted that HNP’s routine maintenance included trimming or removing trees that blocked vistas at the overlooks.

As with many roads in wilderness areas, maintenance was a constant challenge. Before the road was finished, BPR engineers forewarned Superintendent Evans that the day after construction ended, maintenance would begin. Although Kittredge’s investigations claimed that road drainage would not be an issue, rain damaged the road considerably in 1931.

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107 Wosky, “Superintendent’s Monthly Report,” March 1956. While tree-trimming to preserve and expose vistas practice was standard throughout the park service, in 1999 when the author researched Chain of Craters Road, many of the craters along the road were so thickly overgrown that it was difficult to enjoy the designated views or even see the craters. With these craters obscured by trees, most of which were invasive species, motorists might wonder why the road was named “Chain of Craters.”
Chain of Craters Road was paved with asphal tic macadam in 1930–1931.\textsuperscript{110} Park crews nevertheless fought a constant battle with natural forces. In addition to rain damage, vegetation grew and broke the pavement.\textsuperscript{111} Earthquakes were a major factor in the thoroughfare’s rapid deterioration and a perennial problem throughout the park. Damage varied from minor cracks of a few inches to huge cracks several feet wide and hundreds of feet deep. In 1935, a thirty-foot crack in the ground near ‘Älo‘i Crater made the road collapse. To repair this, park crews excavated the damage, bridged the crack with a concrete slab that rested on solid rock, filled the crack, and resurfaced the road.\textsuperscript{112} This system of repairing earthquake crevasses occurred repeatedly over the years. Earthquakes also caused roads to “hump,” sometimes so severely that cars could not drive over the heaved pavement.\textsuperscript{113}

It was not always obvious when the road was undermined by earth movement. Once, a ranger drove over the road near Pauahi Crater and the pavement beneath his wheel collapsed into a hole.\textsuperscript{114} In 1938, earthquakes caused such extensive damage to Chain of Craters Road that it was closed between Makaopuhi and Pauahi Craters. Permanent repairs were postponed until the park could be reasonably certain that the earth movements had stopped. On 28 August 1938, 323 tremors were registered in HNP. Ground movement

\textsuperscript{110} U.S. Department of the Interior, National Park Service, “Plans for Proposed Project No. 4 (Grading and Surfacing) Route No. 4, Uwekahuna-Bird Park, Hawaii National Park, Territory of Hawaii, field copy, [1932],” Hawai‘i Volcanoes National Park, Maintenance Division files.


continued in 1939, and the park did not fix the road.\textsuperscript{115} The Civilian Conservation Corps (CCC) made temporary repairs in 1939, although for a two-mile stretch near Pauahi Crater, motorists had to "negotiate with care" as they passed numerous humps in the road.\textsuperscript{116}

Although the possibility of connecting Chain of Craters Road to a county road had been discussed during the earliest planning stages, the extension was deferred for decades while the county, territory, and NPS debated land and financing issues. The proposal would create a circuit route between Hilo and the national park via the coastal community of Kalapana (Figure 7), eliminating approximately forty-five miles of backtracking. The territorial and county governments considered the matter numerous times, but failed to appropriate adequate funding. One possibility was to use federal road aid, but disagreements ensued over whether the money should be spent for HNP-related roads or for belt-road bridges along the Big Island's rugged Hāmākua Coast. Local inaction prompted HNP officials to finally turn their attention elsewhere.\textsuperscript{117}

The issue was not solved prior to the war, but it is appropriate to examine it further as this was apparently the only time that Hawaiians (or anyone) protested HNP roads before 1941. Hawaiians were seldom mentioned in park documents, but the Chain of Craters-Kalapana Road was one byway that substantially impacted their community. Other land required for the park was controlled by haole.\textsuperscript{118} Kalapana, however, was another matter.

\textsuperscript{116} Wingate, "Superintendent's Annual Report," 1939.
\textsuperscript{117} For more about the issues and construction of the Chain of Craters-Kalapana road, see Dawn Duensing, "Hawaii Volcanoes National Park Road System, HAER No. HI-47," 71-90.
\textsuperscript{118} Other land needed for HNP was not owned by Hawaiians. For instance, in 1933 the Campbell Estate owned the land that included Thurston Lava Tube; the park also wanted parcels
When Wingate assumed duties as HNP superintendent in 1933, he supported the proposed Chain of Craters Road extension. He worried, however, that the easier access afforded by a modern road would make Kalapana vulnerable to economic exploitation. Wingate feared that the Hawaiians might suffer at the hands of developers, lose their land and lifestyle, and then be condemned to living in tenements. The road might tempt some community members to leave for opportunities in Hilo or elsewhere. Wingate’s concerns echoed Governor Farrington’s remarks when the Hāna Belt Road had opened. In order to prevent such a negative course of events, Wingate proposed that HNP be expanded to incorporate Kalapana. Although paternalistic, the superintendent believed this would allow the NPS to protect one of Hawai‘i’s last remaining traditional villages. U.S. Secretary of the Interior Harold Ickes endorsed the idea. Territorial Delegate Sam King submitted a bill to Congress, which approved the Kalapana extension in 1938.  

Wingate meant well and was supported by the county government, Chamber of Commerce, and other local civic organizations, however, some “Kalapana Hawaiians” vigorously protested the action. As a result, the territorial legislature halted its efforts to acquire land for HNP. Wingate indicated that at least some community members were willing to sell their land. The matter was suspended during the war; thereafter Hawaiians were galvanized by the expansion

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owned by the Shipman Estate, Kapapala Ranch, and the Hawaiian Agricultural Company ("Superintendent’s Monthly Reports," April and May 1933). At that time, NPS policy dictated that the federal government would not purchase land for parks, so instead, the Territory of Hawaii negotiated sales or land exchanges, then deeded the land over to HNP.

plans and fought the decision to build the road. Land condemnations ensued, resulting in a long-lasting distrust of the agency.\textsuperscript{120}

\textit{Constructing a Loop around the Crater}

In contrast to Chain of Craters Road, Crater Rim Drive was not originally included in the 1925 NPS-BPR road plans. The drive was instead developed by improving pre-existing byways and constructing new segments. The loop was eventually assembled from Halema'uma'u Road, which had been renamed "Crater" road at some point; a section of the belt road; and Uwēkahuna-Bird Park Road.\textsuperscript{121}

As discussed earlier, Superintendent Boles improved and upgraded Halema'uma'u Road and the Waldron Ledge Road during the park's early years. The BPR involvement with Crater Road began in 1925 when Kittredge analyzed HNP's proposed road system. Kittredge's report complimented Boles, who had recently spent $15,000 to "excellent advantage" in preparation for a U.S. Navy fleet visit. He concluded that Boles' efforts rendered the road sufficient for the time being, but pointed out that future work should eliminate excessive grades and a few "dangerously sharp" curves. In 1925 Boles also proposed expanding the

\textsuperscript{120} Wingate, "Superintendent's Annual Report," 1939. Chain of Craters-Kalapana Road was finally completed in 1965. Only two months before it opened, Makaopuhi Crater, at the end of the original Chain of Craters Road, erupted, providing an inauspicious omen of future events.

\textsuperscript{121} It is unclear when the Halema'uma'u Road became known as Crater Road; then when that became "Crater Rim Road." A July 1940 superintendent's report on road construction referred to "Crater Rim Road." It is unknown when "Crater Rim Drive" came into general use.
Halema‘uma‘u parking lot to accommodate 150 automobiles at HNP’s premier attraction.  

Natural phenomena were the driving force behind Crater Road work in 1929. Volcanic activity prompted another expansion of the Halema‘uma‘u parking lot, this time to hold 250 cars. The crater’s spectacular eruption drew huge crowds, so park crews cleared even more parking space, bringing Halema‘uma‘u’s capacity to 500. The eruption triggered record numbers of visitors, and local steamship companies ran extra boats. During a four-day period, 25,000 people came to the park. The heavy traffic ruined Crater Road’s dirt surface, forcing the park to conduct a “thorough overhaul.” The road was in “very good shape” four weeks later, but within months, heavy rains ruined it again. Seventy-four inches of rain were recorded that year, of which twenty fell in November. One day, seven inches of rain fell in only eight hours. Repairs for rainfall damage exhausted the park’s annual road-maintenance budget. 

In 1930–1931, the NPS and BPR reconstructed Crater Road. The six-mile road was graded, widened and surfaced with asphaltic macadam. Superintendent Leavitt recorded little about the design aspects of the road, but chronicled numerous problems with the contractor. Work was slow, but the major difficulty was that the company either did not understand NPS landscape preservation policies or did not want to abide by the rules. The contractor insisted

122 Kittredge, “Report on Hawaii National Park Road Program,” 2-3; and Hilo Daily Tribune, 4 February 1925.
on opening a new quarry rather than using the existing site, arguing that the new quarry had higher-quality rock. Leavitt refused the request because it would destroy plant life and damage scenic vistas. His action was consistent with NPS policy that scenery and landscape be preserved.\textsuperscript{126}

While Crater Road was being reconstructed, Leavitt contemplated another route that would open new scenery to park visitors. Although not part of the proposed road system in 1925, the NPS landscape division suggested building a 3.5-mile auto trail between the Halema‘uma‘u firepit and Uwēkahuna Bluff. Construction was quick (one week), easy, and cheap (only $500). This "auto trail" was simply a graded dirt track that was sufficient to drive a car over. Leavitt reported that thirty to forty visitors used the new thoroughfare each day, many of whom were soldiers who had been making a "somewhat dangerous" hike from the Kilauea Military Camp to Halema‘uma‘u via the Hawaiian Volcano Observatory. The new road was a bit longer than the old path, but it provided easier walking and afforded fine views, while also opening an interesting area of the park.\textsuperscript{127}

Anticipating that more motorists would drive the new byway, Leavitt realized that he needed to bring the auto trail up to standards. At this point, he formulated his idea for a loop road around the crater. The primary attraction of this configuration was that it would allow tourists to visit the crater without having to drive the same road twice. Leavitt also pointed out that when eruptions brought increased traffic to the park, the road could become one-way, which would increase safety, especially at night. The route was also more efficient for park and volcano observatory staff since it was a shorter distance to Halema‘uma‘u than the

Crater Road.\textsuperscript{128} Leavitt did not specifically mention the other compelling justification for loop road development at HNP, which was that it could provide an escape route should lava block the road and create an emergency.

Historic precedents for circuit roads emanated from nineteenth-century landscape parks and were extensively developed on various scales throughout the NPS. Carr noted that Olmsted’s 1865 plan for Yosemite included a one-way carriage loop road to connect “the finer points of view,” and presumably to improve traffic flow. The U.S. Army Corps of Engineers built a circuit route for Yellowstone National Park in the early 1900s to connect that park’s “important centers of interest.”\textsuperscript{129}

In 1932 Leavitt discussed his plans to complete the Kīlauea section’s road system with BPR District Engineer Frank Wheeler. Wheeler endorsed the superintendent’s loop road proposal and agreed that the Uwēkahuna route needed to be improved to meet BPR-NPS technical standards. Landscape architect Thomas Vint, who took charge of the NPS Landscape Division in 1927, also agreed that Leavitt’s plans were a logical addition to the park’s road system. He advised further improvements to modernize the byway, including widening it, adding drainage, and improving grades.\textsuperscript{130} Vint had inspected HNP in 1930 as part of his park planning work, and it is likely that he had initially suggested construction of the 3.5 mile auto trail that Leavitt now proposed to expand.\textsuperscript{131}

\textsuperscript{129} McClellan, \textit{Presenting Nature}, 104; and Carr, \textit{Wilderness by Design}, 29, 32.
\textsuperscript{131} Allen, “Superintendent’s Monthly Report,” February 1930. Thomas Vint had a 40-year career with the NPS. According to Ethan Carr, \textit{Wilderness by Design}, 190, “No individual influenced Park Service planning process and design details in the late 1920s and 1930s more than Thomas Chalmers Vint.”
Concurrent with the Uwēkahuna road plans, Wheeler also advised Leavitt on upgrades necessary for the Crater Road through the fern jungle. Wheeler studied this area, with its numerous tight curves and 7-percent grades, which Kittredge had noted in 1925. Wheeler wanted to reduce the curves so drivers would not speed in order to ascend the steep grades in high gear. He worried that speeding increased the risk of drivers crossing the center line and causing accidents. Leavitt appreciated the engineer's assessment, but noted that fixing the problem would require relocating the road, which would necessitate removing many attractive tree ferns. Again observing the NPS philosophy on preserving landscapes, Leavitt rejected the proposed realignment, demonstrating how the NPS-BPR agreement was supposed to work. "I believe we should build the road on the line as laid out," Leavitt concluded, "and if it should develop through actual use, that the road is dangerous, the question of a change to make the necessary improvements should then be given consideration, but not at this time."\(^{132}\)

Leavitt's auto trail to Halema'uma'u was heavily traveled, with up to 1,000 cars per day during eruptions. The Bird Park picnic area was also popular and approached by means of a "very poor road." In 1932, BPR Senior Engineering Inspector H. L. Handley made a location survey to connect these destinations with an Uwēkahuna-Bird Park Road, which would complete the circuit around the crater. Handley determined how to bring the auto trail up to contemporary standards, connect it with the main road, and thence to Bird Park.\(^{133}\)

Handley's path mostly followed the old road, but he suggested some realignments to reduce steep grades and eliminate sharp curves. Although NPS

