

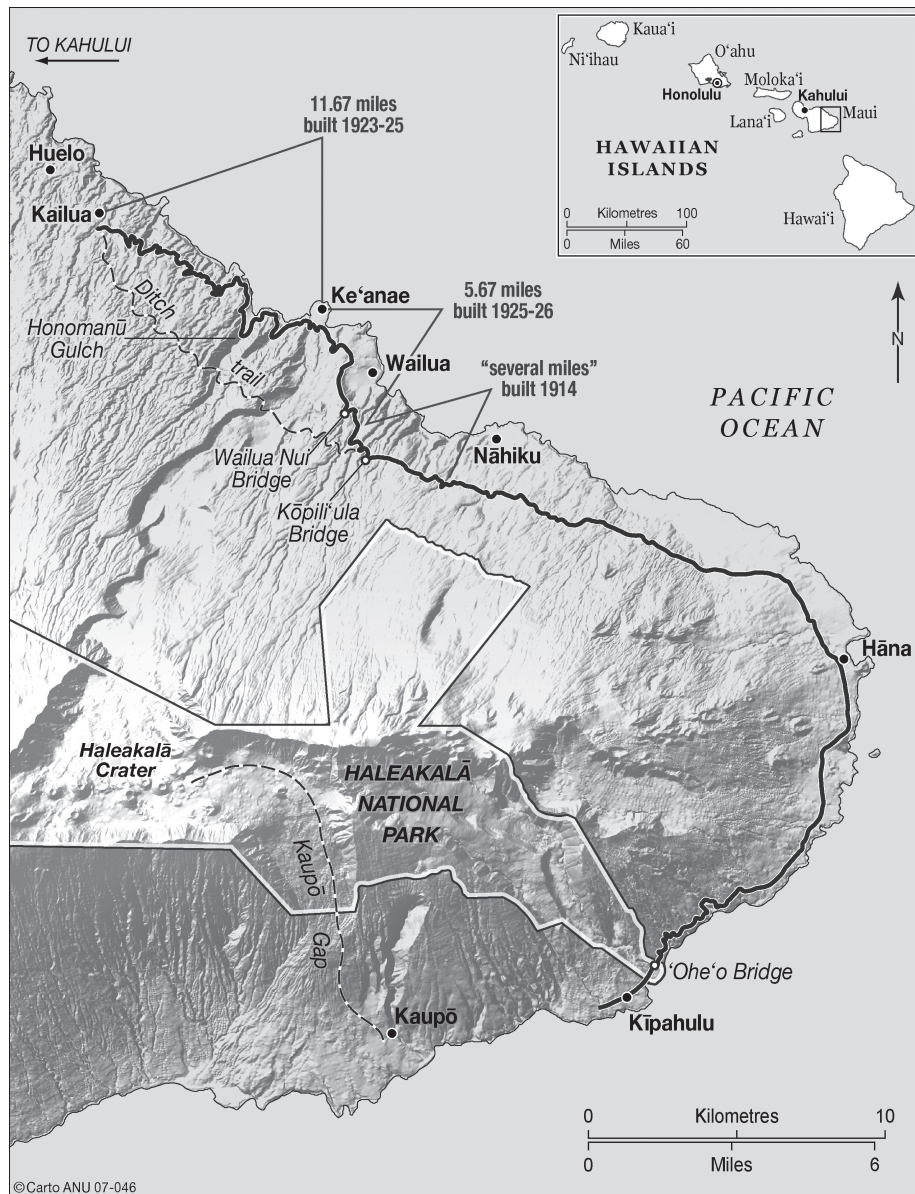
DAWN E. DUENSING

## The Hāna Belt Road: Paving the Way for Tourism

THE HĀNA BELT ROAD, which opened in 1926, was a remarkable engineering and civic achievement for the island of Maui. The road traversed some of Hawai'i's most rugged terrain and rainiest climate, which for centuries made East Maui's windward coast one of Hawai'i's most isolated and inaccessible areas. The construction of a road from Kailua to Hāna, as well as dozens of concrete bridges between Kailua and Kipahulu, was fraught with difficulties as the County of Maui and private contractors overcame the inclement weather, precipitous mountains, and deep gulches of the East Maui wilderness. When completed, the Hāna Belt Road extended Maui's "belt" (around-the-island) road system, ended coastal communities' isolation from the rest of Maui, and opened the area to settlement, agriculture, and most notably, tourism. The road'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 a new industry, tourism.

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Building the Hana Belt Road, 1914–1926. Map highlights the Hana Belt Road section listed on the National Register of Historic Places. Haleakalā National Park, which was part of Hawai'i National Park when the road opened in 1926, depicts the park's current boundaries. Cartographic Services, Research School of Pacific and Asian Studies, The Australian National University.

## EARLY TRAVEL ALONG THE HĀNA COAST

Although there were few tourists on Maui in the nineteenth century, in 1869 *The Pacific Commercial Advertiser* highlighted a tour of East Maui, including the Hāna coast. H. M. Whitney advised that the road was good at first, but grew worse and worse until reaching the “Hamakua Swamp,” where it became “wretched” and “abominable,” a disgrace to the government, and the worst road in the Kingdom of Hawai‘i. After slogging through the swamp on horseback, a trail emerged to traverse over *pali* [cliffs] and through valleys in “the Switzerland of Hawaii,” where nothing was more enchanting than the “wild and ever changing panorama.” 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 Hāna coast, with its “paradisiacal” scenery, was unforgettable and would more than compensate for the discomforts of the rough road and rainy weather. Whitney also reported a rumor that a good road would soon replace the muddy trail through the swamp.<sup>1</sup> Like others who followed him, Whitney emphasized that the area was characterized by “impenetrable forests” that were impassable without a road and that the existing “highway” or “road” was in fact no more than a trail.

George Bowser adventured along the Hāna coast in the 1870s, opining 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 go a long way in dealing with the poor trail conditions. He described precipitous mountain tracks, pointing out that those with weak lungs should stay on their mules and make sure that there were good cruppers on the saddles. Bowser highly recommended hiring a guide, as crossing the stream torrents in the gulches could be dangerous. He advised that tourists be prepared for “floundering and creeping along at anything but a lively pace.”<sup>2</sup> Bowser highlighted another recurring theme of the early accounts, that adequate time and physical stamina were necessary for journeys along the Hāna coast.

In the 1870s, fifteen miles of unpaved road were built from cen-

tral Maui into East Maui's rain forest to facilitate construction of the Hāmākua Ditch, which was completed in 1878 to transport water to central Maui's sugar plantations.<sup>3</sup> These trails, as well as others that were subsequently built, appeared to be a catalyst for initiating more regular overland travel along the Hāna coast, as the tracks became useful horse paths. Haleakalā Crater had already been established as a "must see" for Maui visitors during the late nineteenth century. By the early 1900s, a typical Haleakalā adventure also included the Hāna coast and the "Ditch Trail." Guided horseback tours trekked to the summit of Haleakalā, through the volcano's massive crater, and down via Kaupō Gap to the village of Kaupō. From Kaupō, travelers continued on a rough trail to Hāna via Kīpahulu. Near Nāhiku, they took the Ditch Trail through the rain forest back to Kailua.<sup>4</sup> A 1915 Hawaii Promotion Committee map depicted the "Famous Ditch Trail," which began west of Nāhiku and ran at an elevation of 1200 feet to the end of the wagon road at Kailua.<sup>5</sup>

Six articles in the *Mid Pacific Magazine* in 1915 and 1916 enthusiastically recounted adventures along the ditch trails, using superlative terms to prove that the Hāna coast's scenic beauty 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 opined that the scenery was so stunning that the journey should be walked, so as to enjoy it longer and not miss anything.<sup>6</sup> Jack London conveyed the highlights of his adventure through this "Maui Wonderland." He recounted that the trail was not very wide, and like the engineer who built it, the path "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. He recalled how a Maui cowboy known for his bravery on Haleakalā's rugged slopes rode the trail and lost that reputation. When he came upon the first narrow flume, which spanned a hair-raising gorge with wild cascades above and below, the cowboy explained that he had a wife and children and crossed the



flume on foot, leaving his horse behind. 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 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 four or five hundred feet below from horseback was commonplace, and London claimed, “non-productive of thrills.”<sup>7</sup>



Footbridge on the Ditch Trail, circa 1890s. Hawai'i State Archives.

