



Witness Statement of Rayne Regush

February 10, 2021

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2
3 Q. Please state your name and place of residence.

4 A. My name is Rayne Regush. I am a resident of Kauai County. I have lived on Kauai's east side for
5 22 years. Please refer to my biographical sheet which will give you a sense of the extensive
6 community volunteer work I've been involved in and is attached to this testimony. My home is
approximately 2.5 miles from the HoKua Place property. On my day-to-day commute to work since
2012, I drive past the proposed project along Oloheua Road and on the Bypass Road.

7 Q. Please describe the ways that your testimony is relevant to decision-making on the HoKua Place
8 petition to redistrict agricultural lands into the urban district.

9 A. My testimony speaks to the community impacts of the proposed redistricting. I have served as
10 Chairperson for the Wailua-Kapaa Neighborhood Association (W-KNA) since 2007. The Kawaihau
11 District, where the HoKua Place development is proposed to be located, has the largest
12 concentration of residents on Kaua'i and W-KNA was founded to enhance opportunities for
13 resident participation in community issues. At that time, many felt that the island was threatened by
over-development. It was clear that the recommended Implementing Actions in the County's
General Plan 2000 were, for the most part, were not being acted on. W-KNA provided a venue for
citizen participation and meetings with developers to exchange information and opinions. We thank
the County Planning Department for directing developers to W-KNA early-on for consultation.

14
15 Q. What is the Wailua-Kapaa Neighborhood Association's interest in these proceedings?

16 A. The W-KNA Board understands that appropriate land use is the basis for managing urban
17 growth, protecting quality of life and preserving the rural character of East Kaua'i. We submitted
18 our letter of intent to intervene in the Kapa'a Highlands' Petition for a Boundary Amendment filed
19 by Petitioner Three Stooges, LLC on April 14, 2011. Our intention was also to help ensure that the
proposed project would be examined with broad community input. We believe this is important
because of the inherent bias in an EIS whereby impacts can be glossed over, misstated or omitted.

20 W-KNA invited the project's representative, Greg Allen, to be a guest speaker at our public
21 meeting on Sat. October 22, 2011 – there were 55 attendees. Two years later, we hosted Mr. Allen
22 on December 27, 2014. At that time, the 30-day Public Consultation period for comments on the
EISP were due by January 22, 2015. There were 40 attendees. At both meetings, the majority of
23 residents attending were opposed to the project. Exh. I-19 (Regush presentation, including W-KNA
24 Press Packet, Oct. 2011). Concerns were mostly about traffic congestion, loss of agricultural lands
and open space, and general poor planning. Our concerns have not been alleviated over the years,
however due to the complexity involved in contested case participation, we determined to withdraw
our petition.

25 Fortunately, Liko Martin was able to intervene. W-KNA is lending support to Martin to
26 help establish that Kapaa's infrastructure is not ready for this high density project at this time, in this
27 location. The stressors of traffic congestion along with limited groundwater resources, inadequate
solid waste disposal, aging sewer lines and anticipated storm water runoff, will create an undue
burden on community welfare.

28 Q. Please describe your familiarity with the proposed HoKua Place development?

EXHIBIT "I-18"

1 A. I am the W-KNA Chair and we participated in all community consultation processes for the
2 project. The first Draft EIS was released in 2015, and subsequently, a number of re-worked
3 versions were circulated. Ultimately, the Final Environmental Impact Statement (FEIS) was jumbled
4 together from exhibits dating back to 2006, 2011, July 2014 DEA, Nov. 2014 EISPN, April 2015
5 DEIS, March 2018 DEIS, and the Oct 2018 2nd DEIS.

6 The Final EIS was a patchwork of outdated information, inconsistencies, and omissions
7 which caused deep confusion for the public as well as the reviewing agencies. In December 2019
8 the LUC accepted a less than adequate EIS noting that it barely met the requirements, and I
9 understand the Commissioners at that time encouraged the community to bring their concerns to
10 the Boundary Amendment hearing.

11 Q. Please discuss the ways that the proposed redistricting of agricultural land for HoKua Place
12 relates to the current 2018 Kaua'i General Plan?

13 A. As noted in the 2018 Kaua'i General Plan, the rezoning of lands for the former Kapa'a
14 Highlands project generated a lot of controversy and these difficulties relate back to issues with the
15 previous 2000 General Plan. Many East Kaua'i residents held a lot of hope that the General Plan
16 2000 would "preserve rural character" and withstand the pressure of development. But, by 2005
17 Kaua'i was in crisis and the recommended Implementing Actions in the County's General Plan 2000
18 were, for the most part, not materializing. During the next General Plan update, I attended the
19 public workshops, numerous Citizen Advisory Committee meetings, and submitted testimony and
20 edits to the Plan. Despite a colossal effort by staff and many consultants, the Plan remained
21 deficient. People commented that "it is a Large Landowner General Plan" because it seeks to
22 "accommodate" growth rather than manage it, despite the inability of infrastructure to keep up. In
23 regard to water distribution infrastructure, the draft East Kaua'i Development Plan 2030 notes:

24 The old and undersized water pipelines are not adequate to maintain the current level of
25 service in Kapa'a, Kapa'a Homesteads and Wailua Homesteads. Some pipes were installed
26 before 1930; the Wailua Homesteads water main was installed in 1937 and the Kawaihau
27 Road cast iron main was installed in 1945.

28 Exh. I-28 (section 8.2.4.3 "Aging Distribution Lines.").

The 2018 General Plan continues to over-reach in its up-zoning recommendations. It has
essentially hijacked what community plans are intended to do – that is, to secure resident buy-in for
any proposed up-zoning. East Kaua'i has not had the benefit of a detailed community plan since
1973! HoKua Place is not consistent with 2018 General Plan objectives of locating housing near job
center. Objective #7 states: "To encourage the development of Lihu'e as Kaua'i's primary urban
center." And, "Lihu'e is widely seen as the appropriate urban center for the island." (Exh. I-26
General Plan 2018, Section 2.1 Future Land Use, pages 51 & 53).

In the 2018 General Plan on page 462 (Appendix H–Entitled Projects) HoKua Place
erroneously is listed as an "entitled residential project" of 769 housing units. The project is not
"entitled" because it only has "neighborhood general" zoning, which provides the opportunity to
apply for a use, but is not an entitlement. Zoning determines what can be built on particular lands,
whereas entitlement is the approval granted by the county after a hearing process that considers a
host of variables such as traffic impacts, environmental risk, and community responses to a potential
development.

The county's recommendation that Hokua Place be designated Urban was a very
controversial one. The General Plan Department Draft January 2017 indicated the contrary, stating:
"Given the community sentiment after these map alternatives were presented publicly, the land use
maps have been adjusted to reflect the second alternative, in which the Hokua Place site is assigned

1 an Agriculture land use designation rather than Urban Center. The community comments received
2 on the General Plan Discussion Draft support this direction.”

3 It is unclear why HoKua Place was not proposed as a rural development. Minimum half-acre
4 lots would certainly blend better with the surrounding density of the Agricultural District parcels.
5 This alternative was not presented in the FEIS.

6 Q. Is the project consistent with the 2018 Kauaʻi General Plan’s health and resilience goal under the
7 transportation sector, which is to: “Provide connectivity and safe routes to walk or bike to parks and
8 schools”?

9 A. No. The 2018 General Plan defines a walkshed as “a quarter- to a half-mile radius walking
10 distance or a comfortable walking distance between locations.” However, to access the retail stores,
11 restaurants, parks and other services located in the Kapaʻa town core, there is no plan that allows
12 pedestrians and cyclists to travel there safely. Crossing the Bypass Road or the Kapaʻa Roundabout
13 to reach the Kapaʻa town core is a significant obstacle and deterrent to walkability and safe routes.
14 All of the roadways immediately surrounding Hokua Place (Kaapuni Road, Kaehulua Road,
15 Oloheua Road mauka of the Middle School) lack sidewalks, forcing pedestrians and cyclists to travel
16 in the roadway or along dangerous shoulders. The roadways are too narrow for bike lanes and offer
17 no separation from fast moving traffic. In other words, the neighborhood is rural.

18 Q. Does the proposed development conform to the draft East Kauai Community Development
19 Plan?

20 A. No. And to clarify my involvement in the East Kauaʻi Community Development Plan - in 2006,
21 I was invited to serve on the Citizen’s Advisory Committee for the East Kauai Community Plan
22 update. This was a real privilege because an update of the **1973 Kapaa-Wailua Development Plan**
23 was long overdue. Committee members were tasked to provide input on how our neighborhoods
24 should evolve considering the needs of residents and the need to manage growth. Since the plan
25 would create a road map for the future, infrastructure needs would be assessed along with other and
26 critical components in light of the growing resident and tourist population.

27 **Chapter 8-Infrastructure** in the Draft Plan (August 2014) states: “The vast majority of East Kauaʻi
28 is served by Individual Wastewater Systems (IWS), such as cesspools and septic tanks. IWSs are
common in areas with low and moderate residential densities...” It also states: “The Wailua
Wastewater Treatment Plant needs to be expanded in the near future. In addition, a new wastewater
treatment facility, serving Kapaʻa, is needed by 2025.” (Section 8.1.1 Individual Wastewater Systems
and Section 4.1.7 Item (B) Public Facilities).

Chapter 4-Preferred Growth Scenario (Draft Plan) states in Section 4.4.1 Implement Priority
Capital Improvement Projects to Support the Preferred Growth Scenario: Item (B) Provide
Adequate Water Supply for Future Growth: The Water Master Plan for East Kauai should give
priority to expanding the supply, storage and transmission of water to the expanded Urban Center,
rather than outlying agricultural areas.” Item (C) Expand Wastewater Treatment Capacity: All new
development in the Urban Center should connect to the County sewer system. This will require
both the expansion of the Wailua Wastewater Treatment Facility and the development of a future
wastewater treatment facility to serve Wailua-Kapaa.

The final Citizen’s Advisory Committee Meeting was held January 22, 2016 to formally
terminate the project, a decade after its inception. This was very disappointing, and for various
reasons, the Draft Plan was never introduced at the County Council. Nonetheless, the draft
document, much of it facilitated and compiled by Nadine Nakamura of NK Planning & Assoc., is
informative.

Without a “development plan”, as provided for in the Kauaʻi County Charter, there is no
detailed framework to implement the 2018 General Plan recommendations for East Kauaʻi. This

fact creates a huge disparity and to proceed in favor of the general plan's "Neighborhood General" recommendation in spite of no community plan, is faulty reasoning in my opinion.

The 2018 General Plan states: "Henceforth when Community Plans are developed and adopted, each Community Plan shall establish an Urban Edge Boundary to delineate the extent of future town expansion. In the process of identifying a boundary, the Planning Department shall conduct a buildout analysis of the existing urban footprint and use the principles of smart growth to ensure that there is enough room within the boundary for growth desired by the community in a pattern that will make efficient use of scarce resources." (General Plan 2018, Chapter 2.0 Future Land Use, page 61). So I ask you: how do we reconcile this mandate based on a 1973 East Kauai Community Plan?

Q. Is the project consistent with the 2018 Kaua'i General Plan goal to "Accommodate East Kaua'i's projected housing needs" by, amongst other things, ensuring its build-out is coordinated with the implementation of priority projects in the 2015 Kapa'a Transportation Solutions Plan?

A. No. As background, I served on the State Department of Transportation's (DOT) Citizens Advisory Committee for the Study from July 2014 until August 2015 when the report was published. We all left with high hopes for the implementation of the priority projects – Group A to be implemented within 5 years, and Group B to be implemented within 5 to 10-years. But, these transportation improvements have not occurred. Representative Nadine Nakamura (State House District 14) reached out to me about re-convening the study participants to assist in moving the priority solutions forward. However, according to the Hawai'i Statewide Transportation Improvement Program (STIP) report, which provides a multi-year listing of state and county projects, implementation of these Kaua'i projects is unlikely to happen within ten years.