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\(^{133}\) [Handley,] "Location Survey Report, Uwekahuna-Bird Park Project No. 4," 291
policy called for "very light grades" that did not exceed 5 percent, road builders in HNP sometimes had to make exceptions. Handley's route had 7-percent grades for short distances, which was considered acceptable because the realignment would reduce drainage problems that had been common in this desert area of the park. Handley furthermore diverted from NPS road design practice that recommended sculpting roadsides to form gently sloped banks for revegetation, which reduced erosion and allowed the roadway to more harmoniously blend into the landscape. Handley advised against this technique, maintaining that suitable plants for slope protection would not grow in the arid conditions.\textsuperscript{134}

The most unusual feature in Handley's survey was to run the road via Steaming Bluff because it had excellent views and steaming vents. "These steam cracks are a constant attraction to tourists," Handley observed, "and it is to be recommended that parking space close to the edge of the cracks be provided so that the effect of automobile exhausts on the condensation of steam from the cracks can be demonstrated to visitors." He also suggested this option because motorists were scarring the landscape as they made impromptu routes to the steam vents.\textsuperscript{135}

The Uwēkahuna-Bird Park Road plans were approved in 1932. Despite Handley's preference for the Steaming Bluff alignment, his alternative route was chosen because it was cheaper. A few months later, the Bureau of the Budget in Washington D.C. ordered that no new road construction begin due to the worsening economic situation during the Great Depression. Island leaders lobbied

\textsuperscript{134} [Handley.] "Location Survey Report, Uwekahuna-Bird Park Project No. 4," 2.
\textsuperscript{135} [Handley.] "Location Survey Report, Uwekahuna-Bird Park Project No. 4," 3-4.
for Superintendent Leavitt to start the project as a way to provide relief for the unemployed, but the best he could do was have the existing road regraded. 136

In June 1933 HNP issued a press release that the Roosevelt Administration’s budget might include substantial funding to help build park roads and provide unemployment relief. Press reports speculated that a public works bill being considered in Congress might provide HNP between $500,000 and $1,000,000. In July, NPS Director Albright announced the National Recovery Act of 1933 was appropriating $16 million for park roads, which included $101,000 for the Uwēkahuna-Bird Park Road and $400,000 for Haleakalā Highway (but not the Mauna Loa Road desired by Thurston and others). 137

Contractor E. E. Black was awarded the Uwēkahuna-Bird Park Road project with his low bid of $93,855. 138 One hundred unemployed men were hired to work on the four-mile road, which would eventually be extended as part of the Mauna Loa truck trail. 139 The superintendent noted that roadwork “progressed marvelously with the good weather.” 140 The thoroughfare was officially opened during an elaborate two-day celebration in April 1934 by cutting a twenty-five-foot maile-ōhi’a lei draped across the road, which was made by Peter Lee’s widow. Numerous activities were sponsored by various organizations to commemorate this community affair, including a goodwill tour of Maui that expressed the desire for inter-island cooperation. 141 (Figure 11)

138 Hilo (Hawaii) Tribune-Herald, 7 September 1933. E. E. Black also won the Haleakalā Highway contract on Maui.
139 Hilo (Hawaii) Tribune-Herald, 23 October 1933.
As was often the case in Hawai‘i, natural events forced immediate repairs on the new road. Leavitt reported that less than two inches of rain severely damaged the byway one month after it opened. The adjacent old road had acted as a dam, forcing water over the new road and creating a waist-deep crevasse near “Desert Hill.” (Photograph 18) The Civilian Conservation Corps (CCC) made repairs and built stone drainage gutters to prevent future erosion. (Photograph 19) Crews also obliterated the old road in accordance with NPS standards that required that road scars be erased from the landscape and the area restored. Soon after the rain damage, earth tremors cracked the new road.  

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Photograph 18: Erosion Damage, Hawai’i National Park.
The new Uwékahuna-Bird Park Road was washed out by only two inches of rain in 1934. (Original
Courtesy Hawai’i Volcanoes National Park and the Library of Congress.)

Photograph 19: Civilian Conservation Corps Work, Hawaii National Park.
CCC laborers built a rock-lined ditch and retaining wall to protect the road from future damage at
"Desert Hill." (Original photograph in the Superintendent’s Monthly Report, July 1934; reproduced
as HAER HI-47-4. Courtesy Hawai’i Volcanoes National Park and the Library of Congress.)

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With the loop road completed, Hawaii National Park prepared to host its most notable guest to date, President Franklin Roosevelt, who toured the park in 1934. Like all visitors, the president wanted to learn about volcanoes and view Halema'uma'u. In order to facilitate his tour, a 500-foot temporary road was constructed to the crater rim so that the polio-affected president could view Halema'uma'u without leaving his car. Walls at Uwekahuna lookout were torn down, and a ramp was placed at the crater's rim. (Photograph 20) The visit generated a great deal of excitement. The Hilo approach road was tidied so that, in the words of Superintendent Wingate, it "presented a neat and pleasing appearance." After the president's departure, the temporary measures were obliterated and the landscape restored to its former appearance.143


Landscape architect Merel Sager was assigned to HNP in 1933 to supervise construction contracts, including Crater Road, the Mauna Loa Truck Trail, and Haleakalā Highway. Sager was well qualified, having trained under NPS chief landscape architect Thomas Vint. After the crater loop road was completed, Sager supervised the byway’s finishing touches, which were built with ECW funding. A park press release announced that this program was one of “restoring confidence” for the continental United States and pledged to make every effort to achieve the same for Hawai‘i.

Whether or not Wingate succeeded in achieving the ECW’s moral goals, the CCC enrollees funded by the program made substantial contributions to HNP during the Great Depression, just as they did in elsewhere in the U.S. Historian Ethan Carr noted, “The exuberant youths heralded unprecedented opportunities to expand and develop American parks at every level. They also threatened to do irreparable harm if their activities were not adequately planned and supervised.” Sager supervised them in building parapet guardwalls and lookouts at Thurston Lava Tube, Waldron Ledge, Kīlauea Iki, as well as other places along Crater Road. (Photograph 21) These walls were a variation on the standard NPS design that featured crenellated masonry built of local volcanic rock that harmonized with the surrounding terrain. Sager noted the excellent quality of masonry work, believing that it was not exceeded in any other national park.

The CCC accomplished other road-related work. Sager's crews sloped and revegetated road shoulders where appropriate, which improved aesthetics and prevented erosion. They spruced up the park by clearing the roadsides of dead fern fronds and exotic plants. Removing alien species gave native vegetation an opportunity to regenerate and reduced fire hazards. These landscaping practices, typical throughout the NPS, were drawing such favorable public attention that Wingate expressed confidence that they would become standard for all road-building projects in the territory. He praised Sager for enhancing the park's overall appearance and bringing National Park Service practices to Hawai'i.¹⁴₈

Photograph 21: Kīlauea Iki Scenic Overlook, 1933. This masonry construction reveals how the classic NPS rustic landscape design was applied at HNP. (Original photograph in Superintendent's Monthly Report, December 1933; reproduced as HAER HI-48-15. Courtesy Hawai'i Volcanoes National Park and the Library of Congress.)

McClelland observed that NPS naturalistic landscape design "matured and flourished" during the 1930s emergency work.¹⁴⁹ This was indeed the case at HNP, where CCC construction contributed substantially to achieving the designed

¹⁴⁹ McClelland, Presenting Nature, 3.
landscape features (including lava guardwalls, stone drainage gutters and riprap) that were characteristic throughout America’s national parks.

The public noticed HNP’s improvements and aesthetic appearance. In early 1934, Wingate related that the Hilo Tribune Herald complimented the park’s “wonderful development,” but criticized the oversized Halema’uma’u parking lot, which it viewed as an affront to professed park policies of landscape preservation. The reporter’s enthusiasm was “drenched with cold water” after seeing the “formal, curbed and cemented parking area set aside amid the steaming cracks and volcanic grandeur.”\(^{150}\) He apparently did not recognize that the parking lot’s basalt curbs and dark pavement were designed to harmonize with the surroundings. Another Volcano visitor, however, praised the park, commenting, “It has been a great treat to return here after many years of absence. The officials of Hawaii National Park have so improved the roads and paths that it has been a great joy to drive or walk over them.”\(^{151}\)

Halema’uma’u produced a fiery display in 1934, drawing approximately 6,000 cars to HNP on the eruption’s first night. CCC crews directed traffic, stood guard along the crater’s edge, and helped park rangers handle the enormous crowds. Wingate remarked that the spectacle had validated NPS planning since the new roads and convenient parking made it possible to handle the visitor surge without “traffic tangles, damaged fenders, etc.” The circuit drive had significantly

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\(^{151}\) Volcano House register entry of Bernice Adele Ross of Honolulu, 11 August 1935, in Bevens, On the Rim of Kilauea, 47.
improved safety since it was restricted to one-way traffic at night. The newspaper apologized for its criticism.\textsuperscript{152}

The flurry of road development in HNP, including the concurrent construction at Haleakalā prompted Superintendent Wingate to write an article explaining NPS road-building philosophy. Wingate stressed that although road improvements were intended to allow the public to enjoy the parks, the fundamental goal of preserving the landscape was never ignored. He explained how BPR engineers worked with NPS landscape architects to preserve park features, referring to the landscape architect as “the guardian of the park policy of unimpaired preservation.” Wingate emphasized that NPS roads should be seen as the means by which visitors could have access to park landscapes, not as destinations in their own right. He asserted that the best way to visit a park was to get off the roads and hike the trails.\textsuperscript{153}

\textit{Implications of NPS on Hawai'i Roads}

While the roads to and around Kīlauea had a long history prior to the establishment of HNP, it was only after NPS administration began in 1922 that a designed, comprehensive circulation system was built to provide visitor access to some of Hawai‘i’s most spectacular natural wonders. By 1934 a primary road system had been built that not only complemented nature, but presented the world’s most accessible volcanoes. Crater Rim Road and Chain of Craters Road were major factors in developing HNP and making it one of Hawai‘i’s premier

\textsuperscript{153} Wingate, “Superintendent’s Monthly Report,” July 1934, including a transcript of his article, “Hawaii National Park and the National Park Service.”
visitor attractions. This road system was not static; it continued to evolve over the decades as the result of earthquakes and volcanic eruptions.\textsuperscript{154}

HNP’s early roads were supported by local residents that wanted to promote tourism, although much of the boosterism and lobbying for roads was generated not by Big Island residents, but by Honolulu’s prominent citizens, namely Lorrin Thurston. After HNP was established and became a federal responsibility, island residents remained involved and displayed the same initiative they had prior to 1916. While their activism was still pronounced, it became noticeably less effective. Once the U.S. government controlled the budget as well as the land, the “democratic process” (if there ever was one, since the elite had always built their preferred projects) was stifled as NPS officials made the final decisions based on the “best policy” practices and NPS philosophy.

Building HNP roads to provide access to spectacular volcanic wonders was only one part of NPS road story in Hawai‘i. Maui residents, like their counterparts on the Big Island, also wanted to provide tourist access to their island’s major natural attraction, Haleakalā Crater. The sustained local efforts needed to achieve one single road, Haleakalā Highway, were tremendous and will be examined in the next chapter.

\textsuperscript{154} The Hawai‘i Volcanoes National Park road system was completed in 1979 when the Chain of Craters Road to Kalapana was finished, thus providing a circuit loop back to Hilo. Park roads were never truly finished, however, as they continued to be destroyed and rebuilt after lava flows and earthquakes. For years the NPS battled nature and rebuilt its roads. January 2011 marked the 28th anniversary of Kīlauea’s east rift zone eruption. The lava flowing from Pu‘u O‘o severed Chain of Craters Road numerous times. It was rebuilt until 1987 when lava crossed the road at the Waha‘ula Entrance Station near the coast and severed the road. As of 2011, the Chain of Craters Road had not been reconstructed.
Chapter 6

Haleakalā Highway: Bringing the World to Maui

Haleakalā Highway within Haleakalā National Park is a scenic, two-lane road completed in 1935 to provide automobile access to Haleakalā Crater on Maui. A massive dormant volcano, Haleakalā rises 10,023 feet from the Pacific Ocean on one of the most isolated archipelagos on earth. Its summit crater is a 3,000-foot deep depression, twenty-two miles in circumference. Within the crater are cinder cones as high as 1,000 feet, which are dwarfed by the sheer immensity of this great pit. The crater is memorable for its dramatic panoramas, highlighted with vivid colors that vary from ochre to lavender to gold. Traversing stark, almost treeless country, the road blends effortlessly with the surrounding landscape. On a clear day, the drive to the summit provides sweeping views of central Maui, the West Maui mountains, the Pacific Ocean, and other Hawaiian islands. Quite frequently, clouds envelop the slopes near the middle elevations of Haleakalā. One of the most striking experiences along Haleakalā Highway is the sensation of being above the clouds—a perspective most people only experience from the windows of an airplane.

This chapter examines the debate that led to the construction of Haleakalā Highway, which was built to “bring the world to Maui.”1 (Figure 12) The history of Haleakalā Highway demonstrates that Hawai‘i’s leaders publicly and aggressively

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advocated for scenic roads as commercial enterprises to help establish tourism as the islands’ third industry after sugar and pineapple. The road was built for this single purpose and resulted from persistent local initiative comprised primarily of Maui’s haole elite, which took advantage of the wider national resources of the U.S. Government. To achieve their goal, “Mauians”\(^2\) effectively facilitated cooperation between local, territorial, and federal bureaucracies, while also capitalizing on the expertise of the U.S. National Park Service (NPS) and Bureau of Public Roads (BPR). This inter-agency cooperation combined the landscape preservation ethic of the NPS with the BPR’s highest technical standards to design a modern road that seamlessly blended with the natural environment. Developing Haleakalā Highway was part of a spirited competition between the islands of Hawai‘i and Maui that saw both islands in a race to attract tourists.