## DEMANDS FOR A BELT ROAD TO HĀNA

Although tourists had long recognized the value of traveling the scenic Hāna coast, Mauians initially had more practical reasons for demanding an improved road. In 1902 a *Maui News* editorial claimed that one of Maui's most serious needs was a wagon road not just to Hāna, but all the way to Kīpahulu. The writer asserted that a decent road would open land to development in the form of "hundreds of small farms," which would increase property values and thus tax revenues. Later that year another editorial opined that the ditch trail could easily be converted into a public road "without the outlay of one cent of money" and advised that revenues from government leases of the East Maui watershed should pay for the work. Even as another commentary noted that the proposed byway would be expensive, it observed that in the long run, it was a "cheap investment" as it would benefit the entire island with homesteads that would not only add to Maui's commercial production, but also give the rest of Maui a new outlet for its produce.<sup>8</sup>

Editorials continued to stress the importance of a road to Hāna. "What the Central Pacific was to California, and what the Panama Canal would be to the Islands," *The Maui News* emphasized in 1903, was "relatively what a good road all the way from Pā'ia to Hāna would mean to Maui." Another column claimed that good wagon roads were as essential to the island as arteries were to the human body. A road to Hāna, it seemed, was absolutely necessary for the economic development of East Maui and its success in small-scale farming, sugar, and "minor" industries. The writer predicted the road would bring prosperity that would more than pay for its construction.<sup>9</sup> While these commentaries saw the obvious economic benefits of the road, none noted the need to eliminate the extreme isolation of Hāna coast residents.

The Territory of Hawaii Department of Public Works (DPW) was cognizant of the need to improve and maintain the government road (trail) to Hāna, but seemed to lack the resources to properly keep a road in East Maui's less-than-perfect conditions. From 1899 to 1905 several new sections of horse trail were built, and bridges were repaired or replaced. The Territorial 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, there were gaps between the trails, and the infrastructure suffered from storms, floods, and deteriorating wood bridges. Freshets during the winter rainy season sometimes made travel impossible, as in 1902 when mail carriers could not complete their rounds.<sup>10</sup>

The situation improved somewhat after 1905 when the County Act established local governments, and the responsibility for public works



Honomanū Gulch and Falls with truss bridge, circa 1890s. Hawai'i State Archives.

was transferred from the territory to the county boards of supervisors. The territory retained the authority to approve projects and authorize bonds.<sup>11</sup> The Maui County Board of Supervisors (BOS) demonstrated its serious intentions for capital improvements by appointing a county engineer, Hugh Howell, whose experience included working on the preliminary survey for a Hāna road in 1897.<sup>12</sup> As county engineer, he concentrated on replacing failing, high-maintenance truss bridges with simpler, more cost-effective structures built on durable concrete or rock masonry piers. East Maui had 47 bridges in 1908, and documents show that the wood structures demanded constant attention.<sup>13</sup>

Although Maui seemed to be making progress, BOS Chairman William Pogue was not satisfied. In late 1909, he tried to jump-start construction on Maui's belt road (not just the Hāna portion) with a letter that appeared on the front page of *The Maui News*. Pogue pointed out that Maui was ten years behind the other islands in finishing its belt road system and its road was barely halfway around the island. He noted that the meager annual funding for Maui's roads was not productive and urged citizens to lobby the legislature and BOS to support completion of the belt road. Pogue predicted if the BOS continued its policy of piecemeal funding, it would take 15 years to complete the road, that is, if they continued to fund it. Pogue worried that future elections might install new supervisors who would not support the belt road. He believed it was wiser to secure adequate bonds to finish the project, estimating that it could be completed within four years.<sup>14</sup> As such, Pogue notified SPW Marston Campbell that he intended to order surveys for the road and ask the legislature for funding. "What we want is the road," he emphasized, "a good one and in the right location."<sup>15</sup>

Although Pogue failed to convince his fellow citizens, the BOS, and the territorial legislature to complete the belt road within four years, substantial progress was realized. Twenty reinforced-concrete bridges were built on the East Maui government trail between 1908 and 1913, probably in anticipation of future road improvements. The decision to build bridges of concrete rather than wood was a major step forward and followed the SPW's directive to build "permanent" improvements.<sup>16</sup> More progress was made in 1911 when the legislature handed the decision-making authority for public works projects to loan fund commissions on each of the four major islands.<sup>17</sup> The

Maui Loan Fund Commission (MLFC) wasted no time and approved the construction of nine reinforced-concrete bridges in the Hāna District in 1911, awarding the construction contracts to W. R. Patterson of Wailuku.<sup>18</sup> The measure of local input afforded to the MLFC and its decision to build structures of a permanent nature benefitted Maui tremendously and helped pave the way for the eventual completion of a road to Hāna.

In addition to the concrete bridges, further work on the unfinished road between Nāhiku and Ke‘anae, which had been extended by the territory in 1903, was funded by the MLFC in 1912. John H. Wilson of Honolulu, who was the renowned builder of Oahu’s serpentine Pali Road, won the contract. Howell, who was by then working on his own, had also submitted a bid.<sup>19</sup> The day the contract bids were announced, *The Maui News* commented that the belt road could not be finished soon enough, as Hāna residents were complaining about the weekly steamer service, which seemed to inconvenience everyone who relied on it and apparently showed up whenever it pleased rather than on a published schedule.<sup>20</sup> While Wilson was working on the Ke‘anae-Nāhiku extension, the MLFC continued to move forward by approving plans for new bridges. Howell was again appointed county engineer and designed concrete structures for Haipua‘ena and Puohokamoa streams in 1912.<sup>21</sup>

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.” Perhaps as a result of visitors riding the “Famous Ditch Trail,” the argument supporting the need for a road through East Maui shifted from the economic benefits of opening land for agriculture to the financial advantages to be gained from a new industry, tourism. It seemed that Maui finally understood what tourists had long appreciated, that there was “no finer scenery in the Territory than along the north coast of Maui.” As such, the editorial advised that Maui should make completion of a Hāna road a priority.<sup>22</sup>

Wilson’s road near Nāhiku was not yet finished when the MLFC decided that \$135,000 should be spent to extend it a few more miles into Ke‘anae. The BOS informed Governor Pinkham that this road was its only priority; it was not seeking funds for any other project. Pinkham inspected Maui, and after a few months, finally announced he would not approve the road extension. He failed to see the ben-



efits of a scenic road to attract tourists and emphasized that the road had no “utilitarian necessity.”<sup>23</sup> Although *The Maui News* reported that the governor “expressed his disapproval of Maui in various ways” and hinted he was unfairly axing Maui projects, this was not the case as Pinkham had pledged to cut the cost of government. His rejection of Maui’s funding was primarily due to uncertainties in loan markets, which at that time (World War I), were not inclined to accept new bonds.<sup>24</sup> The MLFC was apparently dissolved about 1914 as well, when Pinkham again showed his fiscal conservatism, noting that MLFC goals were “entirely beyond the means of the Territory or County of Maui.”<sup>25</sup>