One example in the study relevant to areas near HoKua Place is the Kuhio Highway Widening Project (Group A: Project #27) which adds an additional southbound lane along the Highway between the Bypass Road south terminus and Kuamoo Road. According the 2015 "Kapaa Transportation Solutions" report it "has been funded and is currently in design" but unfortunately, a multitude of anticipated completion dates have since passed by.

Also at the Kuhio Highway south terminus of the Bypass Road, the queue of vehicles longer than their turn-lane storage length has been a long-standing problem. Drivers experience long delays during morning and afternoon peak hours and also on weekends. This also affects the reliability of the public transit system in the Kapaa area.

The timing of Hokua Place is not in sync with projected short-term roadway improvements. For the past two decades, growth in Kapaa has caused serious traffic circulation and congestion problems. Kuhio Highway, the main artery through Kapa'a, is located less than one-half mile from Hokua Place. It is the critical thoroughfare and the only route for regional access southbound to the airport and Lihue, and to Kauai's northshore. There is a critical urgency to address traffic needs before increasing large-scale residential density in Kapa'a.

In September 2005, the feature story on the cover of Hawai'i Business Magazine was "Kaua'i In Crisis-Mayor Bryan Baptiste deals with a garden of gridlock." Exhibit I-20. This in-depth article described roads being maxed beyond capacity, and an overwhelming amount of development projects on the horizon, and no detailed assessment of whether Kauai's roads can handle the additional capacity. It appears that not much has changed since then, and political will, or the lack of it, is part of the challenge.

The 1997 *Kaua'i Long-Range Land Transportation Implementation* Plan has not met its 2000 and 2006 deadlines for Kapaa roadway widening in areas affected by the proposed boundary change. The recommendations in the 2035 *Transportation Plan for the Kauai District* (July 2014) have not been implemented. Until roadway solutions are put in place, the proposed density of Hokua Place will compound the unacceptable transportation problems.

The critical traffic issue concerning the HoKua project is that the negative impacts occur outside of, or adjacent to, the immediate study area where the Petitioner's consultants focused. HoKua Place represents a dramatic increase in housing for East Kaua'i and once occupied, it will contribute significantly to regional and local traffic. And there are no recent letters in the FEIS from county agencies concluding that the project will not impact first-responders such as firemen, police, paramedics or ambulance transport of critically ill patients.

Q. Do you have any comments about the TIAR and what it failed to address?

A. Yes. First, the TIAR appears to use ITE LU (land use) Code 210 (single-family detached) for the project, not multifamily dwelling units. That translates to a significant underestimation of the actual trip generation impacts. Second, that much traffic could potentially necessitate multi-lanes for the Bypass Road which would be undesirable and inconsistent with the rural character of the area. Third, the TIAR itself is patently incomprehensible and the developer should be required to prepare data and graphics that clearly show the traffic impacts of the project in a manner that can be read and understood by both the LUC and the general public.

The Petitioner's TIAR analysis indicates that the current Level of Service (LOS) is "F" which represents congested conditions with high delays and long queues. Even with the addition of "Road A" which will transect Hokua Place, connecting Olohena Road (next to the Middle School) to the Bypass Road (opposite the Calvary Church entrance), the ranking remains a dire "F". I am unaware of any commitment by the Applicant to partner with the county to analyze, design or construct (1) a roundabout or a 4-way intersection alternative where Olohena, Ka'apuni, Keahulua Roads and HoKua Place "Road A" could meet. (2) I understand that the County has recommended a left turn storage lane from the northbound Kapaa Bypass into "Road A" and a right turn lane into "Road A" when traveling southbound on the Bypass. But little to no information was provided by the Petitioner to indicate how the Bypass Road will accommodate these turn lanes.

Q. Are the lands subject to the petition characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses - either before or after HoKua place is built?

A. No, the proposed development is an out-of-character imposition on the landscape and is certainly not an example of sustainable development. The mixed use elements are very minimal. Unless the 1.4 acre commercial space is specifically designated to include a food/market element, residents will always be forced to go offsite for that necessity.

Even if the project conforms with "Complete Streets" standards or utilizes multimodal design (not "multi-model" – a term repeatedly used by the Petitioner) Hokua Place provides no options for pedestrians and cyclists to safely reach the town core, or safely cross the Bypass Road. The proposed Walking/Bike Path shown in the conceptual plan is so poorly rendered that it is unclear whether it is located at the base of the hillside along the Bypass Road or above it.

Q. You have mentioned that Hokua Place is on a hillside – does that raise concerns for you?

A. Yes. If you refer to the elevation contour lines on Topographic Map (Exhibits I-101, I-102) there is a progression from 50 feet, to 75, to 100, and to 125 ft elevation. The percent slopes are also clearly marked on the USDA Soils Map (Exhibit I-33). The Conceptual Plan shows the majority of the multi-family housing units situated along the area with the most closely spaced contour lines, meaning the steepest slope.

There are considerable drawbacks to building on slopes – increased expense and drainage challenges to re-direct water flow away from foundations. Excavation



1 costs can be six times more expensive depending on many factors such as grade, rock, and access.
2 The foundation will require much more concrete and cost up to three times more. From what I
3 observe, the project Conceptual Plan maps did not factor in the topography at all, and their casual
4 lip-service to use the required BMPs is not enough.

5 A good project would embrace the systems and practices of “Low Impact Development”
6 (LID) also referred to as “Green Infrastructure” for the management of storm water and the
7 abundant rainwater flows. These practices lessen the impact on the environment and closely match
8 the natural hydrology of the developed site. This preserves the physical and biological integrity of
9 the streams and water bodies that receive the runoff.

10 The project will require a completely new drainage system to serve over 700 residences.
11 Increased impervious surfaces, associated structures, and ground cover reduction have a huge
12 impact on runoff and drainage. The project’s Preliminary Engineering Report Drainage
13 Improvements is a cursory, uninformative narrative of few words that avoids the real need to assess
14 and mitigate drainage issues. Here is the crux of the report:

15 “Stormwater generated from each of the Phase II lots will be directed to the nearest
16 downstream street or natural drainageway. A drainage system along the streets will collect
17 the stormwater and convey it to the detention basins shown on Exhibit 1. The detentions
18 basins moderate the storm flows and allow infiltration back into the soil. They are sized so
19 that the outlet peaks flows match or lower the existing stormwater flows prior to the
20 development for both small rainfall events and the 100 year storm event.”

21 The “detention basins” colored in blue on the topo map (Exh. I-02, FEIS Vol. I, at 93) are in fact,
22 existing gulches. Channelling additional flow through these gulches, and how it will impacts the
23 Waikaea Drainage Canal and adjacent Waikaea/Kainahola Stream have not been addressed. One
24 important question to ask now is whether there is current overloading of the Waikaea Canal and
25 drainage basin.

26 The function of the detention basin is only to hold the increased flows so that the peak flow
27 does not increase. A drainage detention basin does not reduce the increased drainage flows caused
28 by the subdivision’s new impervious areas. It is only to detain stormwater. Furthermore, there are
no calculations that sized the basin, nor calculated at what rate the detained drainage is released. I
believe these missing calculations are very important for a hillside development and because these
gullies, as stated in the FEIS: “lead to an unnamed stream and to the Bypass Road” (FEIS Vol. I,
page 93). The stream, however, has a name – two in fact: Waikaea Stream and Kainahola Stream.

Increased impervious surfaces, associated structures, and ground cover reduction, all have critical
impacts. I believe the project’s reliance on such an inadequate, minimal report conceals essential
information and avoids the important discussion about drainage. The USDA Soils Map and Soils
Inventory Report which lists the percent slope, and which soils are eroded, and the location and
amount of that acreage, offer us a clear picture of potential problems. It is unclear that the project
can mitigate stormwater runoff to an acceptable level. Existing conditions already direct severe
runoff through the gulches and some flooding already occurs along the Bypass Road during heavy
rains, may be exacerbated.

A related concern I have is about wastewater seepage from the Middle School’s septic
systems during high rain events since the school is not hooked into the county’s sewer line. It is
common to have a septic back up after or even during a heavy rain. Significant rainfall can quickly
flood the ground around the soil absorption area (drainfield) leaving it saturated, and making it
impossible for water to flow out of the septic system. The age of sewer lines around Kapa’a town is
a problem more generally, with repair crews consistently making repairs and replacements.

1 Another building constraint and expense occurs when the development is downhill from the
2 sewer line. Since gravity will not help, a sewage pump is needed to get waste uphill to the sewer line.
3 Because of the Commission's obligation to affirmatively protect public trust resources, assessing
4 these infrastructure issues early on, will reveal whether extensive mitigation measures will be needed
5 and to plan for those associated costs. Again, promises to use BMPs does not satisfy the level of due
6 diligence that's needed. Along these same lines, further information about the kinds of insurance
7 the Applicant will be required to carry in the event that their project contributes to increased
8 flooding, despite implementation of mitigation measures should be provided in my estimation.

9 In addition to outdated infrastructure, many county and state guiding documents are
10 outdated as well: the Department of Water-Storm Water Runoff System Manual (2001); the Water
11 System Standards-State of Hawaii (2002); and the Kauai Water Use and Development Plan (1990).
12 These afford the most minimal protections from the impacts of urban development.

13 Q. As proposed, would the proposed district boundary amendment (DBA) impact the preservation
14 or maintenance of important natural systems or habitats?

15 A. Yes. The lack of any meaningful drainage data may pose a risk to threatened and endangered
16 species in the adjacent marshland. There are wetlands both bordering and in the 96-acre petition
17 area. The protection of these designated wetlands (a habitat for native Hawaiian stilts, ducks, coots
18 and gallinule) is important, so that they remain free from muddy runoff that can occur from hillside
19 properties that generate erosion and stormwater runoff.

20 Compare the Honua Engineering Survey Map (2011) (Exh. I-02, FEIS V.1, Exh. F) to the
21 original Wagner Engineering Survey Map (1998) (Exh. I-36). The early survey clearly identifies
22 extensive marshland along both sides of Waikaea/ Kainahola Stream from the property's northwest
23 corner at Oloheua Bridge all the way down the property border to the southwest corner where the
24 stream crosses the Bypass Road. The newer survey map removed the marshland symbols.

25 Q. Are there other omissions or inconsistencies in the Amended Petition that you have identified?

26 A. Yes. First, there are a variety of conceptual plan maps in the documentation and there are
27 different labels applied to one particular area which is the eroded land with a 20-30 percent slope as
28 indicated on the USDA Soils Map. On one conceptual plan map it is labeled "Park" and on another
it is called "Drainage Basin". A third map uses the label "Greenbelt" while another identifies the
area as "Detention Basins." These various descriptions for steep gullies (rough, sloped, and eroding
terrain) seem misleading when referred to as "Park".

Second, there are repeated claims in the FEIS about land set aside on the property for the
county to relocate the public swimming pool. However, the Kauai Parks & Recreation Master Plan
2013, locates a new swimming pool and Neighborhood Center in the Kapaa New Park Concept Site
Plan (Exh. I-24 (Kapaa Transportation Solutions, Appendix B, Project #8 Priority Project
Description)). This fact is reinforced in the 2013/14-2018/19 Kauai County Six-Year Capital
Improvements Program Report, which provides a Capital Funding Plan with dollar amounts charted
out over six years for the Kapaa Neighborhood Center and Swimming Pool Relocation at a total
estimated cost of \$20,750,000.