Numerous archaeological sites, including heiau (temples), petroglyphs, quarries, and burial sites testify that Haleakalā was a vital destination for ancient Hawaiians.\(^3\) Maui had a well-built and engineered road system that was probably the most comprehensive network in Hawai‘i. The alaloa (long road) was six-to-eight feet wide and paved with stones in some areas. It completely encircled the island by the early 1500s and had important links in the crater.\(^4\) According to Hawaiian tradition, the crater was also a sacred place where religious ceremonies were conducted. Further testimony regarding Haleakalā’s traditional significance

\(^2\) The term “Mauians” in this chapter refers to residents of Maui, which is the term commonly used by those who live in Hawai‘i.

\(^3\) Will Kyselka and Ray Lanterman, Maui, How It Came to Be (Honolulu: University of Hawaii Press, 1980), 133.

Figure 12: Haleakalā Highway, Haleakalā Section, Hawaii National Park, 1935.

is also found in its rich lore. Haleakalā translates from the Hawaiian as “house [used] by the sun.” Legend relates that the demigod Maui lassoed the sun, slowed it down, and thereby lengthened the day, which allowed his mother Hina to dry her kapa (barkcloth).^5

Despite Haleakalā Crater’s cultural significance, Hawaiians’ connection to the summit area, until recently, is not well documented in the English-language archive. As with most road issues in HNP prior to the Second World War, Hawaiians appear to be absent from the development of Haleakalā Highway.

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While examining Hawaiian-language newspapers might yield information on the relationship between Hawaiians and the construction of Haleakalā Highway, NPS and Territorial documents are silent on the issue. As with the other HNP roads, Haleakalā Highway’s development was a haole initiative. By the time the road was proposed, Haleakalā lands were already owned by haole ranchers. It is almost certain that Hawaiians were employed on this work-relief program, but labor records were not located and probably do not exist for this public works project.

The only mention of Hawaiian involvement with the development of Haleakalā Highway was the opening celebration, when Hawaiians were relegated to the role of cultural window dressing. As was often the case, haole relied on Hawaiians to lend “authenticity” to their activities, for example, by having hula dancers and lei at the highway’s opening festivities.\(^6\)

\[\text{Journeys to the House of the Sun before 1935}\]

The striking scenery and romantic allure of Hawai‘i’s volcanoes have long attracted visitors. In 1828 three American missionaries stationed in Hawai‘i, Richard Green, Lorrin Andrews, and William Richards, were likely the first non-Hawaiians to record their journey up Haleakalā. “Natives” told the missionaries that the way was long, but that the ascent was easy. After an early start from an undetermined location, they reached the summit about 5:00 p.m. Although tired, the missionaries reported that they felt “richly repaid for the toil of the day, by the grandeur and beauty of the scene.” Elaborating on their experience, they continued:

\[^6\text{Hawaiians are involved with contemporary issues at Haleakalā and regularly participate in planning issues regarding the national park and scientific observatories on the summit.}\]
The clouds . . . were far below us; so that we saw the upper side of them, while the reflection of the sun painting their verge with varied tints, made them appear like enchantment. We gazed on them with admiration, and longed for the pencil of Raphael, to give perpetuity to a prospect, which awakened in our bosoms unutterable emotions.

After reaching the summit, the party descended about a mile and spent the night beside the precipice. The wind reminded them of a cold November night in New England as the temperature dropped from 77°F to 43°F. They returned to the summit the next morning to “contemplate the beauties of the rising sun,” setting a precedent for what became Haleakalā’s premier attraction. Being “above the clouds” was clearly an amazing encounter during an age when travelers were restricted to ground transportation. The cold temperatures of high elevations were also unusual in tropical Polynesia.

Tourists on Maui were rare until the late 1800s. Robert Elwes, who visited Maui in 1849, provides what is probably one of the earliest tourist accounts of a journey to Haleakalā Crater. Upon the recommendation of Kamehameha III’s physician, a “well-informed” Englishman, Elwes made the return trip from Lahaina, Maui, in four days, traveling via Makawao, situated on Haleakalā’s slopes about 1,500 feet above sea level. Elwes and his American guide, a sugar grower, started about noon, intending to spend the night in a cave along the way. When they reached the 8,000-foot elevation, the summit weather was clear, so they decided to continue their journey. Elwes provided little description of the trail, but noted it was a hard climb near the summit. At the crater’s edge, he recalled, “I never shall forget the view which then presented itself, and feel that it is quite impossible to describe such an extraordinary scene.” Nevertheless, Elwes portrayed the details

7 “Sandwich Islands, Tour Around Maui,” Missionary Herald, August 1829, 246-251.
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of the immense crater, being awed at the range of colors highlighted by the sunlight, the snow-capped summits on the island of Hawai‘i, and of course, the clouds below. They slept in a cave, the next morning awaking to a bitter cold, which prompted them to descend as quickly as possible.\(^8\)

Isabella Bird ascended Haleakalā in 1873, noting that the volcano was the object that attracted "strangers" to Maui and suggesting that the "grand spectacle" of the summit sunrise had by then become an established activity. The "road" had been improved, but remained primitive. She observed, "The road soon degenerated into a wood road, then a bridle track, then into a mere trail ascending all the way." Her journey was uncomfortable as she suffered from excruciating cold, with soaked clothing that was "scarcely bearable." When Bird dismounted her horse, she complained of difficult uphill walking. Despite this, she enjoyed the incredible fog, clouds, and light, while also noticing the remarkable oddities of Maui's mountain weather, where it could rain on one side of the road and be "quite fine" on the other.\(^9\)

In 1875 Henry Whitney, publisher of Honolulu's Pacific Commercial Advertiser newspaper, saw enough interest in Hawai‘i as a tourist destination to write the first guidebook to the islands. Whitney described Haleakalā as well worth the time and trouble, acclimating the summit sunrise and sunset as a once in a lifetime experience. He recommended hiring a good guide for the narrow, fifteen-mile

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\(^8\) Robert Elwes, A Sketcher's Tour Round the World (London: Hurst and Blackett, 1854), 211-217.
horse trail, as the path was good to a point, but then deteriorated into a jumble of confusing cattle tracks.\textsuperscript{10}

Whitney's 1890 guidebook suggested improved options for accessing the crater. A horse journey was offered, but Whitney preferred the easier method of taking the train to Pā'īa, then riding over six miles of good carriage road to Makawao, where one could start immediately for the crater if horses were reserved in advance. A new Haleakalā "road" (trail) had opened in 1889, which Whitney noted was easily followed even by starlight. This improvement was timely, as Whitney mentioned that a tourist had complained that the expedition involved the longest four miles in Hawai‘i because the road was "continually washed away by mountain torrents," the air was thin, and the solitude had "a greater pressure to the square inch than any barometer can measure."\textsuperscript{11}

Notwithstanding the complaints, Whitney endorsed the arduous adventure, emphasizing that travelers were rewarded with a view of "the most stupendous of nature's works." He advised tourists to bring a letter of introduction to H.P. Baldwin so that he would let them use his "charming Olinda retreat," which featured a comfortable house and good pasturage. Overnighting at Olinda was also counseled as a way to acclimatize before climbing to higher altitudes. Although Whitney's 1890 guide suggested a 2:00 a.m. start time to allow horses to travel slowly but still reach the summit by sunrise, his 1895 book recommended a late afternoon arrival to witness sunset. This plan had the advantage of "making the


ascent in the most comfortable manner, escaping an unseasonable ride in the raw and chilling fog.\textsuperscript{12}

With Haleakalā established as Maui’s premier attraction, a rest house was built near the crater’s edge in 1894. C.H. Dickey, a Haleakalā enthusiast during “the old days” when visitors slept in caves, started a subscription campaign, seeking five-dollar contributions from individuals throughout Maui. Baldwin, one of Maui’s most prominent sugar plantation owners, furnished laborers to construct the building. Each Monday before daybreak, workers walked twenty to twenty-five miles to the construction site, worked all week, and returned home on Saturday. They often labored in blinding, bitterly cold rain and were housed in rude shelters that provided little protection from the elements. The building was finished in two months, but damaged in a storm several years later. Maui residents were not discouraged, and Worth Aiken of Olinda, a Haleakalā aficionado who first climbed the volcano in 1891, collected funds to re-roof and improve the rest house. About 1901 Aiken organized Haleakalā’s first visitor services, offering horseback expeditions to the summit and into the crater from his Olinda residence, Idlewilde.\textsuperscript{13}

\textit{Wanted: A Road to the Summit}

As demonstrated in chapter four, during the early 1900s Mauians’ demands for better roads were not limited to Haleakalā. Maui’s economy depended on agriculture, namely sugar and pineapple. The most “serious need” was to finish


the belt road, which would open land for development. Civic and political leaders also articulated that it was imperative to foster new industries and considered scenic roads, including a byway to Haleakalā’s summit, as commercial enterprises essential to build a third industry, tourism.

Evidence demonstrates that Hawai‘i’s haole elite played a key role in manufacturing demand for a Haleakalā road rather than responding to visitors’ expectations for improved access. The first written suggestion for an automobile road to attract sightseers to Haleakalā was probably a letter and editorial in the *Maui News* in 1912. Alexander Hume Ford was a well-to-do journalist who moved to Honolulu in 1907 and founded the *Mid Pacific Magazine* in 1911. He tirelessly promoted Hawai‘i and the Pacific.

In a lengthy letter to the *Maui News*, Ford extolled the virtues of Haleakalā, opining that there was “no earthly reason” why a road should not be built to transport tourists “in a jiffy from the steamer wharf to the edge of the earth’s greatest extinct crater, the rim of which is just two miles above the smiling ocean.” He foreshadowed, or perhaps even instigated, the islands’ competition for tourists by praising Maui’s primary attraction over those of the island of Hawai‘i. Ford noted that Kīlauea volcano on Hawai‘i was frequently inactive, which disappointed tourists. He asserted, on the other hand, that the “wondrous beauties of Haleakala” at sunrise were always available, providing Maui with “the greatest possible tourist asset in the world.”

Ford explained how it was a shame that only eight miles of road kept travelers from what he claimed was “the most wonderful scene from God[i]s great

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picture book.” His big dreams included a hotel on the crater rim and a road into the crater itself. An editorial heartily endorsed Ford’s letter, claiming that construction was feasible and “would open to popular tourist travel the most wonderful sight in the Pacific.” The writer predicted that word of a comfortable automobile road to Haleakalā Crater would spread worldwide. The subsequent rush of tourists would tax Maui’s hotel accommodations to the limit, which was presumably a favorable development.15

While Ford’s enthusiasm was admirable, he was prone to exaggeration and somewhat insensitive. Haleakalā was not “always available,” but disappointed visitors when the weather was poor. He praised Maui’s fine roads, but chided Mauians for building “necessary” roads that no one used. Recognizing that a Haleakalā road was a luxury, Ford audaciously justified it because “everyone owns an auto” and it would “put Hawaii on the [tourist] map.” Thrum’s Hawaiian Annual observed that the “auto habit” was “evidently growing throughout the Territory in a substantial manner.” With a population of about 31,550; there were only 354 licensed automobiles on Maui in 1913. Many Maui residents were plantation laborers that could not afford motorcars. Despite this, Ford opined that it was “unreasonable that Haleakala was neglected for a few mere necessary roads that someone would build anyway,” such as the belt road around West Maui.16

Several months later, another article emulated Ford’s tone and enthusiasm. A “well-known” writer, apparently from the U.S. mainland, claimed that the trip to

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Haleakalā was not difficult, but the mere mention of “horseback” deterred most tourists from making the journey. She emphasized that an auto road would encourage those who had previously avoided travel to the crater, as well as first-time tourists from the U.S. mainland, to come to Maui to see this one attraction.\(^{17}\)

The appeal for a road resurfaced in 1914 when a *Maui News* editorial complained that Haleakalā attracted relatively few sightseers. The newspaper pointed out that Kīlauea volcano on the island of Hawai‘i received many more visitors because it was accessible by road and Haleakalā was not. The paper surmised:

> The average tourist is past middle age, and the most of them are men and women who have spent their lives in soft occupations within great cities. Many of them are invalids or semi-invalids. Not one in fifty is physically able to stand the shaking up of a ride for eight exceedingly rough miles; or sleeping on the ground among the fleas and filth of the “rest-house” at the summit of our mountain.\(^{18}\)

This commentary foreshadowed the competition for improved roads to attract tourists that developed between the islands of Maui and Hawai‘i in the coming decades.

Despite these perceived problems, tourists enjoyed Haleakalā, apparently oblivious to the substandard road. A possibly biased 1911 article by Aiken, who still owned his guide service, advertised Maui as a “tourist’s mecca,” with Haleakalā “easily accessible.”\(^{19}\) In 1913 George Thayer embarked on a three-day horseback trip around East Maui, including Haleakalā. Even though he had not been in the saddle for nearly fifty years, he delighted in the adventure, claiming it

\(^{17}\) “Maui Boosted by Mrs. Yates,” *Maui News*, 9 November 1912.