Despite Pinkham’s rejection of their plan, Mauians continued to develop the idea of building a scenic road to encourage tourism. Concurrent with efforts to construct a Hāna road was Maui’s drive to convince territorial and federal officials that there ought to also be a scenic route to Haleakalā Crater, which was first mentioned circa 1912. In 1914 a *Maui News* editorial, responding to a Chamber of Commerce meeting about scenic roads, touted tourism as “Hawaii’s destiny” and “laden with gold,” and noted that there was little anyone could do to escape it. By 1917, both roads were viewed as attractions to “bait” tourists not just to Maui, but to Hawai‘i. Civic leaders realized that if Maui wanted to “properly care for the ever swelling tide of tourists,” it had to make its attractions accessible. A fresh approach in these arguments was that the infrastructure would benefit the entire territory, thus territorial money should fund these projects.<sup>26</sup>

Wilson’s firm, although plagued by heavy rain, finished its work near Nāhiku in late 1914. This “fine piece of road” benefitted no one since it ended miles from any habitation at the bottom of a gulch in the Ko‘olau Forest Reserve. *The Maui News* noted that the roadway traversed some of Hawai‘i’s most spectacular scenery as it passed along the mountainside a few thousand feet above sea level and close below the ditch trail. The “useless” road also featured a “fine” reinforced-concrete bridge at Kōpili‘ula Gulch. The newspaper reminded readers that the legislature had authorized an additional \$135,000 to take the road into Ke‘anae, but the governor vetoed the funds.<sup>27</sup>

Even though progress on the road stalled, more concrete bridges were built in the Hāna District, with at least five constructed in 1915 and three in 1916.<sup>28</sup> In August 1916, E. C. Mellor, a new Maui con-



tractor, submitted the winning bid of \$6000 (over the Hugh Howell Engineering Company) to replace the 1906 wood bridge at 'Ohe'o Gulch with a new concrete-arch structure. The barrel-arch bridge used the latest in modern technology and dramatically spanned the scenic gorge and waterfalls in Kipahulu.<sup>29</sup>

Pogue's 1909 prediction that the Hāna Belt Road would take years to complete had proven correct. In 1920, Mauians discovered that no



Barrel-arch 'Ohe'o Gulch Bridge, Kipahulu, built in 1916 by Maui contractor E.C. Mellor. Photograph by Dawn Duensing.

funds would be appropriated for the belt road for another two years. Governor McCarthy refused to approve bonds as he believed Maui had not displayed much enthusiasm about the project.<sup>30</sup> Although money was not available, the desired goal continued to be a topic in *The Maui News*. Legislator John Fassoth, a Hāna area resident, wrote several letters to the local newspaper that clearly explained the need for an East Maui belt road. Fassoth wanted a road to Hāna even if it had to be built around the leeward side of Haleakalā via Kaupō. He (incorrectly) reminded readers that Maui was still the only island without a complete belt road. While he emphasized that Hāna was as isolated as if it were on its own island, he also argued that the entire county lost by not having the belt road. Fassoth stressed that businessmen wasted time and money because travel between central Maui and Hāna was slow (i.e. one week) and expensive. Maui County lost because taxes were not realized when land was not fully developed. He emphasized that revenue from tourism was not being collected either, observing that this road would be a “tremendous asset in attracting tourists.” Fassoth stated that Maui should get its bonds, but added the argument that money should come from the federal government since the territory paid substantial federal taxes, but got nothing in return. A *Maui News* editorial agreed with Fassoth’s opinions, especially that it was unfair to keep Hāna coast residents isolated.<sup>31</sup> Although roadwork remained stalled, concrete bridges continued to be erected along the Hāna coast.<sup>32</sup>

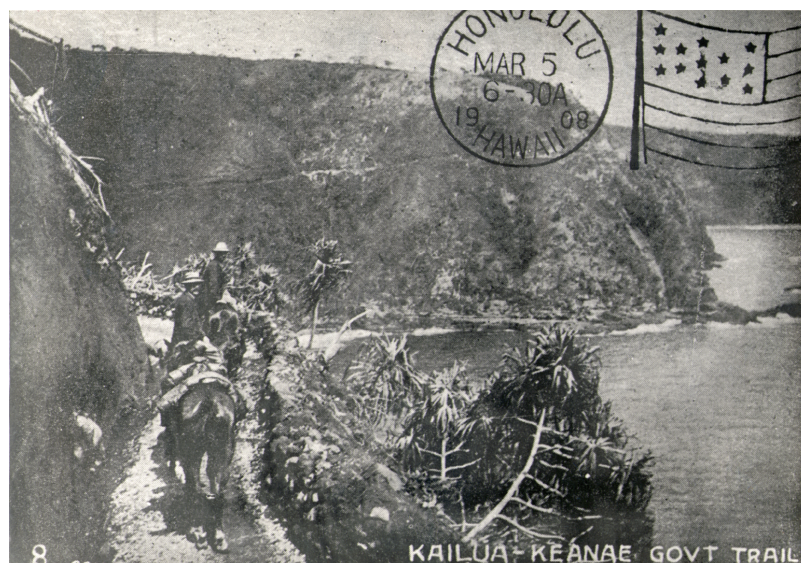
#### REALIZING MAUI’S DREAM

In early 1923 Maui’s civic and business leaders joined forces in one last attempt to obtain a road to Hāna. Together with a new governor, Wallace Farrington, Mauians finally made their dream of a road to Hāna a reality.

In January 1923, County Engineer Paul Low prepared estimates for completing the Hāna Belt Road, compiling his data from previous surveys calculated by former MLFC and county engineers, including Howell. Low reviewed their work, which detailed the alignment, cuts, fills, bridges, and other details. He noted that previous cost estimates, which were likely 15 years old, were useless. For unspecified reasons,

Low divided the work into two projects. The first section was between Kailua and Ke‘anae, a distance of 11.67 miles, and the second from Ke‘anae to Wailua Iki (east of Wailua), a distance of 5.66 miles. His estimated cost for the entire project was \$692,000.<sup>33</sup> Low planned a 16-foot wide “bench” (i.e. roadbed, which in many locations was literally a bench blasted onto the side of a cliff) and a 12-foot wide macadam road. For the Kailua to Ke‘anae section, an immense 273,200 cubic yards of earth would be excavated at an estimated cost of \$204,500. The other significant expense was \$145,000 for macadam pavement on that section of the road.<sup>34</sup>

With Low’s estimates in hand, the BOS, now led by Chairman Sam Kalama, mustered support for the project. In February 1923 plans were presented to the Maui Chamber of Commerce, which had a “Belt Road Committee” chaired by Pogue. The committee endorsed Low’s scheme as well as the authorization of \$300,000 in bonds. Pogue proposed a special tax for the road, reiterating his 1909 concern that if the entire amount was not appropriated at the start of the project, it would continue piecemeal and be subject to dismissal by a future



The Kailua-Ke‘anae Government Trail, circa 1908. Hana Cultural Center.