Third, another false claim concerns the 1-acre parcel makai of the Bypass Road which the
FEIS repeatedly asserts is proposed for a future police and fire department substation: "One acre on
the Makai side of the Kapa'a By-Pass road (southwest corner of Oloheua and the By-Pass road) is
proposed for future commercial use or for sub-stations for the police and fire departments." This
information is found throughout the FEIS Vol. I at 14, 117 (Employment & Income), 117 (Public
Services & Facilities), 154, 180, 184 and 203. The Petitioner does not establish that the County is
planning to install such services at this site. Such interest seems particularly unlikely because, the 1-

1 acre parcel, which partially borders on the Kapa'a Roundabout, is excluded from the DBA petition
2 area map. *See* Exhibit I-01 (Amended DBA petition, Exh. 1 & 2). Petitioner removed the area
3 proposed for the police and fire substation from the petition area, leaving this remnant as
4 Agricultural District land. Nothing in HRS chapter 205 comes close to allowing police/fire
5 substations in the Agricultural District (unless they are considered public institutions necessary for
6 agricultural operations) so, another DBA would be necessary. Thus from my perspective, the
7 Petitioner's repeated offer to provide that land for a substation is a dishonest misrepresentation.
8 Also, there is no narrative explaining why the FEIS which was for 97-acres, is now 96-acres in the
9 Amended Petition.

10 Fourth, the Honua Engineering Survey Map (Exhibit I-01 (Amended DBA petition, Exh. 1))
11 excludes the Bypass Road which is located within the HoKua Place property boundary as shown on
12 the County of Kauai, Tax Map (Exh. I-37). The Kapa'a Bypass Road right-of-way easement
13 contains an area of 7.859 acres according to the survey map. Vol. I of the FEIS, page 116 states:

14 This section of the Kapaa Bypass Road is owned by the Hokua Place developer, who has
15 entered a memorandum of understanding with State of Hawaii Department of
16 Transportation to dedicate the roadway to the State upon approval of the Hokua Place
17 subdivision.

18 The referenced MOU however, is not included in the FEIS or the amended DBA Petition and it is
19 unclear why the 7.859-acre Bypass Road areas is excluded from this proposed SLU Urban Boundary.
20 These changes or discrepancies between the associated tax map, description of the subject property,
21 and each increment in metes and bounds prepared by Honua Engineering in 2011 should be
22 scrutinized.

23 Fifth, the Bypass Road exclusion from the DBA petition area raises concerns about which
24 entity has jurisdiction over the roadway bridge which crosses Waiakea/Kainahola Stream. In
25 anticipation of flood events, will the bridge pass a 50-year storm event without major
26 damage? Kainahola stream bridge, which is part of the Kapa'a Bypass Road, was built initially built in
27 1937, although reconstruction work was performed on it in 2011.¹ The superstructure deck is in
28 satisfactory condition, but the substructure area is being eroded by the stream. The bank of this
stream is very narrow and makes the bridge vulnerable to clogging and blow outs during storms and
heavy rains.

If Kuhio Highway is closed in a major storm event, the community could be paralyzed
without access to the Bypass Road. Is the current bridge structure designed to carry the heaviest
legal load? I am informed that there is a memorandum of understanding dating from the 1990s
concerning parts of the Bypass Road that are within the TMK of the HoKua Place parcel, however
that MOU is for a 50 unit agricultural condominium property regime in connection with a
subdivision agreement and not for the proposed 769 unit development. Because highway repairs
are so critical, it is important to answer questions and confirm the appropriateness of excluding the
Bypass Road from the petition area.

Sixth, the HoKua Place FEIS refers to an Archaeological Inventory Survey (AIS) that was
prepared for the Kapa'a Intermediate School in the early 1990's. However, Nancy McMahon's
Cultural Impact Assessment and Archaeological Assessment do not refer to the document. I have
contacted State Historic Preservation Division staff to assist in locating this AIS. How can the
Petitioner both rely on the Kapa'a Intermediate School AIS in its environmental review but then not
require its archaeologist to review it in making her assessments? This is inconsistent.

¹ *See* Kapaa Bypass Road over Kainahola Stream, Structure No. 007056000400161,
Bridgereports.com (accessed Feb. 1, 2021) *available at*: <http://bridgereports.com/1105899>.

1 Finally, as a general matter, many of the state and county agency comments in the FEIS are
2 stale, dating back as far as 2011, and those government agencies should be recontacted for a current
3 response.

3 Q. Has the Petitioner established that redistricting these lands to “urban” for the HoKua Place
4 development is justified?

4 A. No. An Urban District boundary is unwarranted for reasons including the following:

5 (1) The property does not include land characterized by “city-like” concentrations of
6 people, structures and streets. Exh. I-22 (2011 full color helicopter photograph).

6 (2) The availability of basic services such as solid waste disposal, drainage, water, and
7 police and fire protection is inconclusive/undetermined.

7 (3) It is unlikely that this land has satisfactory topography, drainage, and is reasonable
8 free from unstable soil conditions and other adverse environmental effects.

8 (4) The property is not precisely contiguous with the existing Kapaa town core because
9 the Kapaa Bypass Road runs between the two. And the Bypass Road poses the greatest obstacle for
10 pedestrians and cyclists to safely reach the town core.

10 (5) The county General Plan has designated this property for “Urban” growth, however
11 that decision to do so was met with strong objections during the public hearings and the Planning
12 Department’s recommendation went back and forth several times.

12 (6) A great deal of the property is surrounded by and adjacent to Agricultural District
13 lands as apparent in the Exhibit I-22 photograph.

13 (7) This property may necessitate an unreasonable investment in public infrastructure
14 and support services because the existing infrastructure is already inadequate, and public safety
15 personnel are short-staffed.

15 (8) The property includes land with 20 to 30 percent slopes which may prove
16 undesirable for urban housing purposes.

16 Q. Do you have any final comments or concerns?

17 A. Yes, I’d like to share a reminder that appropriate land use is the basis for managing urban growth
18 and protecting quality of life. In this case, insufficient infrastructure and its deferred maintenance is
19 a major concern. The direct impacts this project can have on the surrounding community despite
20 the characterization proffered in the marginally accepted FEIS is troubling. Increased traffic
21 congestion throughout the area, the insufficient assessment of drainage and stormwater impacts,
22 unsubstantiated claims of sufficient water or available wastewater treatment are a concern. In my
23 opinion, the risks are high and the Petitioner’s strategies for mitigation are inadequate.

21 Another critical issue, is the lack of a Community Development Plan for East Kauai. This is
22 a powerful reason to deny the DBA and certainly the 1973 Plan does not hold sway.

22 According to Mayor Bryan J. Baptiste who was quoted in the article “Kauai in Crisis”: “One of his
23 ideas is a five-year, use-it-or-lose-it ordinance, requiring any landowner to begin construction within
24 five years of obtaining zoning entitlements. The idea is not to push people into development, but to
25 make sure their plans are firm before the entitlement stage.” Despite overwhelming community
26 support for the “use it or lose it” ordinance, the bill received insufficient support from council
27 members. Nonetheless, it is a cautionary tale knowing that the Applicant wants a 10-year pass just
28 for infrastructure. As you know, redistricting is a value-added entitlement and it is how developers
and speculators improve their economic return. After redistricting, often the property will change
hands a few times.

I believe that one critical issue about this project is that the negative impacts occur outside
of, or adjacent to, the immediate study area – issues that the consultants avoided. A project of this
density is untenable. There are no mitigating measures that will ameliorate or improve the situation
as more housing comes online. In my opinion, until the state and county have made progress in

1 implementing transportation solutions to provide adequate levels of service (LOS D or better), the
2 DBA should not be granted. Until sufficient strides are made in other infrastructure upgrades, high
3 density projects are inappropriate. An important growth management principle is concurrency, or
4 "adequate public facilities". The lack of street capacity, combined with the lack of adequate
5 provision for storm water management and the questionable supply of potable water mean that
6 development of this site cannot be supported by the necessary public facilities now or any time
7 soon.

8 Q. Does this conclude your testimony?

9 A. Yes.
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Rayne Regush

5820A Halakahi Place
Kapaa, HI 96746
c: 808.651.1318
e: rayneregush@aol.com



RECENT PROFESSIONAL EXPERIENCE, SUMMARY OF QUALIFICATIONS & EDUCATION

- Kaua`i Hospice, Volunteer Coordinator, 2016-present
- Kaua`i Planning & Action Alliance, Administrative Coordinator, 2004-2016
- Over 28-years experience in the non-profit sector providing high level executive support to senior management and project coordination primarily in healthcare and education
- Highly computer literate; extensive knowledge of MS Office Tools; proficiency in website and database management; skilled at project coordination, grant writing, proofreading/editing
- BA Degree, State University of New York at Buffalo, CUM LAUDE

RELEVANT COMMUNITY SERVICE

- Kaua`i Multi-Hazard Mitigation Plan Update, Steering Committee Alternate Member (2020-2021)
- Board Chair of the Wailua-Kapa`a Neighborhood Association (W-KNA) (2007 to present)
- Sierra Club, Kaua`i Group Executive Committee member, in various board capacities (2004-present)
- Member of the State Na Ala Hele Advisory Council, the Hawai`i Trail and Access Program, Department of Land & Natural Resources, Division of Forestry & Wildlife (2013- present)
- Kaua`i Tourism Strategic Plan 2019-2021, Sustainable Tourism Committee Member (2018-2019)
- Kapa`a Citizen Advisory Committee Member, State Department of Transportation, Kapa`a Transportation Solutions Report (2014-2015)
- County of Kaua`i Citizens Advisory Committee member for the Kapa`a-Wailua Development Plan 2035 (2006-2016)
- Hawai`i Chapter of the Sierra Club, Executive Committee member (2009 to 2013)
- Attorney pro se on behalf of W-KNA contesting Special Management Area Use Permit SMA(U)-2018-3 Kapa`a Multi-Use Path Phase C&D (Waipouli) challenging the setback (2017-2018)
- Launched a Sierra Club appeal of the State's certified shoreline for the Waipouli Beach Resort (slated to develop 343 timeshare units). With legal representation, negotiated a unilateral agreement for a public access area to "run with the property" and remain free of buildings (2016-2017)
- Friends of Coco Palms Steering Committee member, working towards acquiring the property for community benefit in partnership with the Kaua`i Public Lands Trust (2007-2014)
- Co-manager, Kapa'a Japanese Stone Lantern monument, historic restoration project; a Leadership Kaua`i and Kapa`a Business Assn. partnership. Secured two Community Development Block Grants and received an Award of Merit from the American State and Local History Association (2006-2008)

A11-791 HG Kaua'i Joint Venture LLC (fka Kapa'a Highlands Phase II) HOKUA PLACE

In opposition to reclassifying 96-acres of land
from the State Agricultural District to the State Urban District
in Kapa'a, island of Kaua'i

EXHIBIT "I-19"





WAILUA-KAPA'A
NEIGHBORHOOD
ASSOCIATION

FOR IMMEDIATE RELEASE

Contact Sid Jackson, Association Secretary
Phone: 821-2837
Email: sjackson23@hawaii.rr.com

Kapa'a Highlands: Housing on the Horizon

KAPA'A, KAUAI—October 2, 2011. The Wailua-Kapa'a Neighborhood Association's October meeting will feature guest speaker Greg Allen Jr., Director of Kapa'a Highlands, Inc. discussing plans for a proposed 97-acre, single-family and multi-family residential development, on Saturday, October 22, 2011, 2:00 p.m. at the Kapa'a Library. The presentation is free and open to the public.

The mixed-use, planned community includes single-family lots, multi-family townhouse dwellings, and a small number of 2 to 3-acre estate lots, totaling between 600-800 housing units, along with community facilities, parks, and commercial uses.

Other features under consideration include multimodal roadway design and connectivity to the Kapa'a town core, underground utilities, preserving green space, maintaining current livestock operations, a county swimming pool adjacent to the school, a new roadway from the Bypass Road to Olohehena Road, and neighborhood commercial amenities.

The project site is located near the Kapa'a town core, adjacent to Olohehena Road and the Kapa'a Bypass Road (near the Kapa'a traffic circle) and behind the Kapa'a Middle School. A petition to the State Land Use Commission to reclassify the 97 acres of Agricultural District land to Urban District is required.

The Kauai General Plan designation for this agriculturally-zoned land has been "Urban Center" since the 1970's, with the intent for future urban development to accommodate a variety of uses and zoning to serve a larger region.