\(^{19}\) Worth O. Aiken, “Maui, the Tourist’s Mecca,” *Mid Pacific Magazine*, October 1916, 373.
ended too quickly and that "the old trick of riding a trotting horse came back as if but yesterday." Three motorcyclists attempted to ride to the crater in 1915. When one of their machines broke down, they walked five miles to Olinda, spent the night in an unattended house, and the next morning walked eight miles to the summit in 7.5 hours. They ignored the "physical discomforts" of their exhausting trek, claiming that of all the world's scenic wonders, "Sunrise on Haleakala should rank first and foremost."\(^{21}\)

Maui residents remained committed to providing visitor services, even if access remained a challenge. The increasing number of tourists, as well as vandalism, rendered the rest house inadequate by 1914. Lorrin Thurston, always an advocate of tourism and a staunch proponent of development for the Volcano area, also supported Maui by organizing a new rest house subscription. The Maui Chamber of Commerce supported Thurston's efforts and helped raise funds beyond the $1,525 initially collected. A new concrete rest house was built on the crater rim for $4,000 in 1914. In 1924–1925, two sleeping dormitories, an observation room, and a water tank were added. By then, nearly $20,000 had been raised and spent on visitor accommodations at Haleakalā, creating an even stronger demand for improving access to the crater.\(^{22}\) Despite Thurston's support of the rest house, no evidence was found that indicated he advocated for Haleakalā Highway like he did for Volcano and Mauna Loa roads on the Big Island.

Haleakalā enthusiasts began considering how the road might be built. Financing a scenic, purely recreational road seemed a questionable undertaking.

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with Maui’s government preoccupied with improving farm-to-market roads and completing the belt road. Early discussions demonstrated that the matter began as a local issue, with boosters working to secure the support of both the county and territorial governments. Much of the debate centered on the question of who should pay for the new road. Would it be tackled as a local project, as the Hāna Belt Road, or should Maui receive assistance from the territorial and/or federal governments?

In 1912 an engineer estimated that $300,000 was needed to build a drive to the summit, through the crater, and down to the opposite coast. Maui Sheriff Clem Crowell pointed out in 1914 that convicts built the road to Kīlauea and could build Haleakalā road. “It isn’t the fastest way to get work done,” according to the Maui News, “but it is undoubtedly the cheapest, and is just as satisfactory in the end.” The Chamber of Commerce considered strategies and approved Crowell’s recommendation to use territorial prisoners, then pressed the Maui County Board of Supervisors to appraise the matter. At Aiken’s insistence, a committee was organized to promote the road issue.

Several months later Territorial Superintendent of Public Works Charles Forbes deduced that sixty prisoners could construct twelve miles of road for $100,000 and strongly recommended that the territory “render all possible assistance.” Governor Lucius Pinkham concurred, emphasizing that the scenic road was a tourist attraction that should not be regarded as a county matter, but

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23 “Haleakala Road,” Maui News, 31 August 1912.
26 Charles R. Forbes, Superintendent of Public Works, “Report on Trip to Maui,” to Governor Pinkham, 16 October 1914, Pinkham Collection, Gov 4-4, Territorial Departments, Public Works, August–December 1914, HSA.
rather a territorial project that benefited all the islands. As such, he recommended referring the issue for the upcoming legislative session.\(^{27}\) As mentioned in chapter four, Pinkham strongly favored the development of both Haleakalā and ʻĪao Valley as Maui’s premier tourist attractions.

The following year the Maui Chamber of Commerce requested the territory fund a Haleakalā road survey, but by then, Pinkham had changed his mind.\(^{28}\) He declared that surveying the route was “premature” and a “practical” road to the summit too expensive. Pinkham advised the Chamber of Commerce to pursue the matter locally.\(^{29}\) In line with his rejection of the scenic road to Hāna, correspondence in Pinkham’s files shows that his decision was due to uncertain economic conditions during World War I.

These discussions nevertheless prompted excitement and possible routes were suggested as early as 1915. Despite the well-established Olinda trail, Kula, situated on Haleakalā’s leeward (dry) slopes, eventually became the preferred byway. Kula had more agreeable weather than Olinda, which was subject to frequent heavy rain. Furthermore, a road already reached to Kula’s 4,000-foot elevation, providing a fair start to the summit.\(^{30}\) The Olinda trail was not completely forgotten. In 1917, an automobile was driven over it, coming to within three miles of the summit. This time an engineer determined that a road might cost only

\(^{27}\) Pinkham to Forbes, 20 October 1914, Pinkham Collection, Gov 4-4, Territorial Departments, Public Works, August–December 1914, HSA.

\(^{28}\) D. H. Case to A. C. Wheeler, 27 November 1915, Pinkham Collection, Gov 4-4, Territorial Departments, Public Works, 1915, HSA.

\(^{29}\) Pinkham to A. C. Wheeler, 2 December 1915, Pinkham Collection, Gov 4-4, Territorial Departments, Public Works, 1915, HSA.

\(^{30}\) “Haleakalā Road May Be By Way of Kula,” Maui News, 14 August 1915; and “Territorial Survey of Haleakalā Road,” Maui News, 5 November 1915.
$50,000. Ford jumped at this opportunity, labeling Maui a “motorists’ paradise” and urging the Chamber of Commerce to endorse the Olinda route.\textsuperscript{31}

W. O. Smith of the Inter-Island Steam Navigation Company added another element to the debate in 1920 after Mauians complained about steamer service. Smith told them that if they wanted improvements, they should build a road to their “unrivaled” attraction, Haleakalā. He emphasized that the steamship company responded to the law of supply and demand. As such, it established its profitable Hawai’i island route because people wanted to go to the volcano knowing that they could comfortably travel to it on a good auto road from the port of Hilo. Smith encouraged Mauians to create demand for their island by building a Haleakalā road to attract visitors, thereby providing the steamship company with an incentive to improve service. He predicted that a summit road, although expensive, would pay for itself through increased tourism revenues. He suggested the territory pay for the road, since all of Hawai’i would benefit. Despite the NPS apparent lack of interest in its Haleakalā section, Smith also asserted that it was reasonable to expect that the national parks “bureau” might someday develop the road project. If these options did not materialize, Smith advised Maui that it would be good business to “tackle the job” itself, sooner rather than later.\textsuperscript{32}

Smith’s assessment was based on experience. Steamship companies had long operated all-inclusive tours from Honolulu to the volcano. As chapter four explained, Wilder’s Steamship Company had even constructed its own fourteen-mile path to connect Keauhou landing to the volcano in 1885. Several steamer companies owned and upgraded this route until 1894 when the new Hilo road

\textsuperscript{31} “Maui is Motorists’ Paradise Says Ford,” \textit{Maui News}, 27 April 1917.
rendered the Keauhou trail obsolete and thus unprofitable. Smith was applying the same business logic with Maui, encouraging residents to build the Haleakalā road, which would instigate the IISNC to provide better Maui service because it would be a good investment opportunity.

Port statistics may reinforce Smith’s assertion of Kīlauea’s acclaim, as passenger numbers for Hilo were often two or three times the number of Maui passengers from 1915 to 1920. Freight volume in terms of relative population did not reflect such variability, suggesting that the higher percentage of travelers may indeed have been visiting Kīlauea. It is difficult to ascertain Kīlauea’s popularity over Haleakalā, as passenger statistics did not distinguish between residents and tourists.³³

In 1923, steamer company representatives reiterated that Maui would not prosper from tourism until there was a good road to Haleakalā. They insisted that it was difficult to “sell Maui” because tourists demanded easy accessibility; fewer people were willing to climb into a saddle to go sightseeing. An editorial analyzed the topic, observing that the proposed road was not widely supported because Mauians viewed it as an unnecessary scenic asset at a time when commercial roads were needed to connect communities and benefit pineapple growers. The writer did not deny the importance of these necessities, but instead argued that a Haleakalā road was also an imperative commercial enterprise, without which Maui could not develop its tourist industry. Moreover he asserted that the territorial legislature should pay for the road because attracting tourists would benefit all of Hawai‘i, not just Maui. Four days later, another editorial expanded on the theme,

³³ Schmitt, Historical Statistics of Hawaii, 12, 455.
uncharacteristically adding that the road would open Haleakalā to residents, most of whom had never visited the crater.  

_Becoming a Federal Project_

After 1920 a number of factors provided the opportunity for Mauians to get their dream highway to Haleakalā’s summit built with U.S. government funding and expertise. First, Hawaii National Park (HNP) was established in 1916 to protect Haleakalā Crater on Maui, and Kilauea and Mauna Loa volcanoes on the island of Hawai‘i. In addition, the Territory of Hawaii became eligible for federal aid for highways in 1925. Finally, the Great Depression provided work relief programs.

In 1920, Horace Albright, Field Assistant to the NPS Director, as a guest of the Maui Chamber of Commerce, visited Haleakalā’s summit. Albright observed, “Ultimately a road should be built from Olinda to the summit of Haleakalā, in order that everybody may make the ascent in comfort and enjoy the wonderful effects of sunset and sunrise to be observed from the crater’s rim.” He recommended that the park service should “keep in mind the advisability of building a road to the rim of the crater and make the necessary surveys for same.” Albright insisted that Hawai‘i “deserved” this road since it had not received its share of federal aid for roads.

Even though HNP was dedicated in 1921 and active administration (based on Hawai‘i island) began in 1922 when Thomas Boles was appointed the first superintendent, NPS activity in the Haleakalā section of the park was minimal.

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35 “Predict Haleakala To Have Big Future,” _Maui News_, 26 March 1920.
Prior to the construction of the road in 1935, the Haleakalā section of Hawaii National Park could be described as a forgotten stepchild. There was no permanent park service staff on Maui, no visitor services aside from the privately operated rest house, and few resources or activities dedicated to the area.

NPS supervision was practically non-existent for several reasons. Superintendent Leavitt admitted, though probably not publicly, that HNP’s priority from 1922 to 1933 was good roads to and within the Kīlauea and Mauna Loa areas. Maui remained neglected due to the lack of easy transportation to the Haleakalā section, moreover logistical problems resulted from the fact that the “main” park and its employees were stationed on the island of Hawai‘i. Few park personnel ever came to the Haleakalā section. As late as 1932 Leavitt noted that little was done because it was exorbitantly expensive to send a ranger from headquarters on the Big Island to do work on Maui.

Maui residents were cognizant of the situation and somewhat resentful, as indicated by their concern over the native ʻāhinahina (silversword) in 1921. The Chamber of Commerce urged the federal government to do something to protect the plant before it became extinct. It scolded the U.S. government for creating a national park and then having no park officials to make or enforce rules, claiming, “As yet Haleakala has been taken over as a National Park in little but in name.”

Boles traveled to Maui in 1924, with most of his expenses paid by Haleakalā enthusiasts, not the NPS. Boosters arranged for him to experience the typical East Maui journey: by horseback to the crater, through the crater down to the sea, then

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37 Ernest P. Leavitt, “Superintendent’s Monthly Report,” June 1934. All the “Superintendent’s Monthly Reports” were typescript and are available in the Hawai‘i Volcanoes National Park library.
two days journey along the coast back to the auto road. Boles was astonished to read Haleakalā's rest house guest register and learn that fifty-nine persons had visited the summit during a two-week period. Impressed with this display of interest, Boles noted that HNP could increase its attendance with comparatively little expense for roads and trails. He told the Chamber of Commerce that the byway should not be a dream, but an expectation, without which Haleakalā's magnificent scenery would be wasted.40

NPS Director Stephen Mather's 1924 report to Congress also asserted that Haleakalā was worthy of development, acknowledging that local residents' enthusiasm would contribute greatly to its success. Much of Mather's report, however, focused on the Kīlauea section of Hawaii National Park, convincing Mauians that the prospect of U.S. government funding for Haleakalā was not particularly promising.41

The Maui Chamber of Commerce hosted U.S. Congressmen Louis Cramton and James Taylor in 1925. Touring Haleakalā's summit with Maui's most prominent businessmen and Governor Farrington, Cramton, a staunch NPS supporter, heartily endorsed the proposed road to the crater. He seemed confident that money could be secured within a few years provided an adequate right-of-way could be obtained for the road. At the time, the park boundary extended only a short distance beyond the crater; approximately four-fifths of the designated park area remained privately owned. NPS policy dictated that roads be protected by constructing them through adequate land parcels. This ensured that a suitable natural environment, rather than inappropriate (i.e., commercial) adjacent

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development, would be maintained. Cramton made it clear that a "shoe string strip" was unacceptable and urged businessmen to "get busy" and secure the necessary land for the road. He predicted that within a few years of completion, 20,000 people a year would visit the summit. Cramton was impressed with Maui's "spirit of cooperation" and encouraged Mauians to continue displaying it.