BOS. While the BOS agreed to the tax, there was disagreement as to how much it should be. All concurred that loan funds should be used to build the roadbed first, then the tax could pay for paving. Pogue also warned the BOS that chamber support was not unanimous. A. F. Tavares, who had an interest in pineapple production in the Hāna area, wanted the road to be built via Kaupō, which would benefit his company, and in his opinion, be a less expensive project. Pogue urged supervisors to settle on the road's alignment, believing that this demonstration of decisiveness would bolster support for the project. Finally, he advised that a committee be designated to personally convince the governor to authorize bonds for the road.<sup>35</sup>

Within days, the BOS announced that Kalama would work with the chamber committee, which would meet with Governor Farrington. To reduce construction costs, the supervisors planned to ask the governor for a workforce of 50 prison laborers. They decided on the windward Hāna coast alignment rather than rerouting the road via Kaupō and agreed on the need to eventually complete the belt road system by extending the thoroughfare around the Kaupō side of Haleakalā.<sup>36</sup>

Maui's leaders carefully avoided repeating the mistake of 1920 when Governor McCarthy denied loan fund requests due to Maui's apparent apathy. One month after the meetings with the chamber, the BOS agreed to purchase a steam shovel and hired 20 men for roadwork near Ke'anae. Low selected a site east of Kailua for a prison labor camp. The supervisors notified the governor of their intention to request bonds in the amount of \$300,000. 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." Even without the promise of funding, the BOS ordered that work commence from both ends of the project. The only thing remaining was for the supervisors and business leaders to agree on whether a special tax would be imposed, as businessmen expressed concern over tax increases and government spending.<sup>37</sup>

By May, plans were in full swing. The BOS ordered Low to prepare the final survey and construction specifications. Kalama, together with the county attorney and Low, met with the governor, the SPW, and other territorial officials in Honolulu. The prison labor camp east of Kailua was ready, and the county planned to purchase a second steam



shovel. In August the BOS officially endorsed Low's plans and specifications for the Kailua to Ke'anae section of the road. SPW Lyman Bigelow inspected and approved the project; Governor Farrington authorized the bonds. The county figured that with three work crews, the road to Hāna could be opened by 1925.<sup>38</sup>

#### BUILDING THE ROAD: KAILUA TO KE'ANAE, 1923–1925

Construction on Maui's long-awaited project apparently proceeded without notice until early 1925, when a short *Maui News* article reported that the two steam shovels, one working from Ke'anae and the other from Kailua, were only three miles apart. Work involved grading and clearing gangs that generally labored immediately ahead of the steam shovels. As expected for the winter season, progress had been delayed due to rain, washouts, and cave-ins.<sup>39</sup>

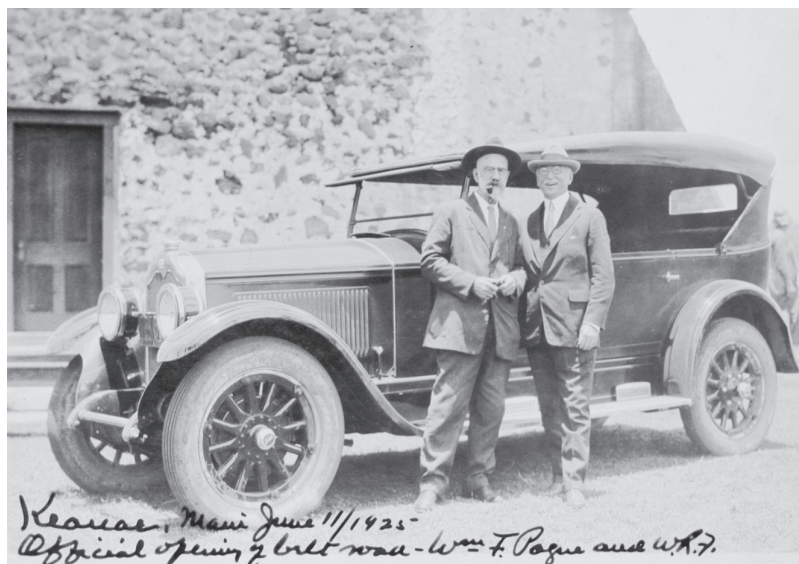
Construction advances generated great excitement in May 1925 when County Supervisor Frank Summerfeld, along with Antonino Garcia and two others, drove to Ke'anae for an update. Although the men intended to park their car near the end of the construction zone and walk out to view the work, by the time they arrived, laborers were about to "break through" and connect the two pieces of road. Too excited to miss the opportunity, they waited until the steam shovels met, then drove their car to the end of the new road. Their small Chevrolet lost its muffler and was covered with mud from its trip over the rough, unfinished track, which took about 45 minutes each way. Garcia reported that there was still much work to do, but that the road would be one of the islands' most scenic driveways when it opened to traffic. Sam Kalama was terribly disappointed to hear of Garcia's joy ride, as he had wanted the governor to be the first to drive the new thoroughfare. The county engineer's department responded to the unauthorized drive by reminding the public that months of hard labor had built the road. To better convey the difficulties of the job, the engineers pointed out that it was only four miles as the crow flies from beginning to end, but 12 miles of winding up and down, in and around the mountains by the new road. Now that the work gangs had connected the two sections, the county expected work to proceed rapidly.<sup>40</sup>

## CELEBRATING IN KE‘ANAE, 11 JUNE 1925

*The Maui News* coverage of the opening of the scenic drive to Ke‘anae highlighted the reasons for building the belt road. First, Pogue and Kalama received credit for the idea of a road through East Maui. In 1895, they had made a rough trip over the government trail to Ke‘anae and consequently discussed the need to extend it. Thirty years later, on Kamehameha Day (11 June) 1925, both men drove the first phase of the new scenic route with Governor Farrington and SPW Bigelow to the opening celebration, leading a procession of more than 100 cars. The governor’s address claimed that the road marked the opening of a new era in Maui’s history. Farrington appreciated 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 of Hawai‘i. He described his journey over the thoroughfare as a “gorgeous spectacle[:] the blue sea in many places hundreds of feet below you, the white surf beating against the shore line and these wonderful green hills, the many gulches and every playing light, shade and color on the sides of beautiful and majestic Haleakalā.” The drive was an exciting journey for Maui residents, who in most cases, had never seen the area. Honomanū Gulch, which had thrilled adventurers on the ditch trail, was the climax of the journey. An extraordinary piece of engineering, the serpentine roadway descended down the side of a steep mountain cliff, through the valley floor, and across several bridges before climbing up another steep cliff to exit the valley. From the high points along the road, motorists could look back across the bay to see what they had traveled across. The byway also drew interest from the U.S. mainland, with *Los Angeles Times* artist O. H. Owens marveling at the landscape features, which included bamboo thickets, mountain apples, and *kukui* trees. As far as Maui’s leaders were concerned, the best news was Farrington’s encouraging remarks that more funding would likely be approved for the Hāna road.<sup>41</sup>

*The Maui News* claimed that there was nothing in Hawai‘i or perhaps in the world quite like the new road, which meandered its way up, down, and around the gulches, each one of them opening up a unique panorama. An editorial noted that the roadway was still rough in many places and in need of widening so that cars could pass each other at any point. These minor discomforts were considered trivial,





Governor Wallace Rider Farrington (right) with William F. Pogue at the opening of the Kailua-Keʻanae section of the Hāna Belt Road, Kamehameha Day, June 11, 1925. Hawaiʻi State Archives.

however, when one considered the tremendous beauty that the route offered. Owens did not mind the rough track; instead he was happy to make slow progress, noting that the privilege of viewing such beautiful nature made drivers forget about the jolts.<sup>42</sup>

#### BUILDING THE ROAD: KEʻANAE TO WAILUA IKI, 1925–1926

Once the road to Keʻanae opened, the primary focus of all future discussions regarding the Hāna Belt Road were the economic benefits to be gained from tourism. *The Maui News* claimed the road was one of Maui's "most valuable assets." The "importance and value of those twelve miles," the writer continued, were "hard to compute in monetary terms." Another *Maui News* commentary made an astute observation when it noted that Maui's scenic roads, including the future Haleakalā Highway, were "commercial" roads because of their value to tourism.<sup>43</sup>