This is an excellent opportunity for residents to ask questions and offer early input that may influence the plan, says Wailua-Kapa'a Neighborhood Association Chair Rayne Regush, who also serves on the County's Citizens Advisory Committee for the East Kauai Development Plan Update. The meeting will also include updates on other local issues. For more information, contact Association Secretary Sid Jackson at 821-2837 or visit www.wkna.org.

Serving Residents of the Kawaihau District
"We treasure our rural community"

340 Aina Uka Street, Kapa'a, Hawaii 96746 • 821-2837

28 MidWeek October 19, 2011

WHAT'SUP

A CALENDAR GUIDE TO FUN ON KAUAI

Compiled by MidWeek Kauai staff, calendar@midweekkauai.com

COMMUNITY

Housing on the Horizon
Kapa'a Library Meeting Room, 4-1464 Kuhio Hwy, Kapaa, 2-4 p.m., free. The Wailua-Kapa'a Neighborhood Association presents Greg Allen Jr., who discusses the proposed 97-acre residential development with 600-800 housing units, community facilities, parks and commercial uses. (821-2837, www.wkna.org)

12— Sunday, October 16, 2011

KAUAI TIMES



Saturday, Oct. 22

KAPA'A HIGHLANDS
—2 to 4 p.m. at the Kapa'a Library. Wailua-Kapa'a Neighborhood Association landowner Greg Allen discusses Housing on the Horizon, a proposed 97-acre, mixed-use community with 600-800 housing units, community facilities, parks, and commercial uses. Free. Call Sid Jackson at 821-2837 or visit www.wkna.org.

B4— Friday, October 14, 2011

THE

Community Calendar

Things to do on the Garden Island

Saturday, Oct. 22

KAPA'A HIGHLANDS —2 to 4 p.m. at the Kapa'a Library. Wailua-Kapa'a Neighborhood Association landowner Greg Allen discusses "Housing on the Horizon," a proposed 97-acre, mixed-use community with 600-800 housing units, community facilities, parks and commercial uses. Free. Call Sid Jackson at 821-2837 or visit www.wkna.org.

C4— Sunday, October 16, 2011

THE GARDEN ISLAND

SMALL BUSINESS News and Events

Kapa'a Highlands: Housing on the Horizon development meeting Saturday

Greg Allen Jr., director of Kapa'a Highlands, will be discussing plans for a proposed 97-acre, single-family and multi-family residential development at 2 p.m. on Saturday at Kapa'a Library.

The presentation, hosted by Wailua-Kapa'a Neighborhood Association, is free and open to the public.

The project would require State Land Use Commission approval for reclassification of 97 acres from agricultural to urban. Kauai General Plan designation for land has been "Urban Center" since the 1970s, the release states.

The proposed mixed-use, planned community includes single-family lots, multi-family townhouse dwellings and a small number of two- and three-acre estate lots, totaling between 600 and 800 housing units, along with community facilities, parks and commercial uses, a news release states.

Other features under consideration include a multi-modal roadway connecting to Kapa'a town's core, underground utilities, preservation of green space.



Contributed photo
An aerial view of the site of Kapa'a Highlands housing development, proposed by landowner Greg Allen to comprise a 97-acre, mixed-use community with 600 to 800 housing units, community facilities, parks and commercial uses.

Kapa'a Highlands II
DRAFT
Environmental Assessment



Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
&
Petitioner,
Three Shoguns, LLC

Prepared by:
Ho'okuleana LLC
... for state responsibility ...

25 Kaloa Way Suite, Suite 212
Kalaheo, Hawai'i 96741
(808) 254-2223 (24 hrs)
(808) 225-4447 (9am-5pm)
www.hookuleana.com
info@hookuleana.com

June 2012

HoKua Place
Section 343-5e HRS Preparation Notice
Environmental Impact Statement



Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
&
Petitioner
HG Kaua'i Joint Venture

Prepared by:
Ho'okuleana LLC
... for state responsibility ...

2539 Kapa'u'u Drive
Kalaheo, Hawai'i 96741
(808) 225-3557
www.hookuleana.com
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HoKua Place
Section 343-5e HRS Draft
Environmental Impact Statement
Volume I



Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
&
Petitioner
HG Kaua'i Joint Venture LLC

Prepared by:
Ho'okuleana LLC
... for state responsibility ...

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May 2015

HoKua Place
Section 343-5e HRS Second Draft
Environmental Impact Statement (2nd DEIS)
Volume I




Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
&
Petitioner
HG Kaua'i Joint Venture LLC

Prepared by:
Aggr John Architects, LLC
450 Ewa Road, Suite 200
Honolulu, Hawai'i 96813
(808) 942-2462
www.aggrjohn.com

October 2016

This Second Draft Environmental Statement ("2nd DEIS") and all section documents were prepared under my direction and supervision, and to the best of my knowledge, fully address the document content requirements set forth in Section 13-200-17, Hawai'i Administrative Rules.


Ron Aggr
1

HoKua Place
Section 343-5e HRS
Final Environmental Impact Statement (FEIS)
Volume I



Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
&
Petitioner
HG Kaua'i Joint Venture LLC

Prepared by:
Aggr John Architects, LLC
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Honolulu, Hawai'i 96813
(808) 942-2462
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November 2019

This Final Environmental Statement ("FEIS") and all section documents were prepared under my direction and supervision, and to the best of my knowledge, fully address the document content requirements set forth in Section 13-200-17, Hawai'i Administrative Rules.


Ron Aggr
1

**A patchwork
of many
iterations.**

HoKua Place
Section 343-5e HRS Draft Final
Environmental Impact Statement
Volume I



Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
&
Petitioner
HG Kaua'i Joint Venture LLC

Prepared by:
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March 2018

Aggr John Architects, LLC
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(808) 942-2462
www.aggrjohn.com

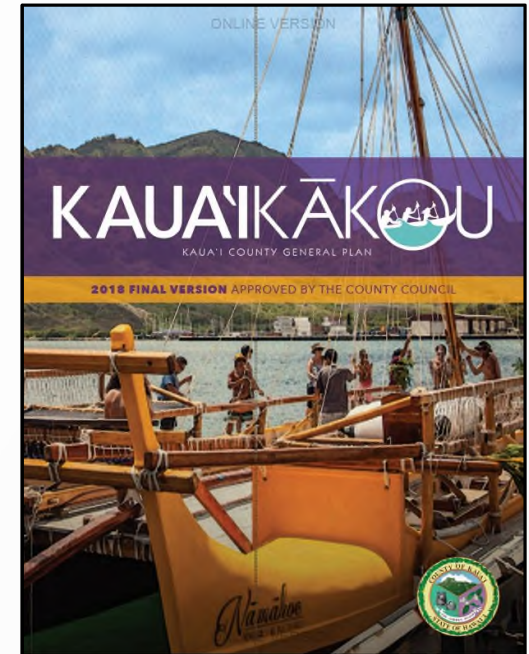

Ron Aggr
1



1973 Development Plan

- DRAFT ONLY -
(2006-2016)

East Kaua'i
Development Plan 2030



2018 General Plan



**Northbound Kapa'a Bypass Rd.
Hillside on left is HoKua Pl.**

**Southbound Kapa'a Bypass
Road (1-way lane only).**

**Status of proposed 2nd lane
is unclear.**





View of Hokuia Place from the Bypass Road (northbound).

Middle School top right.



8. INFRASTRUCTURE

This chapter addresses infrastructure systems within East Kaua'i. It is intended to guide long-range functional and facility plans by respective County agencies.

VISION STATEMENT

Infrastructure Improvements are directed in areas where growth is desired. New development is contingent upon the adequacy of infrastructure improvements. A new and/or renovated wastewater treatment plant and reclamation facility serves the community. Water source, storage, and distribution are adequate. County recycling and re-use programs to reduce solid wastes are embraced by East Kaua'i residents.

8.1 WASTEWATER MANAGEMENT

8.1.1 INDIVIDUAL WASTEWATER SYSTEMS

The vast majority of East Kaua'i is served by Individual Wastewater Systems (IWS), such as cesspools and septic tanks. IWSs are common in areas with low and moderate residential densities, including Wailua Homesteads, Wailua Houselots, Kapa'a Homesteads, Anahola, and Moloa'a.

Individual Wastewater Systems

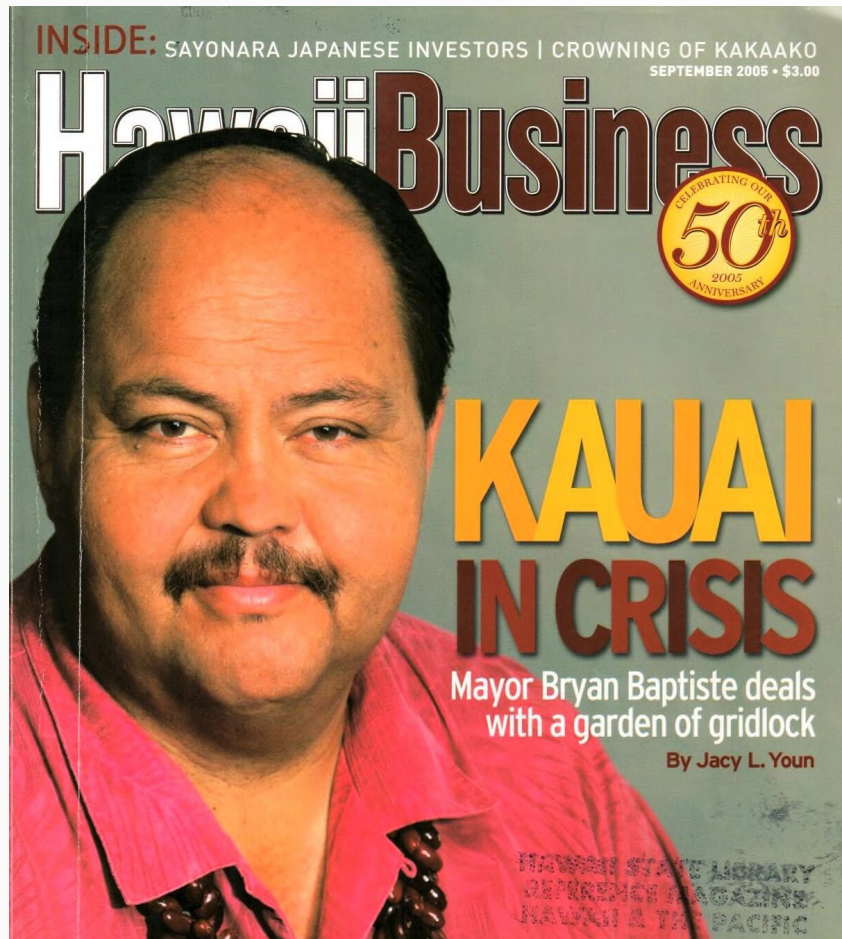
The State Department of Health (DOH) regulates IWSs throughout the State. Specifically, the DOH limits IWSs to residential lots that are 10,000 square feet in size (equivalent to R-4 zoning) or larger. This lot size provides the sufficient area for effluent to seep into the ground. New residential subdivisions that are less than 50 units are also allowed to have IWSs, provided that sewer service is not available to the property. New subdivisions over 50 units must install wastewater treatment plants. Homeowners are responsible for maintaining their own systems.