Galvanized by his experience, Cramton returned to the U.S. mainland and presented photographic slideshows promoting Haleakalā.\(^{42}\)

NPS policy generally prohibited purchasing land for parks. "Uncle Sam does not go out and buy right-of-way anywhere," one BPR engineer admonished. "It is up to the territory to secure the right of way and hand it over to the [federal] government."\(^{43}\) Although the land issues took time to settle, it was not a contentious issue. In Maui's case, condemnation was unnecessary, and Governor Farrington personally attended to the matter. The desired park land was part of the Baldwin family's Haleakalā Ranch. Harry Baldwin was one of Maui's most notable citizens and businessmen. Like most of those involved with Haleakalā's development, Baldwin was also a Republican. He and his brother cooperated in arranging a land exchange with the territory, which then donated the acreage to HNP. Boles characterized Haleakalā's landowners as "high class men" and commended them for their friendly, cooperative attitude.\(^{44}\)

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\(^{44}\) Boles, "Superintendent's Monthly Report," August 1924, November 1925; "The Haleakalā Park," editorial, *Maui News*, 27 May 1925; and Haleakalā Ranch Company History, http://haleakalaranchohistory.htm. Accessed 8 December 2009. Although Haleakalā's summit and crater areas were sacred to Hawaiians, the land had long since passed into private ownership by the time the national park was designated. It is important to recognize that the history of land acquisitions for national parks has not always been amicable with indigenous peoples. See Mark Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 1999); and Philip Burnham,
The Chamber of Commerce and the *Maui News* kept the Haleakalā project in the spotlight, now referring to it as a “federal road.” The newspaper featured a Hawaii Tourist Bureau article praising Haleakalā and reminding readers that the only thing missing from the wonderful crater trip was the road, which was needed to provide easy access for all. Once again, an editorial reminded readers that the project was a commercial road, “even if the produce of the soil will not be hauled over it.” Catering to tourists, it emphasized, was just as much a business enterprise as more obvious utilitarian pursuits. Scenic assets not accessible to visitors represented a loss of potential revenue that could be recouped by road development. The column stressed the dire need for a byway, noting that a group of military officers had visited Maui, but passed on the opportunity to see “one of the most transcendantly [sic] glorious spectacles to be found in the world.” If these fit and healthy men refused to ride to the crater, the columnist ascertained, Maui certainly could not expect civilian tourists to undertake the journey.⁴⁵

Federal interest in the road induced planning. Building the highway involved two separate projects: the thoroughfare within HNP and an “approach” road to connect the park byway on Haleakalā’s upper slopes to an existing route at the 4,000-foot elevation. (Figure 12, inset) Boles ordered a survey in 1925, confident that Congress would provide funding and that construction might be completed within three years.⁴⁶ The *Maui News* heralded the announcement as “one of the

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best pieces of news that had ever come to Maui," proclaiming the road would be a
great step towards enhancing the island’s attraction as a tourist destination.\(^{47}\)

**Designing a Road to NPS Standards**

Like the routes in the Kīlauea section of Hawaii National Park, Haleakalā
Highway followed National Park Service road-building procedures formalized in the
1926 agreement between the NPS and BPR. The NPS relied on the BPR’s
technical expertise, with park personnel establishing the location and character of
the road to ensure that landscapes were protected.\(^{48}\)

Boles and BPR engineer Frank Kittredge surveyed potential routes in 1925.
Kittredge had extensive experience in building park roads and was considered one
of the BPR’s best locating engineers.\(^{49}\) His observations on design techniques
highlighted NPS road planning considerations. Kittredge’s first task was a "hurried"
reconnaissance survey to determine the possibilities.

Kittredge surveyed potential routes from both Kula and Olinda. He preferred
the Olinda route, believing it was significantly more scenic than the Kula line.
(Olinda, as part of windward Maui, featured more vegetation than the drier Kula
route.) The Olinda course required more switchbacks, which park road designers
typically tried to avoid due to their sharp turns and steep inclines. Kittredge
believed that switchbacks were not always objectionable, since motorists could
enjoy the frequent changes of scenery. He discerned that the steep slopes at

\(^{47}\) "Haleakala Road Survey to Start; Engineer Comes," *Maui News*, 10 October 1925.
\(^{48}\) Ethan Carr, *Wilderness by Design: Landscape Architecture and the National Park
Service* (Lincoln: University of Nebraska Press, 1998), 98, 174-175.
\(^{49}\) Linda McClelland, *Presenting Nature: The Historic Landscape Design of the National
Park Service, 1916 to 1942* (Washington D.C.: Interagency Resources Division, National Register
Haleakalā’s higher elevations allowed for excellent views of Maui, neighboring islands, and the Pacific Ocean. Taking into account that the road would climb over thirty miles from sea to summit, with the last portion being at high altitude, Kittredge recommended “practical” grades of five or six percent. “The main object of this highway is recreational,” he observed, “and a hot engine going up and worn out brakes coming down are not conducive to satisfaction.” Kittredge aimed to avoid the excessive grades of the existing byway to Olinda, which were as high as 12 percent. He suggested the route run along the crater rim at several points, believing that views into the crater would be of great scenic value. This line along the rim could also serve as a logical point for a future spur road into the crater.  

While Kittredge’s team flagged the route, Boles independently inspected the area to locate suitable scenic points. The right-of-way remained a challenge, and Boles studied possible boundary changes. The superintendent’s activities made him “more and more convinced” that Haleakalā was entitled to early consideration in HNP road projects. “It is a guaranteed attraction,” he observed, “and is not dependent on the intermittent [sic] performance of some one feature like Kīlauea.” Boles noted that Kīlauea seemed to be less active and realized that HNP should concentrate on other highlights rather than relying solely on unpredictable volcanic eruptions. He also pointed out that Haleakalā was still considered an “active volcano,” which apparently was an attractive selling point.  

The BPR included Haleakalā Highway in its recommendations for HNP in 1925. The Chamber of Commerce reacted quickly, lobbying the NPS to prioritize  

construction of Haleakalā Highway over other HNP road projects. The Maui
organization asked for the support of other islands' elected officials and
organizations, arguing that there were already roads in the Hawai‘i island section of
the national park while Maui had none. The Hilo Chamber of Commerce, on the
rival island of Hawai‘i, cooperated by advocating for Maui’s project, recognizing
that Hawai‘i already had its share of road money. Governor Farrington also
expressed his support for the project.\textsuperscript{52} Unfortunately for Maui, the preliminary
survey was finished, but the NPS did not fund Haleakalā Highway. Instead, Boles
continued to focus on the Kīlauea and Mauna Loa sections of HNP and directed
funds for roads there. The \textit{Maui News} reported that the road would not materialize
in the near future, but counseled that Maui residents should not abandon their
dream.\textsuperscript{53}

Undeterred, local supporters had other work to accomplish, namely, building
the approach road. The timing was fortuitous, as the 1925 NPS survey coincided
with the Territory of Hawaii becoming eligible for federal road aid. As such, Hawai‘i
selected routes based on the congressional restrictions noted earlier and submitted
its proposed system for BPR approval. Maui County Engineer A. P. Low
recommended that the Haleakalā approach road be included in Hawai‘i’s system,
which it was, thus making the road eligible for federal financing.\textsuperscript{54} The Kula route
was chosen as the park’s approach road, although no documents were located to
explain this decision.\textsuperscript{55} The Kula byway was most likely designated due to the fact

\textsuperscript{52} “Speeding Up Of Haleakala Road Is to Be Sought,” \textit{Maui News}, 19 December 1925; and
\textsuperscript{53} “National Park Progress,” \textit{Maui News}, 12 February 1927.
\textsuperscript{54} Lyman Bigelow, \textit{Superintendent of Public Works Report}, 1925, 13, hereinafter \textit{SPW
\textsuperscript{55} Bigelow, \textit{SPW Report}, 1926, 14, 16-17.
that it could be built to meet federal standards. The steep, substandard Olinda alignment would probably have been extremely difficult, if not impossible, to upgrade to BPR standards and thus qualify for federal funding.

Another setback came in 1927 when the legislature did not appropriate the required territorial matching funds for the approach road. *Maui News* editorials scolded legislators for discriminating against Maui in favor of Hawai‘i, which again received money for its Volcano Road. The newspaper repeated its argument that the territory should build Haleakalā Highway since all the islands would benefit from increased tourism, not just Maui. The legislature funded a survey, which was completed by the territorial engineer in 1928. Maui officials remained optimistic that an appropriation would be approved the following year.\(^{56}\) They recognized that obtaining financing was essential, as construction on the drive within the national park could not begin until the approach road to its boundary was finished.

The legislature finally authorized the territory’s share of funding (52 percent) for the approach road in 1929. E. C. Mellor won the contract and began construction on the 16.6-mile road from Kula to the park boundary in January 1930. Former Maui County Engineer A. P. Low superintended the project, which provided employment for up to 150 men during the early years of the Great Depression. The highway opened in April 1933 and was notable as the first highway in Hawai‘i to have super-elevated curves, which the *Maui News* optimistically reported, came “close to making the highway fool-proof against reckless driving.”\(^{57}\)


\(^{57}\) Bigelow, *SPW Report*, 1930, 23-24; and “Haleakala Road Gets Official US Approval,” *Maui News*, 26 April 1933. A super-elevated curve is banked so that a car can safely proceed through the curve at its given design speed.
In 1931 with construction of the approach road underway, the NPS completed another survey that had significant new features. NPS Chief Landscape Architect Thomas Vint reviewed BPR engineer Robert Belt’s work, which was based on the 1925 investigations. Vint suggested that the road’s terminus be changed from the rest house to White Hill, which was nearer Haleakalā’s summit. He observed that White Hill often had better viewing conditions since the rest house views were frequently obscured by clouds.\(^{58}\)

Leavitt and landscape architect John Wosky inspected Belt’s work and rejected the survey. They admired the White Hill terminus, noting that it would also be an excellent building site for a crater rim hotel or resthouse.\(^{59}\) Wosky, however, opposed the scenic “dips” into the crater and apparently thought the grade was too steep.\(^{60}\) His refusal to accept the survey demonstrated how the 1926 NPS-BPR agreement was supposed to work: the NPS exercised its right to determine the location and character of park roads when scenic concerns and technical considerations came into conflict. It is unclear who decided that the road should not “dip” into the crater, but HNP Landscape Architect Merel Sager judged it was desirable to move the road away from the crater rim to prevent the motorist from viewing it until arriving at White Hill. In this scenario, the summit view of Haleakalā Crater would be the grand finale of the journey.\(^{61}\)


\(^{60}\) Handley, “Report on Haleakala Location Survey,” 2.

With the new provisos of avoiding the crater and having a White Hill destination, BPR engineer H. L. Handley prepared another survey in 1932, which resulted in an entirely new route. The BPR's San Francisco office instructed Handley to determine the most economical line possible and to follow the mountain's contours, which would result in a gentle, flowing road that kept grades to a minimum. Handley discovered this was futile. He observed that Haleakalā's surface appeared to be a smooth hillside, but in reality, it was jagged lava flows. Building along the contours, Handley learned, would be difficult and expensive, requiring many "cuts and fills" (excavations and filling depressions). If he ran the line along the contour of the mountain as instructed, the road would be appreciably longer, thereby increasing costs dramatically.62

Having decided the guidelines were impossible, Handley designed what he believed was a more practical route, which was a dramatic departure from previous proposals. Handley aligned the road between two large gulches by using wide switchbacks to ascend the mountain until the line reached an elevation at which the gulches were small enough to cross without expensive bridges or culverts. He managed to arrange the curves and tangents (straightaways) to an acceptable grade. The route required only one bridge and nine box culverts. Handley considered other ways to reduce costs, including curtailing the use of concrete, since water on Haleakalā was scarce. He recommended facing the culverts with rubble masonry, which suited NPS design standards by utilizing stonework of native materials to harmonize with the natural surroundings. Rock for masonry was available at the construction site. Handley also tried to locate quarries and

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62 Handley, "Report on Haleakala Location Survey," 2-4. 329
"borrow pits" within reasonable hauling distance. This was a challenge on the
treeless slopes of Haleakalā, as NPS policy dictated that these facilities not be
visible from the road.  

In keeping with the established NPS-BPR road building procedures, Wosky
and HNP Superintendent Leavitt reviewed Handley’s survey. Wosky carefully
studied all viewpoints as he walked the proposed route from the crater to the
approach road. The only change the NPS apparently made was a realignment
near the summit where the road ran outside the park boundary. In reviewing the
plans, Leavitt focused on the switchbacks. Even though the engineer had been
instructed to minimize switchbacks in favor of longer tangents and reduced grades,
Handle’s proposal featured about ten more than originally contemplated. Leavitt
did not object to this, but instead appreciated the survey’s practicality. He
recognized that Handle’s alignment between the gulches was economical, and
that the engineer’s carefully designed switchback arrangement had kept the road
and its curves to reasonable grades.  

This was exactly what Handle had been
asked to accomplish.

Building Haleakalā Highway

The federal government appropriated money to construct the road within the
park in 1931. Superintendent Leavitt, although eager to start, worried that the
economic climate threatened the project.  

In 1933, with the United States sliding

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63 Handle, "Report on Haleakala Location Survey," 20-21, 23. A "borrow pit" is an
excavation pit that is used to provide ("borrow") dirt and rocks for materials needed elsewhere on
the construction site, for instance, to fill in low-lying areas to build up the roadbed.

64 Leavitt, "Superintendent’s Monthly Report," February 1932, November 1932. As shown
in Figure 12, the NPS boundary never extended very far beyond the crater’s western edge.

deeper into the Great Depression, Leavitt’s concerns were confirmed when the U.S. government ordered that no new construction begin. Since the Haleakalā road had never been contractually obligated, funds were withdrawn.\textsuperscript{66} Leavitt recognized that territorial officials wanted NPS road projects to help alleviate Hawai‘i’s serious unemployment problem, which impacted over 10,000 “family” men. Politicians and local organizations urged the NPS to fund work. Hawai‘i’s delegate to Congress, Lincoln McCandless, introduced a bill for federal funding for Haleakalā Highway, which was supported by a resolution from the territorial legislature.\textsuperscript{67} The following month NPS Director Albright announced a $16 million appropriation for NPS road construction, including Haleakalā.\textsuperscript{68} The road was financed as a work-relief program through the National Recovery Act of 1933.\textsuperscript{69} Maui was finally getting the road its residents had dreamed of for more than thirty years.