After the Ke‘anae celebration, little time was wasted in commencing construction on the last link of the road to Hāna. Over the next 17 months, *Maui News* articles highlighted the excitement of building the final stretch and provided frequent construction updates. After decades of being a U.S. territory and paying U.S. taxes, Hawai‘i finally became eligible for federal highway aid in 1925. Maui received a substantial boost when President Calvin Coolidge approved a bond issue that included \$150,000 for the Hāna Belt Road.<sup>44</sup>

The final 3.5 miles of construction proved to be some of the most difficult. In November 1925, construction came to a sudden halt when a 20-ton steam shovel “turned turtle” into the gulch. The accident was partially attributed to Sam Kalama, who had a habit of inspecting progress on his “pet” project and trying to hurry it along. He had ordered the laborers to move the shovel to Wailua, where the big machine pulled over to allow a vehicle to pass. The embankment collapsed, and the steam shovel fell into the gulch and came to a rest on its smokestack. To retrieve the machine, workers had to disassemble and reassemble it piece by piece. The steam shovel’s boom was damaged, and the machine was not back in service until January 1926.<sup>45</sup>

In March, Low reported that the steam shovels were not making much progress. Shortly after the Ke‘anae shovel mishap, the Hāna machine broke a gear. Even though machinery problems slowed construction, Low was pleased that manual labor was forging ahead. He had assigned the finishing work on the recently opened Ke‘anae section of road to the prison laborers. Low complimented them for excellent work in top-dressing the road, finishing culverts, building stone walls, and improving bridge approaches. “Paid” crews were busy with new construction, and Low anticipated they would proceed at a slow pace, as much of the work involved cutting through solid rock.<sup>46</sup>

Both steam shovels were again in service a month later, with Low expecting the crew working from the Hāna side to soon cross West Wailua Iki Stream. He noted that crews on both ends of the project were working against solid rock, which required considerable blasting and work by hand. To expedite work, the Hāna crew was divided into three sections, with each group strategically placed so that blasting could be done. To accomplish this job, 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 and fuses that blasted the new roadbed. Only after blasting the rock could the steam shovel begin its job.<sup>47</sup>

Low provided an optimistic update to the supervisors in May 1926, estimating that the road might be ready in time to coincide with the autumn Maui County Fair. 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, 80 in all and none of them prisoners, were blasting their way through hard rock. The work was especially difficult from the Ke‘anae side, where laborers dynamited through the mountains “slowly but surely.” Although Low hoped to build a 20-foot wide roadbed, only 16 feet was being benched into the mountainside, presumably because blasting the rock was such a difficult task. Supervisors quizzed Low about how the scenery along the new stretch of road compared with the Ke‘anae section that had recently opened. Low responded that there was no comparison. In his opinion, the truly beautiful portion of the route was the part 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. He concluded his update by noting that the Hāna Belt Road project was about 60 percent completed.<sup>48</sup>

A week after Low’s discussion with the BOS, he escorted them on a tour of the project site in Wailua Nui Valley, which was the last major piece of work to be done and proved to be one of the most difficult in terms of both engineering and construction. 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 the rock. Their work was complicated by a nearby ditch that watered the Akiona family’s taro *lo‘i* and rice paddies. In order to keep their water flowing, workers dug a temporary ditch before they blasted the cliff. Low was pleased with his crew’s progress and expected to have the steam shovels moving along the new bench soon. SPW Bigelow added to the good news by informing Low that he had approved the plans for the Wailua Nui Bridge.<sup>49</sup>

Elsewhere, workers made excellent progress in May 1926, especially on the West Wailua Iki Bridge, which was designed by Assistant County Engineer A. H. Wong. District Overseer Charles Bailey, who

was reputed to be one of Hawai'i's best bridge builders, was in charge of its construction. Sand and gravel had been delivered to the site, and crews were working on the structure's piers and abutments. Steam shovel crews also made headway. The Hāna shovel moved about 1900 feet during the month and was exiting West Wailua Iki Valley behind the clearing and grading gang. The Ke'anae shovel was in the midst of the high cuts and a rocky stretch on the west side of Wailua Nui Valley. Prison laborers continued putting the finishing touches on the Kailua-Ke'anae road and also removed overhanging boulders from cliffs. May'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 25 year-old worker, Kaonohi Kaiwi.<sup>50</sup>

Work came to a grinding halt early one morning in July, when a landslide in the Wailua Nui area sent tons of rock and dirt into the gulch, trapping the steam shovel. Although Low was probably notified, *The Maui News* reported that Kalama was "jolted" out of bed by a phone call alerting him that his "pet project" was in trouble. He skipped the day's BOS meeting, jumped into his car, and raced to the construction site. Before returning to central Maui, he instructed the project manager to telephone him when the steam shovel was extracted from the mess. Kalama was relieved when the news came later that night that the shovel would soon be back in operation. Progress was impeded by another small slide the next day.<sup>51</sup>

After a year of digging through the mountains and blasting through solid rock from both ends of the project, the steam shovels finally met at 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." The steam shovels would now backtrack, widening portions of the new roadbed as they went. One major project remained to be done, the construction of Wailua Nui Bridge, which had been delayed until the roadbed could be cleared through to the worksite so that materials could be delivered.<sup>52</sup>

In light of the substantial construction gains, *The Maui News* lavished praise on Low and Kalama, noting that Low was supervising one of the finest and most difficult road engineering projects on Maui. Even though the work was not finished, the newspaper credited the young engineer (he was 35) 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 had stayed in office so that he could push the project through to completion.<sup>53</sup>

Moses Akiona of Ke'anae won the bid to build Wailua Nui (Waikani) Bridge and his crews began erecting the structure's framework in August 1926. Designed by Maui architect William D'Esmond with Low, the open-spandrel concrete-arch structure featured two rib arches and was 130-feet long and 90-feet high.<sup>54</sup> The bridge was strategically located for maximum scenic effect in front of Waikani Falls at the end of the mile-long ledge above Wailua that Low had described as "without comparison." Driving along the cliff to 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, waterfalls, and high cliffs.

With the end of work in sight, some Mauians were so restless about the prospects of driving the new thoroughfare that they could not wait for it to open. In August, 30 motorists drove around a locked construction gate to take a Sunday drive over the unfinished road. Kalama was alarmed and concerned about public safety, warning that frequent rainfall made the roadway susceptible to dangerous landslides.<sup>55</sup>

Although Low had hoped to open the road by November, he was instead monitoring Akiona's progress on Wailua Nui Bridge. Crews had finished the forms for the central portion of the superstructure and poured the arch ribs. 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 one week. The county then announced plans to open the road the Saturday before Christmas, 18 December 1926. A *lū'au* for 3,000 people was planned to celebrate the event, with the entire Hāna community expected to greet visitors as they arrived over the new road that would finally unite their village with the rest of Maui.<sup>56</sup>

Despite everyone's best efforts, East Maui's unpredictable weather interfered with the timely completion of Wailua Nui Bridge. The same day that *The Maui News* announced the date of the opening celebration, heavy rains washed out the bridge's formwork and scaffold-

ing. Approximately 600 bags of cement were washed into the stream below, and landslides covered the roadbed near the structure. Low determined that the damage was not too serious and would only cause a few days delay. The major loss was the large quantity of concrete. Even though the formwork for the center arch 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 road's scheduled opening.<sup>57</sup>