8.1.2 WAILUA WASTEWATER TREATMENT PLANT

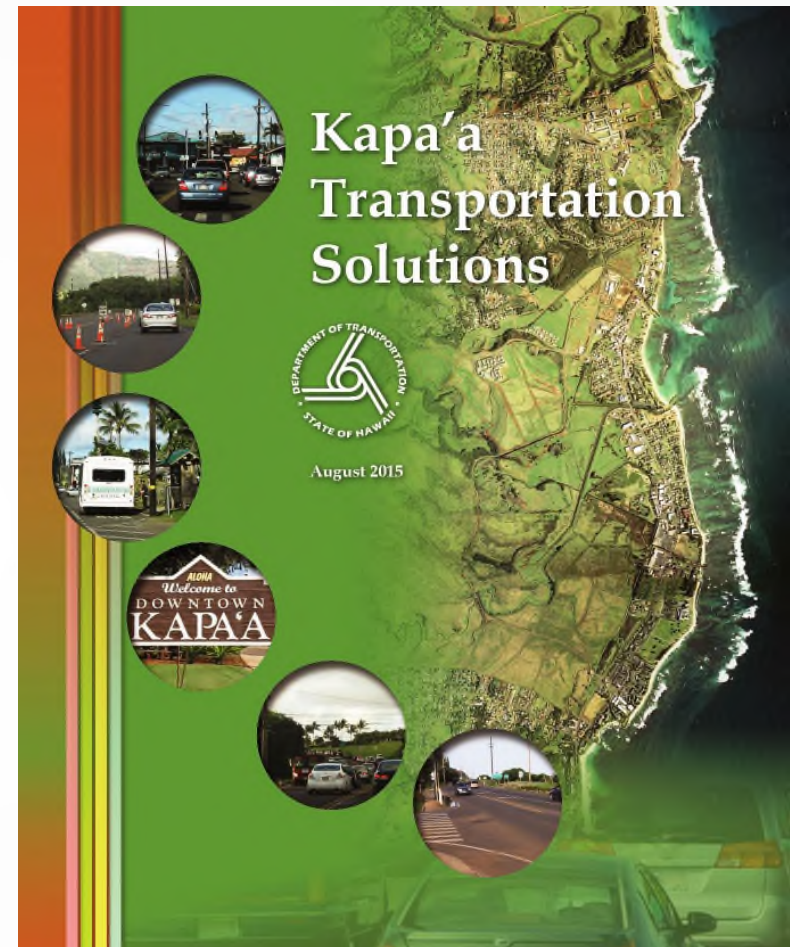
The Wailua Wastewater Treatment Plant (WWTP) is owned and operated by the County of Kaua'i. Developed in the 1960's, the Wailua WWTP serves the coastal area of Wailua, Waipouli, and Kapa'a. The plant was expanded in several phases. The most recent expansion took place in the early 1990s. The current permitted plant capacity is 1.5 million gallons per day (mgd). However, due to age and lack of redundancy, the current available capacity is 1.0 mgd. The plant is presently operating at 0.5 mgd.



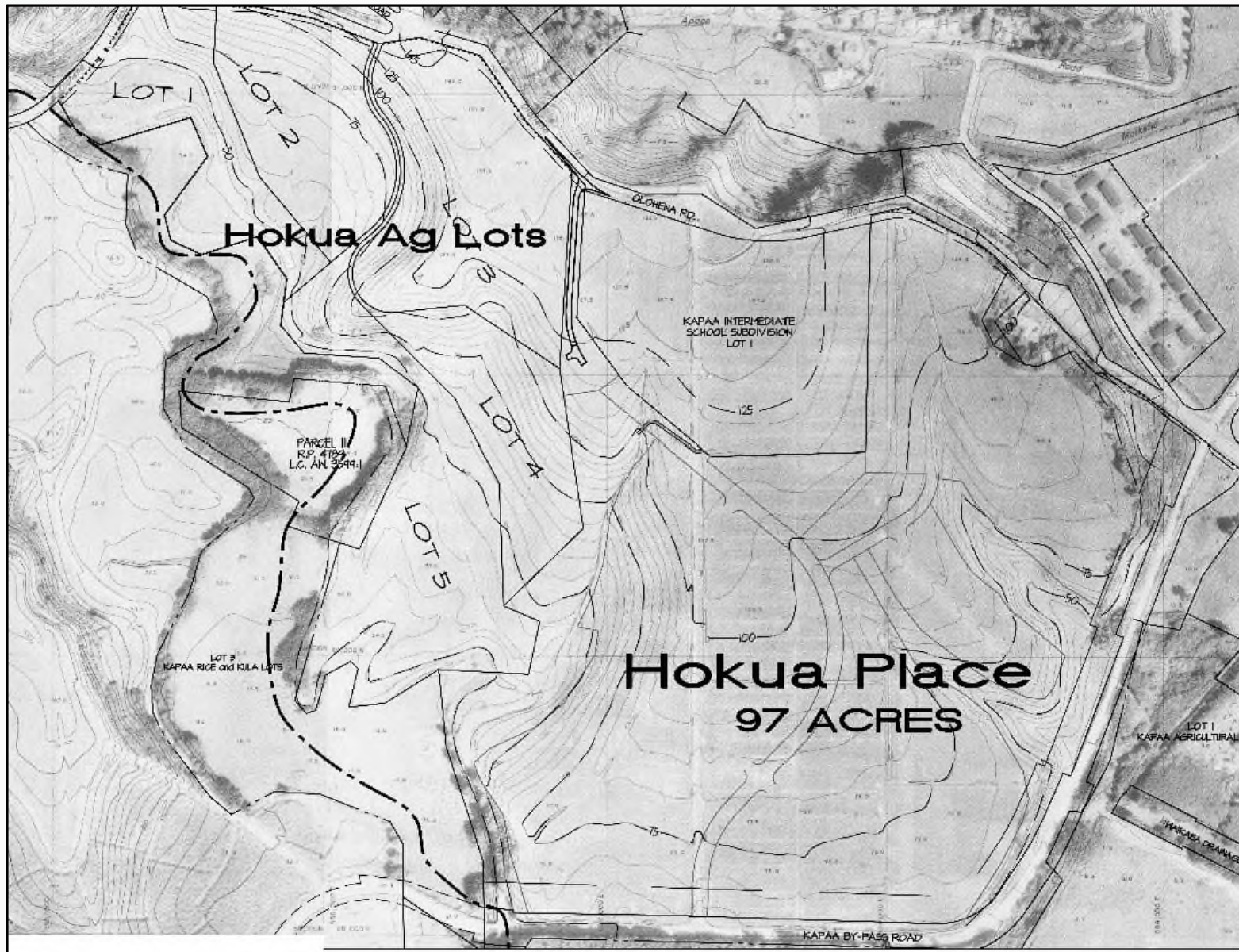
DRAFT plan never reached Kaua'i County Council for adoption.



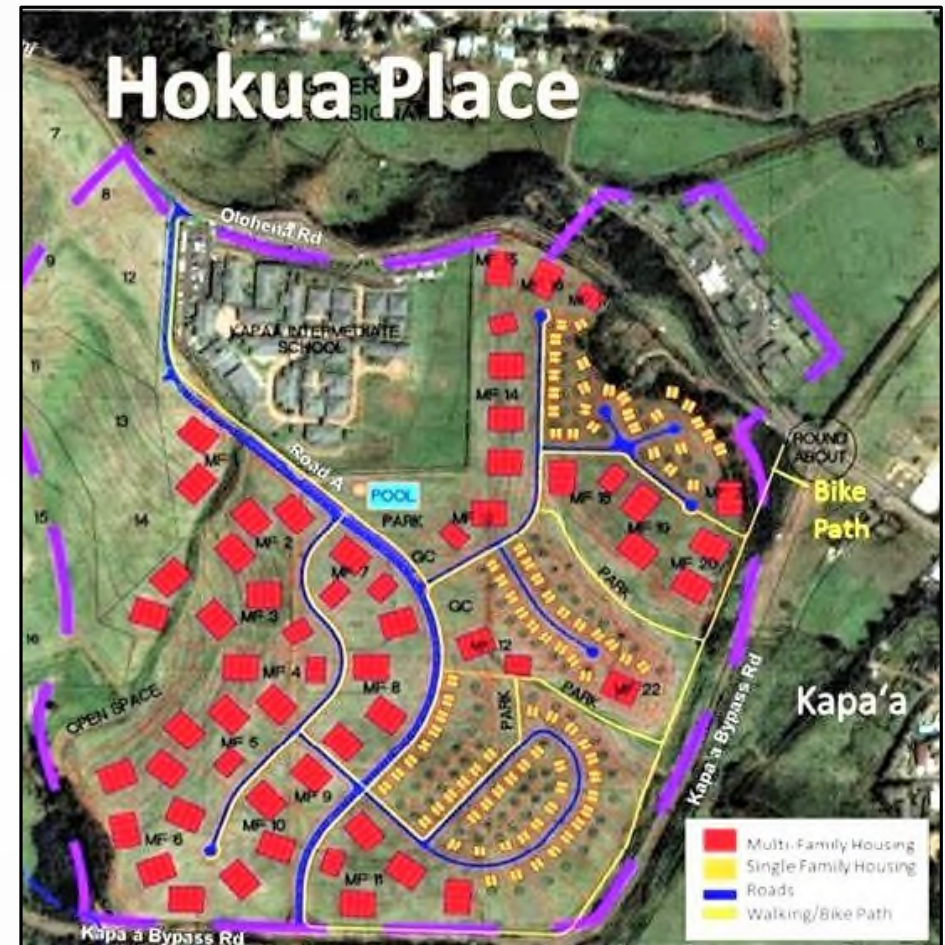
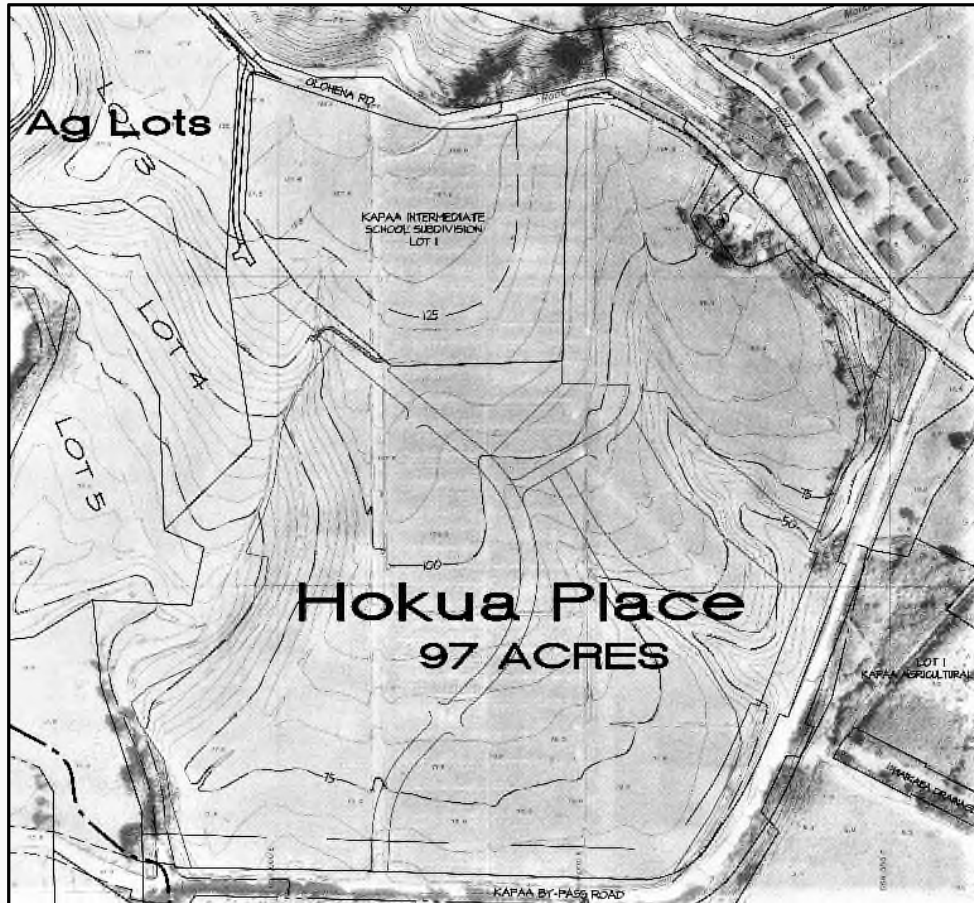
SEPT. 2005 - “Garden of Gridlock”



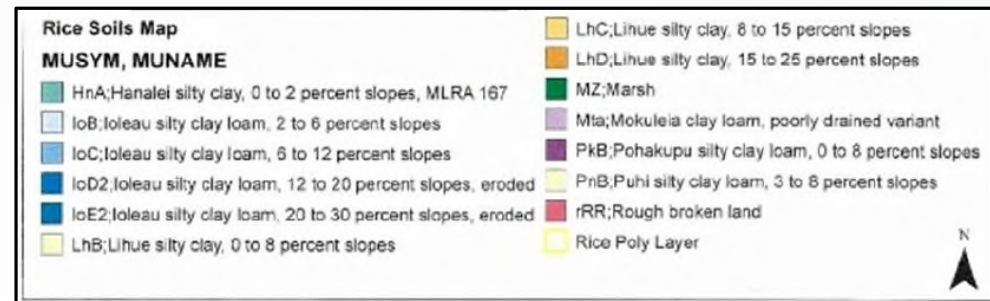
AUG. 2015 – Solutions?