Construction began in late 1933 with work on the 10.6-mile highway expected to be finished in two years at a cost of nearly $400,000. E. E. Black Ltd. submitted the winning bid, which was lower than the engineer’s estimate.\textsuperscript{70} Landscape Architect Merel S. Sager was detailed to HNP by the NPS Branch of Plans and Designs to supervise landscape development issues on road projects at both Haleakalā and Kīlauea. Leavitt was transferred to another park.\textsuperscript{71}

\textsuperscript{68} Leavitt, “Superintendent’s Monthly Report,” July 1933.
The highway's construction followed strict policies to protect the landscape. Access roads were prohibited; as such, crews and machinery could only work within the narrow, fourteen-foot right-of-way. (Photograph 22) This restriction meant that heavy work could only be approached from one point. Progress was nevertheless satisfactory, with nearly 121,750 cubic yards of material excavated and moved in only fourteen months, which was considered an admirable accomplishment. Quarries and borrow pits had to be out of sight from the road, which was not always an easy task given the treeless environment of the higher elevations. Project specifications furthermore advised that any damaged landscape would have to be restored. In one case, the contractor ignored the engineer's warning not to fill a streambed with rocks so that a steamshovel could be driven across. He gambled that the next rainstorm would wash the rocks and debris downstream. When this did not happen, the stream had to be restored at considerable labor cost to his company.\textsuperscript{72}

\textsuperscript{72} Handley, "Final Construction Report, March 30, 1935," 4; and Sager, "Final Construction Report, April 16, 1935," 4. Although the right-of-way was fourteen feet, the road surface was only eight feet wide.
While construction specifications protected the landscape, design elements enhanced the road's appearance and drivability. NPS road standards were reflected in the byway's relatively easy grades and curves. Grades averaged 5.4 percent, with a few short stretches of 6.8 percent, which was considered acceptable. Nine wide "switchbacks" were in fact wide radial curves rather than tight, steep "hairpin" turns. Where excavations were necessary, "daylight" cuts were featured. This technique reduced the remnants of the original slope down to the road's outer edge to improve the motorist's view and present a more naturalistic appearance. In comparison to the NPS-designed road, the territorial approach road leading to the park had an average grade of 6 percent and maximum grades of 8.5 percent.\textsuperscript{73} Twenty-three tight switchbacks were used in

\textsuperscript{73} Handley, "Report on Haleakala Location Survey," 1.
only seven miles of road, many of which proceeded through deep excavations. (Figure 12, inset)

Although much of the work was completed using heavy equipment and modern tools, pack mules were used to carry drills and other implements to the work site. Other labor was done by hand. Skilled masons fashioned the aesthetic touches that reflected traditional NPS landscape architecture and complemented the natural surroundings. Gutters, culverts, and the project’s one bridge were faced with native stone masonry. Vint had introduced uniform standards for NPS stonework in 1929. The engineer nonetheless had difficulties getting the contractor and his Japanese masons to meet NPS guidelines. Sager noted that contract specifications were not as detailed as on other national park projects, and the first few culverts did not meet requirements. Even though Sager had been pleased with the masonry work accomplished on the Big Island, Maui masons were unfamiliar with the random patterns and irregular lines that presented the “rustic” appearance typically featured in national parks. After Sager’s inspection, the masons had to be replaced several times and the work rebuilt, causing the contractor to lose money. Forcing contractors to reconstruct unsatisfactory work was not unprecedented in the NPS.  

Each vehicular bridge in the national parks was designed as a unique structure to suit its location and harmonize with the landscape. Haleakalā Highway included one reinforced-concrete girder bridge on a curved alignment that featured masonry walls and abutments. As with the culverts, the masons had trouble building the stonework to NPS specifications. The girders were not faced with

stone as in most NPS construction. Instead, Sager stained the concrete girders to match the adjacent stonework. He also applied this treatment to the concrete box culverts faced with stone. Historian Linda McClelland noted that this staining technique was developed for "special sites," although she did not define these circumstances.75

One of the project's most outstanding achievements was to obliterate the road scar from the mountain. The treeless, open brush country rendered practically all of the construction conspicuous when viewed from below. (Photograph 23) Sager's final inspection report, with photographs, pointed with pride to the fact that landscape restoration activities had made the road relatively inconspicuous. Sager directed these restoration activities, which continued long after the road was finished. HNP hired temporary labor crews to cover rock fills along the road with soil, which helped blend the disturbed slope with the surrounding landscape. More importantly, this road bank treatment encouraged the early regrowth of vegetation. In some locations, grass was planted to speed revegetation.76 (Photograph 24)

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76 Sager, "Final Construction Report, April 16, 1935," 5-6. Even in the early twenty-first century, the road is still nearly invisible when viewed from below, a testament to NPS design quality and Sager's landscape treatment.
As was often the case, weather factored into the construction equation. Conditions were remarkably good, despite some very disagreeable days when the clouds and damp fog blew over the mountain. Work stoppages were rare; rain interfered occasionally, but usually for only one day at a time. Haleakalā's high altitude and freezing temperatures caused problems that were unique in Hawai'i. The construction team could not make the roadway surface watertight above the
9,000-foot elevation. Water seeped into the surface and froze when the temperatures dropped, which caused the pavement to break when driven upon.\textsuperscript{77}

Climate and natural phenomena continued to affect the new road long after construction. Alternate freezing and thawing at the higher elevations caused the most persistent and troublesome problems. Water froze in rocks and boulders adjacent to the road, sometimes causing rockslides. In several locations, retaining walls were built to prevent the road from sliding. At other times, rain caused tremendous damage to the road, as did earthquakes.

Although the BPR engineers were highly skilled and well-suited for NPS projects, they were not always experts in dealing with Hawai‘i’s unique conditions. Extensive changes had to be made to the road’s drainage plans. During construction, Handley studied drainage problems and discovered that, in many cases, water did not run in what appeared to be well-defined watercourses. In some places, gullies carried no water after a rain. Large amounts of water ran in other locations where no previous flow had been indicated. Handley’s observations taught him some geological lessons about Haleakalā. The mountain was a relatively young volcano. Consequently, there was very little erosion and water flowed everywhere over the hard basalt rock, not necessarily into gullies. Based on this information, some corrugated metal pipe culverts had to be moved. In addition, numerous diversions or collection ditches were dug in order to direct/confine the runoff across the roadway to watercourses where the culverts had already been installed.\textsuperscript{78}


Considering the location of the project and the difficulties encountered, not to mention the unfamiliar standards imposed by the NPS, Handley commended contractor E. E. Black for being cooperative and completing the work according to specifications in a professional manner. He noted that the contractor had made a net profit of about one percent of the total contract cost. The firm made only a slight profit on excavation work.\textsuperscript{79}

Haleakalā Highway was completed in 1935. Sager noted that the terrain was “not particularly interesting,” but observed that the road provided beautiful panoramic views of the central Maui isthmus, West Maui, and five other Hawaiian islands. He concluded that the section of highway completed within the national park was superior in every way to the approach road built by the Territory of Hawaii. Sager maintained that the HNP section was outstanding in its general appearance, especially since NPS standards requiring cleanup and elimination of road scars were not common practices in Hawai‘i.\textsuperscript{80}

\textit{Bringing the World to Maui}

Mauians had worked for more than thirty years to obtain Haleakalā Highway. When the road was finally finished, it was an occasion to celebrate. The Maui Chamber of Commerce planned festivities for a year, hiring a full-time publicist and adopting the slogan, “Bring the World to Maui.”\textsuperscript{81}

The road was dedicated on 23 February 1935, which was declared a public holiday in Hawai‘i. Newspapers throughout the islands lauded Maui’s success in stories and editorials. Articles appeared in Honolulu and the national media. In

\textsuperscript{79} Handley, "Final Construction Report, March 30, 1935," 6, 8.
\textsuperscript{80} Sager, "Final Construction Report, April 16, 1935," 5-6.
honor of the occasion, the *Maui News* published a 116-page "Haleakala Souvenir Edition," which highlighted the history of the famed volcano and its new road.\textsuperscript{82}

Unfortunately, Sager commented, the "weatherman had no respect for this propitious occasion for the weather was miserable at the top with fog completely obscuring a view into the crater."\textsuperscript{83}

According to the official program, the day's events began with entertainment and reception committees meeting the inter-island steamer and a coast guard cutter in Kahului Harbor. Numerous dignitaries attended, although Governor Poindexter was not present due to illness. Guests included well-known Hawaiian swimmer and then Honolulu Sheriff, Duke Kahanamoku; Lorrin P. Thurston; high-ranking U.S. military officers; Chamber of Commerce presidents from each of the four major islands; and Hawaii Tourist Bureau chairman George Dennison.\textsuperscript{84} Also attending were Honolulu Mayor Fred Wright, Maui County Board of Supervisors Chairman H. W. Rice, Haleakalā enthusiast Worth Aiken, and Donald Ross, manager of the Standard Oil Company, which sponsored the day's events. Guests were greeted at the harbor with *lei* and entertainment. Guests enjoyed a luncheon at Wailuku's Grand Hotel, after which a motorcade proceeded to the park entrance.\textsuperscript{85} Superintendent Wingate reported that all cars had been given a "severe brake test" the day before. Unfortunately, the cars were not tested for climbing power and as a result, some stalled on the trip up the mountain.\textsuperscript{86}

\textsuperscript{85} "Souvenir Program for the Opening of Haleakala Road, Island of Maui, February 23, 1935," Hawai'i Volcanoes National Park library.
The National Broadcasting Company (NBC) aired a fifteen-minute radio newscast from the park, which was transmitted over sixty-five stations throughout the U.S. to an estimated audience of ten million. The program included a three-minute talk by Wingate, who declared: "The opening of this highway to Haleakala is a symbol of reward to those men of this territory who had the vision and the will to carry it into effect. It is the symbol of a desire... to attain to beauty and make that beauty available to all."\(^{87}\) (Photograph 25)

The opening ceremonies celebrating Haleakalā Highway in February 1935 were transmitted throughout the U.S by the National Broadcasting Company and to all islanders by KGU radio of Honolulu. (Original photograph in Superintendent’s Monthly Report, March 1935; reproduced as HAER HI-52-42. Courtesy Hawai’i Volcanoes National Park and the Library of Congress.)

Although Hawaiians had played little, if any, role in planning and constructing the thoroughfare, their culture was used to lend authenticity to the celebration. The cutting of a lei held across the road by hula dancers officially opened Haleakalā Highway. The motorcade began their ascent to the summit.

where 1,639 people in 320 cars attended the festivities. A one-hour broadcast by radio station KGU in Honolulu transmitted the summit ceremonies throughout the islands. Superintendent Wingate enthused:

Today dreams have come true. There is a road—thanks to those men of this Territory who have had both vision and will, and we are very happy. We are happy because now we know that the thrill which we have experienced will no longer be denied to anyone. Sunrise on Haleakalā! and sunset—the broken spectre!—the Silversword! These are for everyone now—and these are yours.88

Transportation improvements, according to Sager, had traditionally been motivated by economic or material reasons. More recently, he claimed, roads were constructed for the sole purpose of making rare natural beauty accessible to the public. He explained the benefits of the new road while also warning of potential problems:

The National Park Service, with its chain of scenic jewels, has been charged with a sacred trust of preservation. It likewise has a duty to provide limited accessibility, but when accessibility comes, preservation is jeopardized. The National Park Service, through its landscape architects, makes critical study of all proposed road projects, for it is easily seen that an excess of development or the absence of careful planning ultimately destroys the very features which the Service is charged to preserve.89

Sager's comments alluded to Haleakalā enthusiasts' calls for construction that would have substantially impacted the landscape. These boosters wanted a road into and through the crater, as well as a spur road to the top of White Hill. The refusal to consider such propositions demonstrated the value of NPS expertise.

Sager continued by highlighting a few NPS road construction principles and benefits:

The Haleakala Highway, within the park, has been made unobtrusive in the landscape by location and methods of construction. Road cuts have been flattened and rock fills have been covered with soil permitting vegetation to quickly return and thus harmonize this man-made construction with its surroundings.90

He praised the beauties of Haleakalā and emphasized its importance to the National Park Service:

Haleakala Crater with its majestic expanse of colorful cones and precipitous walls has much to offer the observer in a spiritual way. It is akin to the Grand Canyon in its power to emotionally direct man’s imagination into a realization of the great forces of nature. Here unfolded before him is the vivid story of not only the creation of a great mountain but of the creation of all the islands as well. Here is a panorama of elusive wild beauty which, thus far, the camera and brush have never caught.

Haleakala is truly of national park standard and the National Park Service is proud of its part in making this superb spectacle accessible to all those who will only come and see.91

The hour-long broadcast featured numerous speakers and music. The Chamber of Commerce provided food and coffee at the chilly summit, although Wingate noticed that there were also “more potent beverages concealed in car seats.” After the summit ceremonies, motorists returned from the mountain to attend a lū‘au prepared for 1,500 guests. A public dance ended the day’s events, with guests boarding the steamer for Honolulu at midnight.92

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90 Sager, “Radio Talk for Haleakala Road Opening.”
91 Sager, “Radio Talk for Haleakala Road Opening.”
Haleakalā Highway's Impact

In late 1935 Sager judged that Haleakalā Highway adequately fulfilled the Park Service's obligation to make the crater available. Anticipating that local interests would certainly agitate for a road into the crater in the future, he advised against it. Sager believed that, the "fine balance between accessibility and preservation" had been achieved as far as the road was concerned. "Any proposal for road work inside the Crater," he advised, "should be forever vigorously and strenuously opposed." Sager warned, "The service should never give ear to such a proposal as it would be a glaring violation of our obligation to preserve the areas of rare natural beauty in the parks."93 Haleakalā Highway was built to access the main scenic attractions, while leaving the rest of the park undeveloped.