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 illustrate that it remained and the bridge was not quite finished.<sup>58</sup>

#### INTRODUCING THE WORLD TO HĀNA

The opening of the long-awaited Hāna Belt Road generated great enthusiasm. The committee in charge of festivities, chaired by Supervisor H. A. Drummond, noted that the new thoroughfare was a milestone in Maui's history. Mauians were confident that more money would be appropriated so that a belt road all the way around Maui would eventually be completed. Of immediate importance was the committee's awareness that their celebration was an opportunity to showcase Hāna, which was expected to begin attracting tourists from around the world.<sup>59</sup>

In early December, committee members traveled to Hāna to meet with their counterparts in that community and finalize plans for opening day. Governor Farrington, who was by then Hawai'i's delegate-elect to the U.S. Congress, was expected to attend the celebration, as were other government dignitaries and tourist bureau officials from Honolulu. A special invitation was extended to William Pogue, who was no longer on the BOS, but considered a "champion of the belt road." Pogue, Farrington, Kalama, Low, and Bailey were designated to ride in the official car. Some discussion centered around who would drive the vehicle, with Kalama wanting the privilege as he had driven the official car when the Ke'ānae section of the road opened. A compromise was reached whereby Kalama would drive to Ke'ānae, and



Low would take the wheel from that point to Hāna. Kalama's role beyond Ke'anae was to serve as a tour guide, pointing out the scenic spots and informing the passengers about the engineering problems that had been encountered along the way. The Maui sheriff's department was also involved in planning efforts. Under the direction of Sheriff Clem Crowell, a schedule was arranged as to when and in which direction automobiles would be permitted to travel the narrow route. They scheduled the road to close in mid-afternoon to allow traffic to return to central Maui. The sheriff's team also established traffic regulations and emphasized that motorists should be certain that their tires and automobiles were in road-worthy condition. Crowell worried that a breakdown would delay the entire procession to Hāna, thus ruining the schedule for the *lu'au* and other activities at the end of the road.<sup>60</sup>

A musical program, other entertainment, and a parade by Hāna's children were organized for the opening day. Governor Farrington would enjoy a fishing expedition, just as he had after the Ke'anae road opening. Hāna's new hotel, built by J. A. Medeiros, was also scheduled to open for the occasion to accommodate those wishing to stay in Hāna. By December, the committee had increased its expected guest list to 5,000.<sup>61</sup>

The Hāna Belt Road opened to the public as planned on 18 December 1926. *The Maui News* published extensive coverage on the opening of Maui's "newest scenic asset." With its typical use of superlatives, the 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 "daredevil exploits." They proclaimed it was the most scenic driveway in the world, with vistas of lofty mountains, the Pacific Ocean, wild canyons, cataracts, waterfalls, and luxurious tropical vegetation. Recapping the history of the road, the paper 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 starting the project in 1909 when the first appropriations were granted for concrete bridges. Over a period of 16 years, the men had secured more than 1.5 million dollars in funding. Equally as impressive, according to the paper, was the story of how they (not the

engineers and construction workers) had overcome Maui's difficult terrain and climate to build a narrow shelf of road over mountains and through the rain forest.<sup>62</sup>

Maui enjoyed a public holiday for the opening, and a grand procession of 200 automobiles traveled over the new drive without incident. Police were posted at strategic locations along the route to direct traffic and assist motorists. "Bad turn" and "go slow" signs marked dangerous curves and other hazards. Scouts were available to assist in the event of a flat tire or car trouble.<sup>63</sup>

The opening festivities were likely the biggest event Hāna had ever witnessed, and the small community pulled it off with great flair. Citizens decorated buildings and hung flags throughout the village. Banners expressing "welcome" and "aloha" were posted in various locations. Villagers served approximately 3,500 *lū'au* guests in the only building large enough to hold such a crowd, the pineapple cannery. The Ka'ahumanu Society, a Hawaiian women's civic club, organized a crafts bazaar that included quilts and feather *lei*. *The Maui News* noted that the entire town, including children in scouting programs, pitched in to make the day a success. The event was a multi-cultural affair, with Hawaiians, Filipinos, and Japanese contributing their time and talents.<sup>64</sup> The guests that day surely exceeded Hāna's population, as census statistics indicated that the entire Hāna District had just 3,100 residents in 1920.<sup>65</sup>

Although Low's 1923 estimates included a macadam surface, the road was not paved when it opened in 1926. Work along the new Hāna Belt Road would continue, including the eventual replacement of the remaining wood bridges with concrete structures, the last of which were built in 1947. The challenges faced during construction would also remain. The night the road opened, rains caused a small landslide, which closed the road to traffic for a few hours the next morning.<sup>66</sup>

#### THE HĀNA BELT ROAD'S SIGNIFICANCE

The Hāna Belt Road has served as one of Maui's premier scenic roads for 80 years. For the most part, the road retains the character that Low intended and admired: it is still benched into a high ledge above

the quaint village of Wailua and takes advantage of endless panoramic opportunities. The road is the best remaining intact example of a historic belt road in Hawai'i, retaining integrity in its original alignment, narrow lanes, one-lane bridges, and spectacular setting along Maui's northeast coast. It features the largest collection of original and stylistically consistent historic bridges in Hawai'i. The Hāna Belt Road was listed on the National Register of Historic Places in 2001 for its significance in Hawai'i's engineering, transportation, commercial, and social history.

The construction of a road to Hāna was a major engineering and transportation achievement, as the County of Maui and private contractors built bridges and benched a road through the challenging topography and climate of East Maui's wilderness. More than 70 bridges and culverts built between 1908 and 1947 remain as examples of engineering and construction methods in Hawai'i during the early 20th century. The concrete structures used the latest technology and reflected the county's commitment to permanent, modern improvements. Some bridges were also significant civic statements, especially Koukou'ai, 'Ohe'o, and Wailua Nui, all concrete-arch structures strategically placed for maximum scenic impact. Other bridges were not quite so grand, but made pleasing visual statements. Two bridges, Hāhālawe and Wai'ele, are rare surviving examples of masonry-arch construction built of cut-basalt blocks, which was common in Hawai'i during the late 1800s. Some of the most notable names in 20th-century Hawai'i public works projects helped build the Hāna Belt Road, including Low, Howell, Wong, D'Esmond, Akiona, and Wilson. Low and Wong also worked on Haleakalā Highway. Howell, Akiona, and Wilson were renowned contractors. D'Esmond designed numerous structures, including the Pā'ia School and the Maui County Building.

Building the Hāna Belt Road was a formidable civic achievement for a small community on a remote island in the Pacific Ocean. It appears that most of the total project cost of 1.5 million dollars was funded by bonds repaid by the Maui community. The only reference found for federal funding was Coolidge's \$150,000 appropriation. It is not clear whether the Territory of Hawai'i contributed money. Although the Territory approved plans and authorized the bonds, most of the time, it seemed remotely connected to the project. Despite Farrington's

enthusiasm, the Territory's apparent lack of involvement was demonstrated in the SPW's annual reports of 1925 and 1926, which failed to mention the completion of the two Hāna Belt Road projects.