TOPOGRAPHY CONSIDERATIONS: Drainage – Stormwater Runoff – Slope – Erosion
Natural Gullies: Park? Detention Basin? Greenbelt? Open Space?



Soils Inventory Report

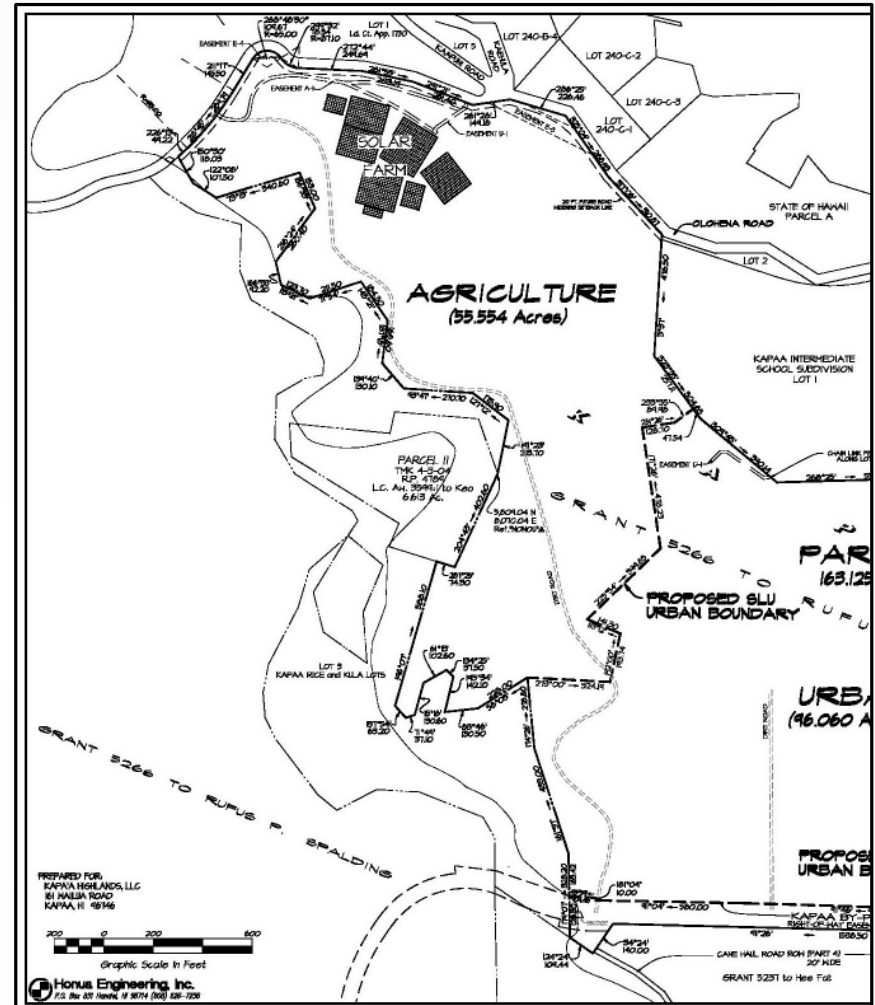
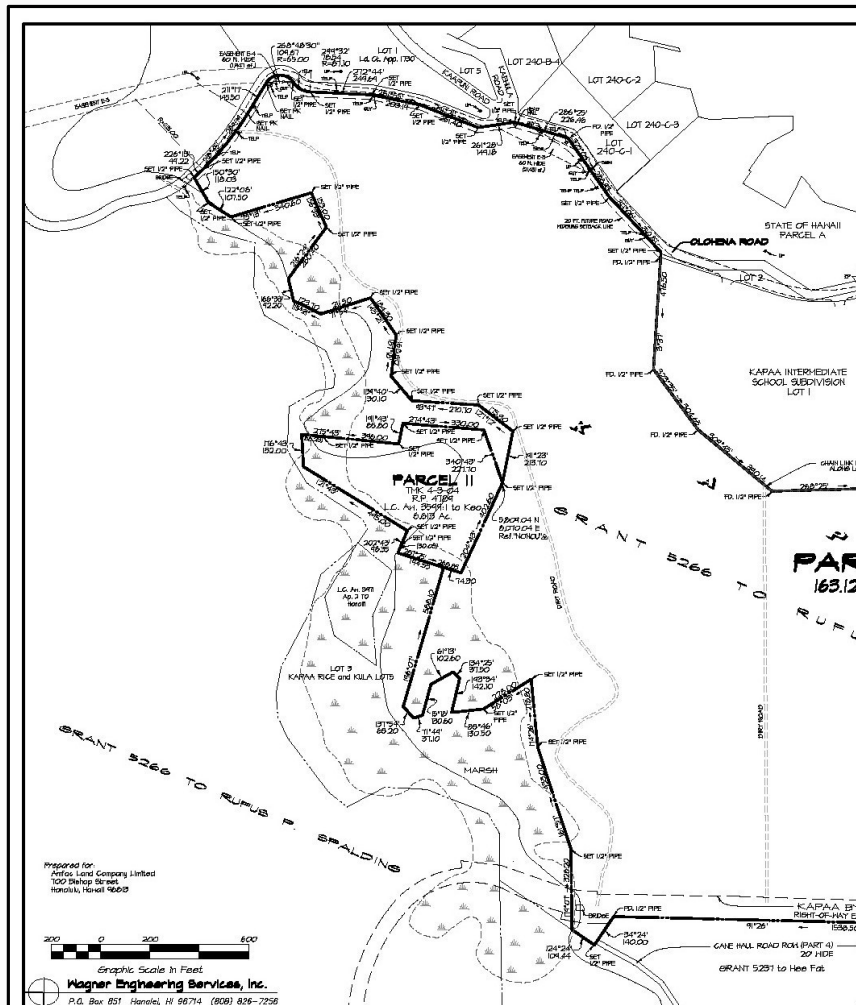
Thu May 31 2018 11:17:28 GMT-1000 (Hawaiian Standard Time)

Map Unit Symbol	Map Unit Name	Acres	Percent
HnA	Hanalei silty clay, 0 to 2 percent slopes, MLRA 167	1.1	1%
IoB	Ioleau silty clay loam, 2 to 6 percent slopes	45.1	28%
IoC	Ioleau silty clay loam, 6 to 12 percent slopes	16.2	10%
IoD2	Ioleau silty clay loam, 12 to 20 percent slopes, eroded	10.6	7%
IoE2	Ioleau silty clay loam, 20 to 30 percent slopes, eroded	24	15%
LhB	Lihue silty clay, 0 to 8 percent slopes	8.2	5%
LhC	Lihue silty clay, 8 to 15 percent slopes	0.7	0%
LhD	Lihue silty clay, 15 to 25 percent slopes	3.9	2%
Mta	Mokuleia clay loam, poorly drained variant	3.1	2%
MZ	Marsh	0.3	0%
PkB	Pohakupu silty clay loam, 0 to 8 percent slopes	0.8	0%
PnB	Puhi silty clay loam, 3 to 8 percent slopes	31.4	19%
rRR	Rough broken land	16.1	10%
Total:		161.5	100%

**Acreage of “Soils Inventory” is for 161.5 acres – NOT for the 96-acre petition area.
The extent of 20-30% slope and 12-20% slope coverage is guesswork.**



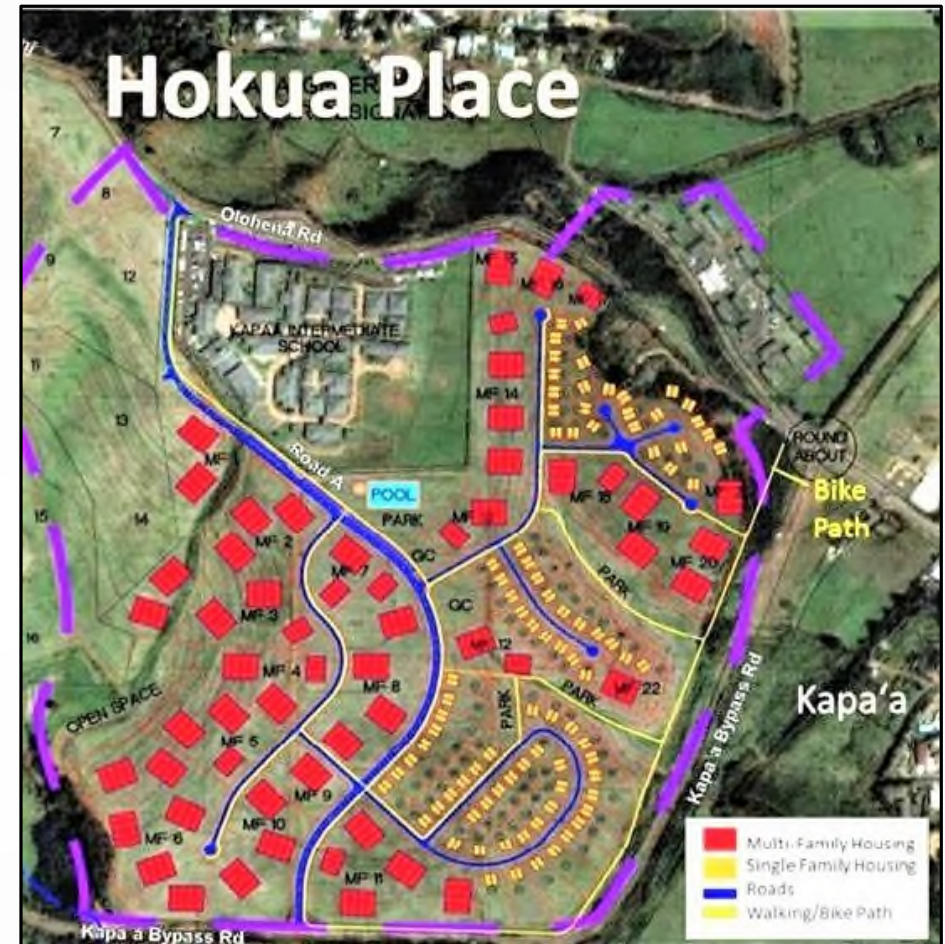
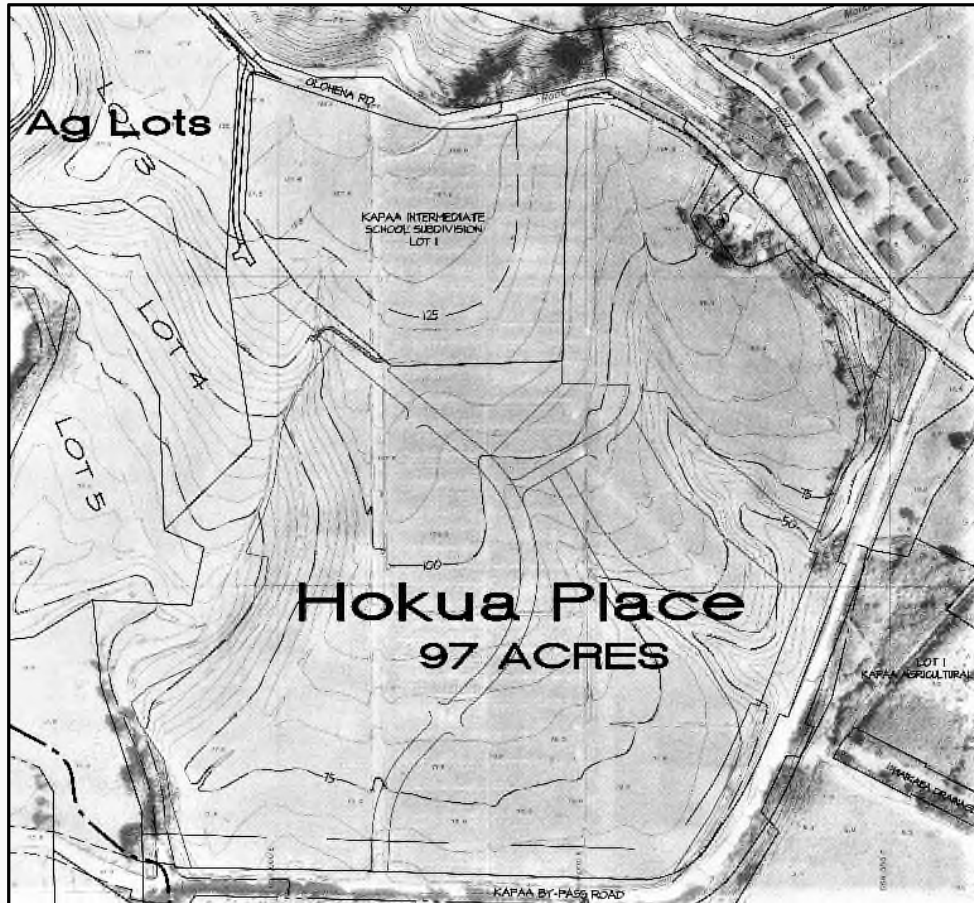
Kainahola Stream, surrounding marshland and Waikaea drainage area.