The popularity of the new road was evident by the end of 1935, when Park Ranger Peck reported a 455 percent increase in visitation over one month. Not only did motorists come to view Haleakalā Crater from the newly completed roadway, but 3,500 visitors came to observe the eruption of Mauna Loa on the neighboring island of Hawai'i. The HNP superintendent noted that Maui residents were pleased with the road, which provided an opportunity to view botanical wonders they may have never before seen, such as the blooming āhinahina (silversword) and 'ili'ihhi (sandalwood).94

In January 1936 an unusually heavy snowstorm lured Mauians to the summit. The first winter the new road was open, a four-day blizzard dumped 15.5

93 Sager, "Final Construction Report, December 10, 1935," 6. The issue of a road through the crater resurfaced again in late 1950, when a special session of the Hawaii Territorial Legislature passed a resolution urging the NPS to begin a feasibility study for a road through the crater and down to the coast (Oberhansley, "Superintendent's Monthly Report," September 1950). This scenario would have revived the loop tour reminiscent of the Crater/Ditch Trail tour of the early 1900s.

Inches of snow above the 8,000-foot elevation and encased the bushes and rocks on White Hill in ice. More than one hundred cars came to view the spectacle; the next day 128 cars visited the summit. Peck reported that people went wild over the snow, some seeming to lose all sense of reason. "Men whom I had formerly known as calm and dignified businessmen, were yelling like Tarzan of the Apes and heaving chunks of ice and snow at each other," he observed. "I spent the remainder of the day digging and pulling out cars stalled or stuck in the snow which had drifted quite deep against the banks," Peck continued. "There was real suffering, especially among those in open cars, but they would have stayed on in the blizzard and probably some would have died." Peck and four maintenance men finally got everyone off the summit and closed the road.  

Photograph 26: Haleakalā Blizzard. Ranger J. A. Peck's caption for this 1936 photograph exclaimed, "This is Hawaii!" while noting that Haleakalā's unusually heavy snowfall was not "preliminary justification for the purchase of a rotary plow." (Original photograph located in Superintendent's Monthly Report, March 1936; reproduced as HAER HI-52-43. Courtesy Hawai'i Volcanoes National Park and the Library of Congress.)

Few Hawai‘i guidebooks or travel journals appear to have been written during the 1920s and 1930s. Consequently, it is difficult to determine visitors’ reaction to the new road. Sydney Clark provided a rare description of the crater journey soon after it opened. He noted that the new thoroughfare was convenient for tourists who only had one day on Maui, as they could motor to “one of the greatest wonders on earth” in 1.5 hours. The road was also a “blessing to the old and infirm,” who could now visit the “sublime” spectacle. According to Clark, not everyone was pleased with the new road. Armine von Tempski, a novelist from one of Maui’s prominent families, apparently complained that the road robbed Haleakalā of its adventure. She, along with other “old-timers,” reportedly deplored the “sissy era” of people motoring to the summit in their Buicks or Cadillacs.96

The drive for the summit road was the impetus as well as the means for developing the Haleakalā section of HNP. After nearly twenty years as part of a national park, Haleakalā’s easy access and new-found popularity allowed a ranger to be assigned to the district and visitor facilities to be built. The original road included scenic observation points and walking trails. “Sorely needed structures,” including comfort stations and an observatory building, were added in 1936. The next year the Civilian Conservation Corps (CCC) built shelters in the crater.97

Unfortunately, the new road and visitor facilities also made it easier for vandals to visit the park. The observation station had only been open for four months when persistent vandalism forced the superintendent to station two CCC

enrollees there on a round-the-clock basis to provide information and protect the structure. 98

The “normal” monthly travel statistics reported for June 1936 were 193 cars and 965 visitors. In October, 241 and 1,365 visitors totaled a 10 percent increase over the previous month. Numbers continued to climb, with 23,668 people visiting Haleakalā during a nine-month period in 1938. 99 Other scenic overlooks, spur roads, and visitor amenities were added over the decades. The road was a major factor in enabling the creation of Haleakalā National Park as a separate unit within the NPS in 1961. In addition, the byway made it possible to facilitate scientific research. Various astronomical facilities were built on the summit, which was nicknamed “Science City.”

Historian Timothy Davis noted that the tremendous amount of high-quality work accomplished during the 1920s and 1930s led to the period being widely regarded as the “Golden Age” of national park road building. Haleakalā Highway, along with the Big Island’s Chain of Craters Road and Crater Rim Drive were certainly part of this “Golden Age.” The NPS roads in Hawai‘i were by no means the technical rivals of some NPS roads of that era, such as the Going-to-the-Sun Road in Montana’s Glacier National Park or Zion National Park’s Mount Carmel Tunnel. 100 Haleakalā Highway, however, was a masterpiece of NPS-BPR engineering and landscape design, as it seamlessly flowed up the slopes of a treeless, dormant volcano. Invisible from below, the road left no scars and achieved the NPS mission of providing access while preserving the landscape.

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Haleakalā Highway was the long-desired dream of Maui’s haole elite who wanted to make their island accessible to the world and build a third industry to supplement agriculture. Their determination surmounted numerous obstacles. They secured the territorial and federal support necessary to build their road, but gave up local control in the process. For Maui, however, this resulted in Haleakalā being designated as a national park that protected the landscape and Haleakalā Crater for future generations. In addition, the island got the boost it wanted to facilitate its tourist industry.

It is difficult to determine how effectively Haleakalā Highway brought “the world to Maui.” HNP visitor statistics did not differentiate between residents and tourists, nor do tourism statistics shed light on the matter. The tourist bureau chief noted that visitors still came to Hawai‘i despite the Depression, but he was clearly concerned about maintaining the numbers.¹⁰¹ Hawai‘i tourism continued during the Great Depression, but was overshadowed by World War II. In the long run, however, scenic roads were essential in establishing tourism on Maui and the goal of “bringing the world to Maui” exceeded planners’ wildest dreams. Visitation to Haleakalā National Park peaked at more than 1.9 million in 1999.¹⁰²

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Epilogue:

Roads—Paving the Way for Progress?

Geoffrey Blainey’s *Tyranny of Distance*, originally published in 1966, examined the impact of isolation and distance on Australia’s development. Blainey noted that by sea or air, the continent was at least 12,000 miles from western Europe, from where it received most of its people, institutions, ideas, and supplies. His study explained the effect of isolation during Australia’s early history as well as the attempts to “tame” it by roads and other transport.\(^1\)

Hawai‘i, situated almost in the center of the Pacific Ocean, is one of the most isolated archipelagos on earth. The islands are 2,400 miles from North America’s west coast, with its nearest other “neighbors” being Anchorage, Alaska (2,800 miles), and Japan (3,850 miles).\(^2\) The distance was in fact much greater during the first half of the nineteenth century, since many of Hawai‘i’s necessities were imported 18,000 miles from the U.S. East Coast via Cape Horn as the west coast had not yet been developed.\(^3\)

Hawai‘i’s progress, too, was affected to a certain degree by the “tyranny of distance.” This thesis demonstrates, however, that road development, despite the islands’ isolation, was not substantially delayed by distance, as might be expected. Instead Hawai‘i residents, led primarily by haole (mostly


American settlers and their descendents) obtained the necessary technology and equipment from their homeland to build roads in the islands. Rather than distance being the dominant agent, Hawai‘i road development was usually tyrannized by its terrain and climate. Other natural phenomena, including lava and earthquakes, made keeping the roads a challenge. Some factors slowed, but did not prevent, road advances, primarily limited financial resources and a sparse population that was widely dispersed and sometimes, like Hāna, as isolated as if it were on another island.

A synopsis of the Pali Road history illustrates the transfer of transport and technology to the Hawaiian Islands. In 1837 haole installed an iron rail to ease their journey over the Hawaiians’ terrifying (by some accounts) footpath. Horses (extremely popular amongst Hawaiians) were imported in 1803; in 1845 the Pali track was upgraded to a horse trail. The next change was a great leap forward, when Wilson and Whitehouse built a carriageway down the precipice in 1898. Although fraught with difficulties, during a period of about sixty years, the Pali Trail was transformed from a footpath built without modern technology to a vehicular byway that featured iron and concrete bridges. Carriages were soon out-of-date, as the latest convenience, the automobile, was driving over the road by the early 1900s. While the roadway could handle the low volume of that era’s small automobiles, by the 1930s the increasing number of larger cars and heavy vehicles (including pineapple trucks) had overwhelmed the converted carriageway, and the road became obsolete. A freeway replaced the old road in 1961. Hawai‘i’s most famous trail evolved from a footpath to a horsepath, carriageway, motor road, and freeway within the timeframe of 130 years.
This thesis presents the history of Hawai‘i’s roads over the course of approximately 110 years. It considers who initiated the roads, why and how roads were constructed, the technology employed, and the local and national issues that came into play.

As with most development in Hawai‘i prior to the Second World War, road improvements were largely driven by the haole elite, who wanted to establish commercial ventures. Although the initiative was largely from foreigners, some Hawaiians and others also wanted to benefit from good roads and modernization. The early goal for road development was to access land and facilitate agriculture. Carriageways to attract tourists were suggested as a new reason to build roads in the 1880s. This reason was increasingly brought to the fore as leaders sought to develop tourism as a “third industry” to supplement sugar and pineapple. Roads became a critical factor in their plans for this new enterprise and were justified as a “commercial” investment that would pay for itself once the “crop” of visitors came to Hawai‘i. At least one Hawaiian, Sam Kalama, the Maui BOS chairman, accepted this philosophy.

Michael Fein pointed out that the New York State road administration was in a “state of tremendous flux” for seventy-five years. This was also the case in Hawai‘i, where leaders did whatever necessary to obtain roads, often changing course along the way. The kingdom and territorial public works departments tried to keep abreast of the latest developments. Administrative systems were often revised to improve the likelihood of success: road boards were at times elected, sometimes appointed; authority was handed to county governments in 1905; loan fund commissions were established. Various

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financing methods were used over the years, just as in the U.S. states: labor taxes, cash road taxes, loans, and fuel taxes. One necessity that remained constant over the decades were the engineers and builders who knew how to construct roads and implement the latest technology. Hawai’i’s leaders secured the islands’ available talent, whether to erect a structure on the Pali Road that was similar to the Royal Gorge Bridge in Colorado or build concrete-arch bridges to span Hāna’s rocky gorges, just like the structures along Oregon’s Columbia River Highway.

Hawai’i’s participation in the U.S. federal aid highway program in 1925 ended the long period of flux and was the most substantial change in the history of island roads. Hawai’i’s participation in the federal highway program was both unique and similar to that of the U.S. states. Hawai’i was the only territory allowed to participate in the program, but also the only jurisdiction subject to restrictions until 1931. Federal aid extended America’s “Golden Age” of highway construction to Hawai’i. It allowed the Territory of Hawaii to finally acquire its long-desired byways, in particular, large segments of the belt road system and a major scenic road, Haleakalā Highway. The highway program’s other great impact was to hasten the territory’s integration into the United States. Federal aid, together with the New Deal programs during the Great Depression, also made Hawai’i more dependent on the U.S. Government.

The credit for Hawai’i’s achievement of a modern road system that brought growth and modernization by World War II is due to its determined, local leadership. It is difficult to quantify the economic results of the road-construction program. Agriculture, namely sugar and pineapple, were the mainstays of the island economy until the late twentieth century. Roads to develop tourism are a dominant theme in this study, and it is impossible to
determine with any certainty the immediate success of these byways. Hawai‘i was harvesting “crops of tourists” by the mid-1920s. No later than 1930, tourism was labeled as Hawai‘i’s “third industry.” Contemporary literature that noted this did not credit roads for their role in this transformation.

In the long run, tourism was undoubtedly furthered by scenic byways that provided access to Hawai‘i’s natural beauty and attractions. The industry succeeded beyond the wildest dreams of its planners, although not until the late twentieth century. Ironically, as agriculture declined, tourism replaced it and became Hawai‘i’s first, not third industry. By the end of the twentieth century, like many popular tourist destinations throughout the world, Hawai‘i seemed to be overrun by visitors. While many Hawai‘i residents are concerned about the increasing numbers of tourists (annual visitors peaked at more than 7.5 million in 2006), the county and state governments, together with the visitor industry, support aggressive marketing campaigns to keep Hawai‘i competitive in the world’s tourism market.