The opening of the Hāna Belt Road in 1926 was a transportation milestone that greatly impacted East Maui's social history. The new road ended Hāna's isolation from the rest of the island and eliminated its reliance on the weekly steamer for transportation and communication needs to the outside world. With the new road, the trip between Hāna and central Maui could be made overland on one's own timetable rather than by the schedule of a steamer or guided horse trip. Instead of a round-trip journey of a week, travel time was shortened to 3.5 hours one way.<sup>67</sup>

The Hāna Belt Road helped open East Maui to settlement. The extent of economic (i.e. agricultural) development predicted by *The Maui News* never happened, although many homes and small farms were built along the route after land became accessible. Agriculture was important, but was overshadowed by the success of tourism, which developed beyond the wildest dreams of the road's original promoters. Maui's use of scenic "commercial" roads to develop a tourist industry received another tremendous boost when Haleakalā Highway opened in 1935. These two roads were Maui's crowning achievements in 20th-century transportation projects and helped pave the way for Maui's tourist industry.

The Hāna Belt Road transports motorists through a cultural landscape that is relatively unchanged since 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'ānae and Wailua are still checkered with taro *lo'i*, country churches, and in Ke'ānae, 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 are 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 lack of road improvements over the past 80 years has not only preserved the historic integrity of the Hāna Belt Road, but has also

helped to maintain the character of the Hāna District. The absence of an easily traveled, high-speed traffic artery has served to impede substantial development, which has subsequently allowed Hāna and other East Maui communities to retain their rural nature. Although there has been development pressure, Hāna has successfully resisted the fast food chains, strip malls, golf courses, and 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 provides an opportunity to experience a way of life that is uniquely Hawaiian and becoming more rare in the Hawaiian Islands. One Hāna resident eloquently summarized the value of preserving the narrow, winding, and slow Hāna Belt Road:

Part of the uniqueness of the Hāna Highway are the quaint, picturesque, one-lane bridges. These cause travelers to pause, reflect, and take in the beauty and be courteous before continuing on one’s way. . . . The adventure of Hāna is not only the tour, but the adventure of the highway. Should we begin straightening the road and broadening the bridges, soon the journey would be easy and the adventure and seclusion of Hāna gone.<sup>68</sup>

## NOTES

- <sup>1</sup> Henry M. Whitney, “Around East Maui,” *PCA*, 4 Sept. 1869: 3.
- <sup>2</sup> George Bowser, “Touring the Valley Isle Nearly Fifty Years Ago,” *The Maui News*, 4 Dec. 1926: Sec. 7, 7.
- <sup>3</sup> Spencer Mason Architects, *State of Hawaii Historic Bridge Inventory and Evaluation*. Prepared for the State of Hawaii Department of Transportation Highways Division. (Honolulu, 1996) IV–12, Hawai‘i Department of Transportation (HDOT) files.
- <sup>4</sup> A. J. Wurts, “Haleakala and the Ditch Country,” *The Mid Pacific*, vol. XI no. 5 (1916): 441–445.
- <sup>5</sup> Hugh Howell, compiler, “Island of Maui, Territory of Hawaii” (Honolulu: Hawaii Promotion Committee, 1915), University of Hawai‘i, Hamilton Library, Map Collection.
- <sup>6</sup> “Around About Nahiku,” *The Mid Pacific*, vol. IX no. 2 (1915): 168; Jack Walker, “From Kaupo to Keanae,” *The Mid Pacific*, vol. IX no. 4 (1915): 337.



- <sup>7</sup> Jack London, "A Maui Wonderland," *The Mid Pacific*, vol. X no. 3 (1915): 241–243.
- <sup>8</sup> *The Maui News*, editorial, 28 June 1902: 2; *The Maui News*, editorial, 15 Nov. 1902: 2; *The Maui News*, editorial, 27 Dec. 1902: 2.
- <sup>9</sup> *The Maui News*, editorial, 7 March 1903: 2; *The Maui News*, editorial, 25 Apr. 1903: 2.
- <sup>10</sup> Territory of Hawaii, *Annual Report of the Superintendent of Public Works*, 1900, 45, 227; 1902, 33, 39, 47, 55; 1904, 6–7, 40, AH. Hereafter cited as *SPW Report*.
- <sup>11</sup> *SPW Report*, 1906, 4–5; *SPW Report*, 1904, 40, AH.
- <sup>12</sup> "Board of Supervisors Hold Meeting," *The Maui News*, 6 Jan. 1906: 1; J.H. Boyd letter to Hugh Howell, 9 Nov. 1897, AH.
- <sup>13</sup> "Supervisors Authorize Improvements," *The Maui News*, 7 Apr. 1906: 1; "Report of the Superintendent of Public Roads," *The Maui News*, 11 Jan. 1908: 2.
- <sup>14</sup> "Advocates Belt Road," *The Maui News*, 6 Nov. 1909: 1.
- <sup>15</sup> William F. Pogue letter to Superintendent of Public Works Marston Campbell, 29 Dec. 1909, AH.
- <sup>16</sup> *SPW Report*, 1904, 4–5, AH.
- <sup>17</sup> Hugh Howell, Minutes of Meeting of the Maui Loan Fund Commission, 6 May 1911; J. W. Caldwell, "Roads in the Hawaiian Islands," 7 March 1911, AH.
- <sup>18</sup> Maui Loan Fund Commission, Notice for Sealed Tenders, *The Maui News*, 15 July 1911: 3; "Disgruntled Contractors," *The Maui News*, 12 Aug. 1911: 1; Bridge Inspection Reports, HDOT files.
- <sup>19</sup> William F. Pogue letter to Governor W. F. Frear, 25 Nov. 1912, AH; "Belt Road Bids Opened," *The Maui News*, 5 Oct. 1912: 1.
- <sup>20</sup> "Hana Is Mad Re Claudine," *The Maui News*, 5 Oct. 1912: 5; "Hana Is Mad Right Along," *The Maui News*, 9 Nov. 1912: 1.
- <sup>21</sup> Haipua'ena Bridge drawing, HDOT files. Although there is no drawing of Puohokamoa Bridge, it is nearly identical to the Haipua'ena plan, which bears Howell's signature.
- <sup>22</sup> "The Key to Progress," editorial, *The Maui News*, 16 May 1914: 2.
- <sup>23</sup> "Belt Road Or Nothing Says Board," *The Maui News*, 20 June 1914: 1; "Let's Have the Belt Road Money," *The Maui News*, editorial, 20 June 1914: 2; "No Keanae Highway Says Governor," *The Maui News*, 18 July 1914: 6.
- <sup>24</sup> "No Keanae Highway Says Governor," *The Maui News*, 18 July 1914: 6; Pinkham letter to Maui Loan Fund Commission, 12 May 1914, AH.
- <sup>25</sup> Pinkham letter to Superintendent of Public Works Charles R. Forbes, 20 Oct. 1914; "Road Pau on Nahiku Part Belt Road," *The Maui News*, 14 Nov. 1914: 1.
- <sup>26</sup> "Hawaii's Destiny," editorial, *The Maui News*, 26 July 1914: 2; "Kauai and the Territorial Roads Plan," editorial, *The Maui News*, 16 Feb. 1917: 4.
- <sup>27</sup> "Road Pau on Nahiku Part Belt Road," *The Maui News*, 14 Nov. 1914: 8; "Fine Bridge On Useless Road," *The Maui News*, 25 July 1914: 6.
- <sup>28</sup> Bridge Inspection Reports, HDOT files.
- <sup>29</sup> "New Contractor Lands Oheo Bridge Contract," *The Maui News*, 25 Aug. 1916: 6; Joel B. Cox, "Report of the Work of the Maui Loan Fund Commission for the Year Ending June 20, 1917," AH.