Wagner Engineering Survey (1998)

Honua Engineering Survey (2011)

MISSING MARSHLANDS on the Honua Map.



TOPOGRAPHY CONSIDERATIONS: Drainage – Stormwater Runoff – Slope – Erosion
Natural Gullies: Park? Detention Basin? Greenbelt? Open Space?



Log In
Schneider
Search

Layers
Map
Search
Results
Report
Sales Search
Sales List
Sales Results
Home
Sketches
Pictometry Imagery

Layer List
Legend

Quick Links:
Property Search
View Map

Layers:
☒ Parcels
☒ CPR Units
☒ Parcel Numbers
☐ Address Numbers
☐ CPR Numbers
☒ Roads
☒ Yearly Sales
☒ Aerials (2014-2016)
Restore Layer Defaults

430030010000
HG KAUAI JOINT VENTURE LLC
OLOHENA RD
163.13 Acres
View: Report | Sketches | Pictometry Imagery | Google Maps opens in a new tab

Parcel ID430030010000	Situs/Physical Address OLOHENA RD	Total Market Value \$6,656,000	Last 2 Sales
Acreage 163.125	Mailing Address HG KAUAI JOINT VENTURE LLC	Total Assessed Value \$6,656,000	Date Price Reason
Class INDUSTRIAL	5662 W CLUBHOUSE DR	Total Exemptions \$0	4/3/2001 \$2600000 MULTI-PITT
	HURRICANE UT 84737	Total Net Taxable Value \$6,656,000	3/2/2001 \$840000 MULTI-PITT
Brief Tax Description	POR PARCEL 1, POR GR 5266 163.125 AC DES		
	(Note: Not to be used on legal documents)		

PROPERTY BOUNDARY: Note lower left corner (bridge) and upper right corner (proposed police substation).

INSIDE: SAYONARA JAPANESE INVESTORS | CROWNING OF KAKA'AKO
SEPTEMBER 2005 • \$3.00

Hawaii Business



KAUAI IN CRISIS

Mayor Bryan Baptiste deals
with a garden of gridlock

By Jacy L. Youn

HAWAII STATE LIBRARY
SERIALS UNIT
478 SOUTH KING ST
HONOLULU HI 96813-2901

*****CAR-RT LOT**C012

HW 968130HASLI47897 06APR 213

HAWAII STATE LIBRARY
SERIALS UNIT

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EXHIBIT "I-20"

As government Web sites go, the county of Kauai's is pretty impressive. Chock full of good information, from bus schedules to city council meeting agendas, www.kauai.gov is a virtual hub of information for all things city government. And, as avid Web surfers can appreciate, nothing is more than a click or two away from the home page, making it arguably one of the state's most easily navigable county Web sites. Too bad the same can't be said for Kauai's roadways, which are a snarled web of traffic woes. The island's two major state highways, Kaunualii and Kuhio, which begin on opposite ends of the island and merge in the town of Lihue, are beyond congested, and its county-administered thoroughfares are equally clogged. From sun up to sundown, bumper-to-bumper traffic is the norm. During rush hour, traffic is down right unbearable.

At the same time, development on Kauai is far from idle. On the contrary, developers from the north to the south shores are moving full speed ahead, with over 10,000 new visitor and residential units being built over the next year or two, and a total of more than 16,000 new units coming online over the next two decades. Now tack a car (or in some cases, two) onto each of those units, and you've got a slow-motion train wreck in the works.

"There's no doubt, Kauai's infrastructure is just not keeping up with the pace of development," says Louie Abrams, the Kauai commissioner for the Hawaii Real Estate Commission and longtime advocate for community-minded growth. "In



PLANNING WITH A PURPOSE: The planning department's top executives, Bryan Mamaclay, Ian Costa and Keith Nitta have a tough task in front of them.

theory, what's supposed to happen is the county is supposed to build the infrastructure in advance of its zoning. But the reality is that back when we zoned all these things, we didn't give much thought to what infrastructure was going to be needed, so all of a sudden we've given [developers] pretty much a vested right to go ahead and build, even though we don't have adequate infrastructure, particularly if we're talking about our roads and highways."

theory, what's supposed to happen is the county is supposed to build the infrastructure in advance of its zoning. But the reality is that back when we zoned all these things, we didn't give much thought to what infrastructure was going to be needed, so all of a sudden we've given [developers] pretty much a vested right to go ahead and build, even though we don't have adequate infrastructure, particularly if we're talking about our roads and highways."

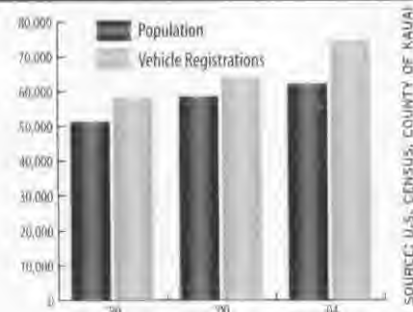
It Should Be Obvious that's Inadequate

To be fair, it's not as though the state Department of Transportation, which is in charge of the island's two main highways, doesn't have any plans for road construction on the island. According to DOT spokesperson Scott Ishikawa, the state's currently got two major construction projects underway: an expansion of the existing "temporary" bypass road in Kapaa and the widening of Kaunualii Highway from two

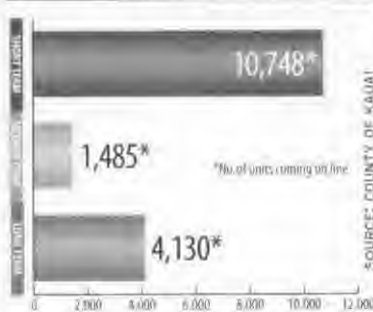
more vehicles than there are people). During the same period, however, there's been very minimal road creation. In fact, aside from the construction of a few scattered bypass roads, major state road construction has been in short supply for as far back as most residents can remember, and the county doesn't even have a dedicated budget for new roads. Furthermore, until earlier this year, the island's county engineer position—whose job it is to oversee the Department of Public Works (including all county roadways)—was vacant for three whole years.

When Donald Fujimoto was finally hired to fill the position in April 2005, it didn't take him long to uncover *pukys* in the system. "The whole concept of doing more with less is evident at the county. The planning department is the agency that's supposed to be giving us direction on where we should expand and build our roads, but they're so busy putting out fires, they haven't even met with us yet," says Fujimoto. "So for all we know, everything could be fine. Maybe sitting in traffic for 15 or 20 minutes to an hour is okay. I don't know, because they haven't told us."

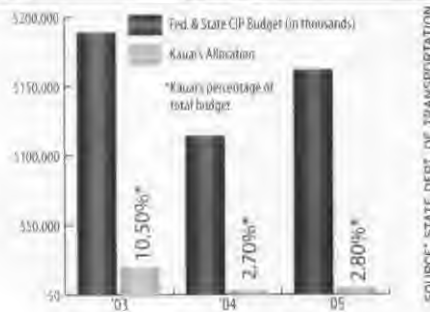
The number of vehicles on Kauai already far exceeds the population ...



Meanwhile, development continues to run rampant ...



But Kauai typically doesn't receive enough money to sustain new road construction



Former mayor and current council woman JoAnne Yukimura has the same concerns about the planning department, which is understaffed and overworked. "The planning department needs to plan their office first before they can plan the island. I've asked Ian [Costa, the planning director] several times how he plans to transform it from a permitting department into a planning department," she says. "Because we can't just keep growing if the infrastructure's not there, and it's the responsibility of the planning depart-

ment to figure that out, but it's hard for them to think long-range if all they're doing is permitting."

The thing is, there is a person there, Keith Nitta, whose job it is to do long-range planning. And he actually does have a pretty firm grip on where the island is headed, in terms of development and growth. (Nitta provided *Hawaii Business* with a detailed map that we recreated, outlining all the development projects slated for the short-, mid-, and long-terms) In fact, Nitta isn't trying to hide

that, by his estimate, the island's infrastructure - from the roads to sewer and water - has been utilized above capacity since as far back as the late '90s. The problem is that it's difficult, if not unreasonable, to expect one man to coordinate the long-range planning of commercial, urban and ag development and public infrastructure, particularly for something as complex and mammoth as roads. As Yukimura puts it, "It should be obvious that that's inadequate."

KIUC...

The 3 Year Old Cooperative Celebrating Its 100 Year History

In 1905, Kaua'i Electric (KE) was incorporated for the purpose of constructing a 2,400 kW hydro-electric plant for McBryde Sugar Company on the Wainiha River. This was a major undertaking - not only constructing the hydro plant, penstocks and transformer station, but also laying a 34 mile long power line over some of the island's most rugged terrain. Power was turned on in August of 1906. As a subsidiary of McBryde Sugar, KE merged with Lihue Plantation's Waiahi Electric Company in the early '50s.

As Kaua'i's need for additional power grew, the owners of KE were hard-pressed to provide the capital for the badly needed generation, transmission and distribution facilities. In 1969, the owners negotiated a sale and Kaua'i Electric Company became a division of Citizens Utilities Company, an investor-owned company providing electric, telecommunications, gas, water and wastewater utility services.

In the summer of 1999, a group of Kaua'i business leaders joined to form the Kaua'i Island Utility Cooperative. This non-profit entity, with cooperative by-laws, was incorporated on November 6, 1999. The purpose of KIUC was to bid for and acquire Kaua'i Electric Company from Citizens. After a four year journey in the early morning hours of Friday, November 1, 2002 the sale of Kaua'i Electric to Kaua'i Island Utility Cooperative became official.



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Caught Behind The Eight Ball

Despite the roads being already obviously maxed beyond capacity, and despite the overwhelming amount of development projects on the horizon, neither the county nor the state has taken the time to do a detailed assessment of whether Kaua'i's roads can handle the additional capacity. Forget about whether residents and visitors to the island even want this type of growth to begin with - that's long since been determined for them, with the creation of Kaua'i County's General Plan nearly 30 years ago. The document, which can be found on the county's Web site, is supposed to outline the strategy for growth on the island, but, ironically, the plan is a big part of the reason the island's been caught behind the eight ball in terms of infrastructure.