Hawai‘i’s scenic roads have become a major attraction in their own right. The Hāna Belt Road, still a narrow thoroughfare with more than seventy original bridges, often becomes bumper-to-bumper traffic rather than a leisurely scenic drive. Visitors drive it to see the road, not just the scenery. The Department of Transportation does not conduct traffic counts, but NPS records indicate that at least 16,000 vehicles, often more, drive this road each month. Hāna’s resident

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population was only 1,612 in 2000. Records do not distinguish between resident and visitor vehicles.⁷

Visitor records for Hawai'i's national parks demonstrate that like national parks throughout America, cars are stretching the parks' carrying capacity. Historian David Louter examined Washington state's national parks and how the NPS's original goal to provide access by means of automobile roads has evolved over the decades. His work attempts to explain how to reconcile the automobile with the visitors' concepts of wilderness. He prompts one to consider whether the NPS (including the Hawai'i parks) has gone too far by allowing unlimited cars into national parks. Louter examined how Americans have reconsidered their "responses to autos in parks," re-evaluating the idea of "harmoniz[ing] machines and nature within the boundaries of the park." Cars, he emphasized, have been central to our understanding national parks as wild places, but they have also become the parks' greatest problem.⁸ Like their counterparts, Hawai'i Volcanoes and Haleakalā parks have both considered whether public transportation will at some point be necessary.

Hawai'i's national parks have experienced tremendous increases in visitation. Haleakalā has certainly succeeded in "bringing the world to Maui." According to the Maui Visitors Bureau, the park was the island's second most popular attraction in 1997.⁹ When Kittredge surveyed the road in 1925, he "conservatively" estimated that twenty cars a day would drive it. In 1970,

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⁷ Haleakalā National Park attempts to keep traffic counts, as the Hāna Belt Road provides access to the park's Kipahulu section. Statistics are flawed, however, as the NPS records show that the counter is frequently broken and traffic is not always consistent due to road work. See "Visitation Comments by Park Staff," NPS statistics, http://www.nature.nps.gov.stats. Accessed 21 November 2010. See also 2009 Hawaii Data Book, Table 1.20, Resident Population by Island and Zip Code Tabulation area, 2000.


Haleakalā National Park hosted 197,400 visitors. By 1984, park visitation reached the million mark. In 1999 visitor numbers peaked at nearly two million. Similar increases were experienced at Hawai‘i Volcanoes National Park; its visitation spiked in 1997 to more than 1.8 million visitors.10

In considering the NPS’s mission, which is to provide access while protecting the landscape, when do access and protection become a contradiction? When does access begin to threaten the landscape? In Hawai‘i, this question had already been posed in the 1920s with the creation of a 500-car parking lot adjacent to Halema‘uma‘u. While the park superintendent justified it as necessary to allow visitors to witness spectacular volcanic eruptions, where should the line be drawn? Haleakalā National Park has had to provide larger comfort stations at the summit area and has considered overflow parking lots. These impact the landscape, no matter how sensitively designed. The question remains, how much will the parks do to accommodate the ever-increasing numbers of visitors?

These questions are not new or original. Too many cars and too many visitors in the national parks are not a recent phenomena. Mather’s 1920s “sales campaign” to encourage Americans to visit the parks won the political support he sought for the NPS. Roads were built, and motorcars brought tourists. Despite the Depression, visitor numbers soared during the 1930s. Secretary of the Interior Harold Ickes, grumbling about overcrowding, exclaimed in 1933, “If I had my way about national parks, I would create one without a

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road in it. I would have it impenetrable forever to automobiles, a place where man would not try to improve upon God."^{11}

In summary, why is this history of Hawai‘i’s roads relevant? Roads, of all the types of infrastructure historians could study, are the most democratic. Most people use roads on a daily basis. Every day, people travel Hawai‘i byways, whether by private vehicle or public transport, to go to work or school, to access recreation, conduct daily shopping chores, and visit friends and family. Roads also transport tourists. Most people, though, take roads for granted.

This thesis attempts to provide a unique window into aspects of Hawai‘i’s history that other approaches have not accomplished. Another outcome of this history is its value for the future. Only recently have roads been considered as cultural resources; this study commenced as a documentation project to determine the historic value of several of Hawai‘i’s roads. The NPS roads and Hāna Belt Road subsequently became case studies, not just for their social, environmental and political history, but because these roads have demonstrated value as historic resources and important contributions to both Hawai‘i and U.S. heritage. This type of study can be a tool in making these determinations and contributing to the field of historic preservation.

If roads are historic, what do they demonstrate? Driving these roads in 2011 shows motorists vestiges of Hawai‘i’s technological and cultural past. Hawai‘i Volcanoes National Park byways still lie lightly on the land while offering a striking combination of scenic views and dramatic natural phenomena, just as originally intended. The most unusual aspect of the park’s road system from a

^{11} Ickes quoted in Donald C. Swain, “The National Park Service and the New Deal, 1933–1940,” Pacific Historical Review 41 (1972): 313, 318, 330. Louter’s study considers North Cascades National Park as a “wilderness” park and new concept for cars and parks (Louter, “Windshield Wilderness,” chapter 5). Ickes would have appreciated many of the national parks in Alaska, which are true wilderness areas completely isolated from roads.
highway engineering perspective is the manner in which the roadways are subject to a process of continual change and adaptation as sections are lost to lava flows and earthquakes. Over the years, the changes along Crater Rim Drive and the Chain of Craters-Kalapana Road have been remarkable, with major realignments, or in some cases permanent closure, mandated by the park’s volatile geologic features. The Hawai‘i Volcanoes National Park road system maintains some of its historic character as well as the quality that BPR engineers and NPS landscape architects and designers intended. The roads feature relatively easy curves and grades, historic stone parapet walls and other traditional National Park Service features such as lava curbs.

Haleakalā Highway, which has served as one of Maui’s premier scenic attractions for seventy-six years, continues to “bring the world to Maui.” It ascends the massive shield volcano and provides the same vistas as it did when it was first opened: dramatic views of Maui, the Pacific Ocean, native flora and fauna, and at the summit, majestic Haleakalā Crater, the “house of the sun.” Over the decades, changes to Haleakalā Highway have been limited. During the 1940s, the U.S. military built an inappropriate road to Haleakalā’s true summit at Red Hill, which proved popular once the park reopened after the war. The NPS subsequently reconstructed the road so that it more appropriately conformed to the park’s mission to lie “lightly on the land.” In the 1970s Haleakalā Highway was widened to accommodate modern traffic. For the most part, however, the road remains original in its alignment, bridge, and some of the stonework. Despite these changes, the road retains the quality that early BPR engineers and NPS landscape designers intended. The highway follows the contours of the volcano, passing through a nearly treeless
landscape, yet it seamlessly blends with its environment and is nearly invisible when viewed from below.

The Hāna Belt Road is probably Hawai‘i’s most exceptional historic road. The NPS roads are unique in Hawai‘i, but similar to those in other U.S. national parks. The Hāna byway, however, is incomparable in the islands and beyond. It transports motorists through a cultural landscape that retains many of the same characteristics it had when the road opened in 1926: a spectacular thoroughfare chiseled out of cliffs, passing through huge gulches and past waterfalls, with beautiful views of the Pacific Ocean and East Maui’s natural features. Small communities such as Ke‘anae and Wailua are still checkered with kalo lo‘i, nineteenth-century churches, and in Ke‘anae, a three-room school. Along the way are the historic irrigation ditches, dams, and weirs still used for central Maui’s sugar industry. The Hāna Belt Road and its one-lane bridges have become part of the cultural landscape as well. No longer just about the scenery, the Hāna Belt Road has become a destination in itself, with tourists driving the route to experience the adventure of the narrow, winding road and its historic one-lane bridges.

The Hāna Belt Road has been widened over the years, but for the most part, remains a narrow byway of curves and one-lane bridges that curtail motorists. The sinuous road forces drivers, even in today’s powerful cars, to proceed at a slow pace. The curves that weave around mountains and through gulches limit the motorist’s view. This narrow road and its restricted sight distance present the same intimate view of nature that a driver would have had in 1926.¹²

¹² Gabrielle Barnett discussed the view from the windshield in historic road design in “Drive-By Viewing, Visual Consciousness and Forest Preservation in the Automobile Age,”
In contemporary times, Hāna is popularly known as Maui’s “last Hawaiian community.” Relatively few highway improvements have been implemented during the past eighty-four years, which has not only preserved the historic integrity of the Hāna Belt Road, but helped maintain the character of the Hāna District. The slow, winding road has impeded substantial development, just as writer Sydney Clark observed in 1939, which has subsequently allowed East Maui communities to retain their rural qualities and many cultural traditions. Although there has been development pressure, Hāna has successfully resisted a golf course, strip malls, and the sprawling subdivisions common in the rest of Maui. Travelers along the Hāna coast are served by an occasional roadside stand and must drive all the way to Hāna for limited conveniences such as groceries, gasoline, and restaurants. The Hāna community has worked together to “Keep Hāna Hawaiian,” as a bumper sticker urges, and to preserve its rural lifestyle and values. The journey to Hāna, and a few other relatively untouched roads scattered throughout Hawai‘i, provide opportunities to experience a rural way of life that is becoming more rare in the Hawaiian Islands.

Technology and Culture 45 (January 2004): 43. Tim Davis maintains that narrow roadways’ close proximity to the vegetation and landscape bring motorists into “intimate contact with their surroundings.” (Timothy Davis, Todd A. Croteau, and Christopher H. Marston, eds. America’s National Park Roads and Parkways: Drawings from the Historic American Engineering Record [Baltimore: Johns Hopkins University Press, 2004], 5.)
Glossary of Hawaiian Words

‘a‘ā: One of two types of lava in Hawai‘i, it is chunky and jagged lava.
‘āhinahina: silversword plant (Argyroxyphium sandwicense), a native plant found only at altitudes of 1,870 meters or more on Maui and the Big Island.
akua: god or goddess
alaloi: highway, main road, belt road around an island, long road.
ali‘i: chief, chiefess,
haole: white person, American, Englishman/English, Caucasian; formerly foreigner.
heauli: pre-Christian place of worship, shrine; some were quite elaborately constructed stone platforms.
hula: Hawaiian dance, hula dancer, to dance the hula.
‘ililahi: Hawaiian sandalwood (shrubs and trees) with fragrant heart wood.
kanaka, (kānaka-plural): man, Hawaiian
kalo: taro
kalo lo‘i: taro patch
kapa: barkcloth
kipuka: an oasis within a lava bed where there may be vegetation.
koa: the largest of native forest trees, with light-gray bark and crescent-shaped leaves (Acacia koa).
kuleana: property, often refers to a small piece of property
lei: garland, wreath, necklace of flowers.
lū‘au: Hawaiian feast, named for the taro tops always served at one.
luna: overseer, foreman, boss, supervisor.
maile: a native twining shrub.
maka‘āinana: commoner, populace, Lit. people that attend the land.
‘ōhelo: small native shrub in the cranberry family (Vaccinium reticulatum).
‘ōhia lehua: native tree that grows abundantly in wet areas.
pāhoehoe: One of two types of lava in Hawai‘i, it is a smooth, unbroken type of lava.
pali: cliff, precipice, steep hill.
pili: grass formerly used for thatching houses (Heteropogen contortus).

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  Gov 2-8 Maui

  DARGS 7-1 Letters to Superintendent of Public Works, 1884–1893
  DARGS 7-2 Letters to Superintendent of Public Works, 1893–1897

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DAGS 7-3 Letters to Superintendent of Public Works, 1897–1898
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   Gov 6-21 Misc: Kahakuloa Rd, Kamehameha Hwy, Kohala-Waimea Belt Road, Kona Improvement Club
   Gov 6-22 Misc: Outdoor Circle
   Gov 6-23 Misc: Prison Camps; Prisoners; Roads; Federal Highway Act; Volcano Road Extension
   Gov 6-24 Misc: Waimanalo Belt Road

   Gov 3-3 Loan Fund Commission: Hawaii, Kauai, Maui, Oahu
   Gov 3-5 Public Works Department
   Gov 3-6 Legislature, 1909–1913; Counties: Hawaii
   Gov 3-7 Counties: Kauai, Maui, Oahu
   Gov 3-11 Parks, General and Volcano

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Gov 7-11 Loan Funds
Gov 7-13 Department of Public Works, December 1931
Gov 7-14 Public Works, Federal Aid
Gov 7-22 Counties: Honolulu
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Gov 7-24 U.S. Departments, Emergency Relief: Federal Emergency Administration of Public Works
Gov 7-27 National Park Service; Navy: Kalanianaole Highway/Wailupe
Gov 7-32 Misc: Kona Road


Box 1, U.S. Congress Records
Box 3, Subject Correspondence
Box 7, Correspondence, Governor


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Box 1, 1860s to May 1889
Box 2, June 1889 to 1913
Box 3, Tapes, George Houghtailing Interview, transcripts, [1995]


Gov 5-2 Territorial Departments-Loan Fund Commission, Hawaii
Gov 5-4 Territorial Departments-Public Works; Bonds, Public Improvements; Legislature 1919
Gov 5-5 Counties; Legislature 1920–1921
Gov 5-7 Misc: Hawaii National Park, Hilo Board of Trade, Missionary Highway-Honolulu
Gov 5-8 Roads


Gov 4-2 Loan Fund Commission
Gov 4-4 Public Works
Gov 4-5 Legislature 1915–1918; Counties
Gov 4-7 Misc. Bonds, Hawaii Promotion Committee, Hilo Board of Trade
Gov 4-8 Reports 1917 Counties
Gov 4-11 Dr. J. H. Raymond

Gov 8-9 Territorial Depts. Public Works, Territorial Highway Department
Gov 8-15 Counties: Hawaii, Honolulu, Kauai
Gov 8-16 Counties: Kauai, Maui; United States Dept. of Agriculture: BPR
Gov 8-18 Emergency Relief: CCC, Emergency Conservation Work
Gov 8-19 Emergency Relief: Works Progress Administration
Gov 8-21 National Park Service
Gov 8-26 Haleakala Road

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