- <sup>30</sup> "No Money For Belt Road For Two Years," *The Maui News*, 7 May 1920: 1.
- <sup>31</sup> "Roads First Need View Of Fassoth," *The Maui News*, 2 Feb. 1921: 1; "Connect Maui Up," editorial, *The Maui News*, 11 Feb. 1921: 4.
- <sup>32</sup> Bridge Inspection Reports at HDOT indicate that two bridges were built in 1917, five in 1920, two in 1921, and one in 1922.
- <sup>33</sup> "Estimate Made Belt Road Cost By Way Kailua," *The Maui News*, 13 Jan. 1923: 1.
- <sup>34</sup> A.P. Low, "Report to the Board of Supervisors for the Month of December 1922," 11 Jan. 1923, AH; "Itemized Costs Proposed Belt Road Presented," *The Maui News*, 19 Jan. 1923: 1.
- <sup>35</sup> "Supervisors and Committee Agree As To Belt Road," *The Maui News*, 8 Feb. 1923: 1.
- <sup>36</sup> "Belt Road Plans Further Advanced," *The Maui News*, 10 Feb. 1923: 1.
- <sup>37</sup> "Belt Road Work Will Be Started By Maui County," *The Maui News*, 10 March 1923: 1.
- <sup>38</sup> "Belt Road Project Is To Go Forward At Once," *The Maui News*, May 25, 1923: 1; "Bids for Belt Road Work Asked," *The Maui News*, 14 Aug. 1923: 1.
- <sup>39</sup> "Progress Of Belt Road Work Reported," *The Maui News*, 14 Feb. 1925: 1.
- <sup>40</sup> "First Car Runs Over Belt Road Kailua-Keanae," *The Maui News*, 23 May 1925: 1; "Formal Opening Belt Road To Be Kamehameha Day," *The Maui News*, 27 May 1925: 1.
- <sup>41</sup> "Hundreds Motor to Keanae," *The Maui News*, 13 June 1925: 1; "Wonder And Charm Of Maui Scenery To Be Pictured And Told Hundreds Of Thousands Readers On Mainland," *The Maui News*, 15 Aug. 1925: 1; "Maui Will Share New Loan Fund Governor Thinks," *The Maui News*, 13 June 1925: 1.
- <sup>42</sup> "Hundreds Motor to Keanae," *The Maui News*, 13 June 1925: 1; "Maui's New Road," editorial, *The Maui News*, 17 June 1925: 4; "Wonder and Charm of Maui Scenery," *The Maui News*, 15 Aug. 1925: 2.
- <sup>43</sup> "Maui's New Road," editorial, *The Maui News*, 17 June 1925: 4; "A Road to the Summit," *The Maui News*, 13 June 1925: 4.
- <sup>44</sup> *SPW Report*, 1925, 13–14, AH; "Coolidge Approves Proposed \$2,590,000 Hawaii Bond Issue," *The Maui News*, 22 Aug. 1925: 1.
- <sup>45</sup> "Embankment Cave In, Steam Shovel Turns Turtle Into Gulch," *The Maui News*, 25 Nov. 1925: 1; "Steam Shovel Back and Working Again," *The Maui News*, 9 Jan. 1926: 1.
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- <sup>47</sup> "Builders Progress In Construction of Belt Road Project," *The Maui News*, 17 April 1926: 7; "Magnificent Scenery Unfolds Before Eyes of Travelers On Motor Trip Over New Road Leading to Hana," *The Maui News*, 22 Dec. 1926: 1, 8.
- <sup>48</sup> "Keanae-Wailua Link Belt Road Ready In Fall," *The Maui News*, 8 May 1926: 1.
- <sup>49</sup> "Workers Blast Tons Of Rock On Belt Road," *The Maui News*, 15 May 1926: 1. Wailua Nui Bridge is the structure's historic name, as noted on 1926 bridge plans at HDOT. It is unclear when the bridge became commonly known as "Waikani," which refers to the name of the adjacent waterfall.

- <sup>50</sup> "Substantial Gain Made On Belt Road During Past Month," *The Maui News*, 12 June 1926: 1; "Belt Road Worker Killed in Blast," *The Maui News*, 29 May 1926: 1.
- <sup>51</sup> "Land Slide Halts Progress of Work On Maui Belt Road," *The Maui News*, 10 July 1926: 1.
- <sup>52</sup> "Steam Shovels Meet Next Week," *The Maui News*, 31 July 1926: 1; "Shovels Finish Belt Road Work," *The Maui News*, 11 Aug. 1926: 1.
- <sup>53</sup> "Steam Shovels Meet Next Week," *The Maui News*, 31 July 1926: 1; L. C. Newton, *Who's Who in the Counties of Maui and Kauai*, T. H. (Wailuku: Maui Publishing Co., Ltd., 1939) 65.
- <sup>54</sup> "Shovels Finish Belt Road Work," *The Maui News*, 11 Aug. 1926: 1; Wailua Nui Bridge Plans, 1926, HDOT files.
- <sup>55</sup> "Shovels Finish Belt Road Work," *The Maui News*, 11 Aug. 1926: 1.
- <sup>56</sup> "Road Linking Hana With Rest Of Maui Will Be Opened Officially December 18, With Celebration," *The Maui News*, 13 Nov. 1926: 1.
- <sup>57</sup> "Flood Threatens Belt Road Bridge," *The Maui News*, 17 Nov. 1926: 1.
- <sup>58</sup> Photograph of Wailua Nui Bridge, 18 Dec 1926, AH; "Final Touches Given Program For Opening of Hana Belt Road," *The Maui News*, 11 Dec. 1926: 1.
- <sup>59</sup> "Houston and Farrington Will Be Here," *The Maui News*, 4 Dec. 1926: 1; "Hana Prepares For Reception Of Farrington," *The Maui News*, 8 Dec. 1926: 1.
- <sup>60</sup> "Houston and Farrington Will Be Here," *The Maui News*, 4 Dec. 1926: 1; "Hana Prepares For Reception Of Farrington," *The Maui News*, 8 Dec. 1926: 1.
- <sup>61</sup> "Final Touches Given Program For Opening of Hana Belt Road," *The Maui News*, 11 Dec. 1926: 1; "Governor Looks Forward To His Drive To Hana," *The Maui News*, 15 Dec. 1926: 1.
- <sup>62</sup> "Linking Up Maui," editorial, *The Maui News*, 18 Dec. 1926:3; "Farrington Will Open Road Today, Marks Epoch in Progress Of Maui County," *The Maui News*, 18 Dec. 1926: 1; "Magnificent Scenery Unfolds Before Eyes of Travelers," *The Maui News*, 22 Dec. 1926: 1, 8; "Hana Prepares For Biggest Day," *The Maui News*, 22 Dec. 1926: 1. Although *The Maui News* stated that the first concrete bridge appropriations were 1909, HDOT records indicate that Mokulehua Bridge was built in 1908.
- <sup>63</sup> "Celebration Typical of Maui," editorial, *The Maui News*, 22 Dec. 1926, 3.
- <sup>64</sup> "Hana Prepares For Biggest Day," *The Maui News*, 22 Dec. 1926: 1.
- <sup>65</sup> Robert C. Schmitt, *Historical Statistics of Hawaii* (Honolulu: UP of Hawai'i, 1977) 13.
- <sup>66</sup> "Magnificent Scenery Unfolds Before Eyes of Travelers," *The Maui News*, 22 Dec. 1926: 8.
- <sup>67</sup> "Linking Up Maui," *The Maui News*, editorial, December 18, 1926: 3; "Maui Takes Day Off for Road Opening," *The Maui News*, 22 Dec. 1926: 1.
- <sup>68</sup> County of Maui, Cultural Resources Commission, Regular Meeting Minutes, Draft, 5 Aug. 1999, testimony of Doris Buckley, 70–71, Maui County Planning Department.