"I think our forefathers, in their wisdom, created the comprehensive zoning ordinance and designated areas of growth with good intentions at the time," explains Kaua'i Mayor Bryan Baptiste, who is very concerned about the pace and type of growth occurring on the island. "But we've since encountered obstacles they didn't plan for, especially traffic, and our infrastructure cannot handle the volume we already have today, much less an increase in those volumes."

Baptiste says that even up until the late '90s, when the county's general plan was most recently updated, its planners hadn't anticipated things such as the time-share boom and second home phenomenon - both of which continue to attract droves of additional bodies to the island. On top of that, adds Yukimura, after Hurricane Iniki hit in 1992, long-term planning took a backseat to simply surviving. With everyone so intently focused on rebuilding the island, she says, the powers that be (herself included, since she was the mayor) weren't able to sit back and strategize a long-range, comprehensive plan for growth. And it's understandable that at the time, it probably wasn't a pressing priority.

In The Event Of An Emergency

Now, however, the story is completely different. Everyone from the citizens on up to the mayor is worried the island is developing at a rate faster than its infrastructure can keep pace with. Even Sue Kanoho, the head of the Kauai Visitors Bureau, whose job it is to attract more visitor dollars to the island, is concerned about the rate at which Kauai is developing, and in particular the extraordinary growth of visitor units on the island.

"If you look at the growth in the number of visitor units on Kauai last year, it was 11.7 percent, while Big Island was only 5.9 percent, Oahu was 0.9 percent, and Maui was only 0.8 percent," Kanoho points out.

If the roads aren't keeping up with the number of projects, maybe the county should put the brakes on some of the development.

"That's telling. So yes, I do think it's really important that the leaders of the island take the time right now to look at the growth, look at the number of new units, and make sure we have the necessary tools to deal with that growth so we don't put an extra strain on the island."

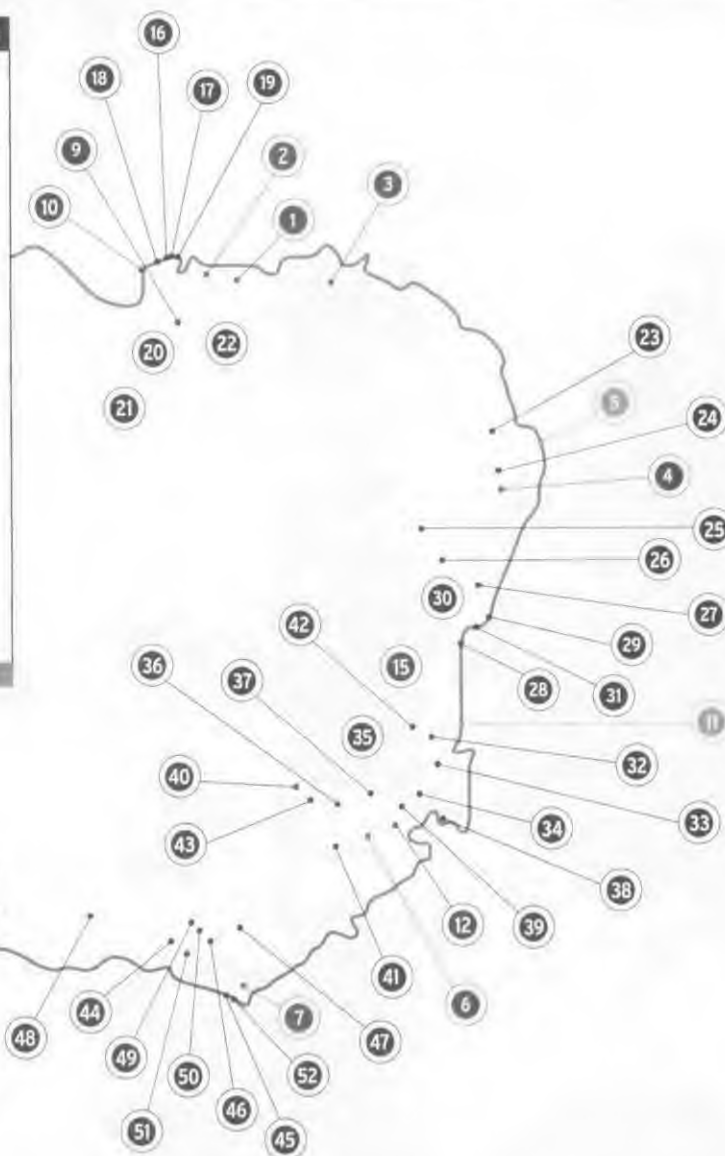
Many people on Kauai are wondering the same thing - whether a coordinated

growth management plan for both development and infrastructure is in the works, and, subsequently, if it is determined that the county is in fact developing too much, too soon, what is it going to do about it? It makes sense, after all, that if the roads aren't keeping up with the number of projects, maybe the county should put the brakes on some of the development.

PROPOSED DEVELOPMENT PROJECTS

NO. PROJECT	UNITS	NO. PROJECT	UNITS
1. Princeville Mauka	950	30. Coconut Grove timeshare	170
2. Central/Eastern Plateau	1,200	31. Kauai Lagoons	
3. Kilauea Town Expansion	350	affordable housing	82
4. Kealia Affordable	90	32. Hanamaulu Triangle	400
5. McCloskey Kealia Mauka	N/A	33. Lihue Infill	1,500
6. Hulomahu Plateau	800	34. Kauai Lagoons	
7. Knudsen	1,000	affordable housing	24
8. Kikilaola-Mauka	600	35. Nawiliwili Hui	50
9. Princeville Shopping Ctr.		36. Puall	104
Affordable Housing	100	37. Pihake	180
10. Hanalei Plantation	385	38. Kauai Lagoons	723
11. Nukunui	N/A	39. Rice Camp	56
12. Puakea III	150	40. Self Help	41
13. Kikilaola 250	250	41. Schuler	56
14. Kekaha Mid	N/A	42. Kalepa	80
15. DHHL - Wailua	600	43. Regency II	80
16. Brookfield timeshare	102	44. Kukulula	1,500
17. MLB - Condo	68	45. Regency	320
18. Bali Hai Expansion		46. Kiahuna	1,400
timeshare	200	47. Starwood (Sheraton Exp.)	150
19. Starwood timeshare	367	48. Kakela Makai - II & III	115
20. Queen Emma II	118	49. Paanau	60
21. Meadows	130	50. Kukulula Employee	
22. Greens	40	Housing	100
23. DHHL - Anahola	186	51. Koloa Town N.C.	40
24. Kealia Mauka	192	52. Poipu Beach Hotel	125
25. Kulana	110	53. Port Allen	135
26. Kulana Kai	55	54. Habitat	123
27. Waipouli Beach timeshare	190	55. Kapalawai	250
28. Coco Palms Resort	252	56. DHHL - Kekaha	49
29. Former Blackfield	325	57. DHHL - Hanapepe	500

LONG TERM MEDIUM TERM SHORT TERM UNDETERMINED



SOURCE: KAUAI COUNTY PLANNING DEPARTMENT

But that's where it gets tricky. Nitta says that because the majority of the county's zoning was authorized 30 years ago, it's difficult to rescind the landowners' rights. "For years, these landowners haven't been using their land, but they're paying the higher taxes on it because it's zoned for urban use," he says, adding that the planning department does, however, carefully scrutinize each applicant during the per-

mitting process. "To me, get two categories of the so called 'builders of Kauai' – the long term guys and the rapers of the *aina* who come here, make money and Aloha! So we tend to be more amenable for the guys who make the long term investments. And if it sounds like we're discriminating, fine. But we gotta be hard on the guys who are here for the short haul."

Others agree that there are ways to

manage and control growth without putting an outright moratorium on development. "We do have the authority to take back the zoning, but it's not about taking. It's about doing creative, proactive planning. On ag land, for example, all you have to do is enforce that a farm dwelling is a farm dwelling and not a subdivided condominium lot," says Yukimura. "Zoned urban use is harder, but you can approach the developer and say, 'For every unit you transfer from an area where we don't want density to one where we do, we'll give you the right to build five units.'" The point being, she says, that there are creative ways to control growth, versus succumbing to the "Well, we zoned it so we can't stop them from building it," school of thought.

Another potential solution being widely discussed on Kauai is the creation of an assessment impact fee, whereby developers would pay x amount of dollars per unit into an infrastructure fund. It's not really a novel concept, but is one that hasn't yet been employed uniformly on Kauai. "We've been pushing for an impact fee ordinance for a long time," says Abrams. "Determine what the county infrastructure needs are going to be, quantify it, spread it out to all the developers and simply say, you guys are going to pay your fair share." But on an island where the booming construction and real estate industries are giving the economy a much-needed shot in the arm, people are cautious of biting the hand that feeds them.

Looking Forward

Like G.I. Joe says, knowing is half the battle. And most of the island's leaders appear acutely aware of the issue, and are eager to get the horse out from behind the cart. "Part of the reason we're in this situation is that it all comes down to money and it all comes down, I think, to political will over the years. People have always been divided not on the need for bypass roads, but how it looks and where it goes," says Baptiste. "And that general lack of decisiveness, I think, especially on the main highways, has caused us to get to this point, but there's nothing I can do about that now, other than look toward what we can do for the future."

As *Hawaii Business* went to press in August, Baptiste was busily meeting



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with state DOT executives, the city council and his county engineers to discuss varying strategies. One of his ideas is a five-year, use it or lose it ordinance, requiring any landowner to begin construction within five years of obtaining zoning entitlements. The idea is not to push people into development, but to make sure their plans are firm before the entitlement stage. Another long term idea, he suggests, is to request special congressional appropriations over and above what the state allocates to Kauai each year for road construction. In the past three years combined, Kauai got a mere \$27.4 million for CIP projects less than 6 percent of the statewide budget of \$465.2 million. Meanwhile, Kauai's general plan calls for a combined total of \$317 million to \$399 million worth of roadway improvements needed by 2020.

Yukimura suggests yet another solution—improving the public transportation system. She hopes to expand the county's bus service, which runs a handful of daily routes to and from Lihue, and suggests



PHOTO: KARIN KOVALSKY

JAM SESSION: From sun-up to sundown, traffic on Kauai has gotten downright unbearable.

doing promotional events to encourage people to ride. "Public transportation is one piece of the puzzle," she says. "But no matter what, it's definitely time to look at where we're going and whether we want to go there or not, and if we don't, we need to make some adjustments."

Baptiste couldn't agree more: "This is

no doubt going to be a challenge, and honestly, I believe a lot of the things we do now may not help today, but we definitely need to start putting in the structure necessary to prevent this from happening in the future, and also to make sure we create the kind of island we want for our future generations."

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ProjectType	District	Project Description	Housing Units	Permit	Status (April 2020)	Notes
Housing	East Kaua'i	Kapa`a 382 LLC Kulana	172	S-99-49	Moving forward	
Housing	East Kaua'i	Kealia Mauka Homesites	*235	NONE	Drafting LUC Petition	*Estimated unit count
Housing	East Kaua'i	Hokua Place	*769	NONE	Drafting LUC Petition	*Estimated unit count
Housing	Eleele	A&B Eleele Residential	201	PM-2005-376	Unknown	
Housing	Eleele	Lima Ola - County (Affordable)	*450	NONE	Master Plan complete	*Estimated unit count
Housing	South Kaua'i	Kōloa Creekside	72	Z-IV-2007-24	Ongoing	
Housing	South Kaua'i	Koae Housing Project	134	PDU-2007-28	Construction complete	
Housing	South Kaua'i	Kukui'ula	750	PM-2004-371	Final subdivision map approval for parcels M1, M4, Y	
Housing	South Kaua'i	The Village at Kōloa Town	34	Z-IV-2008-12	Unknown	
Housing	South Kaua'i	Kōloa Camp - Waihononu	*50	NONE	Unknown	*Estimated unit count
					Planning Commission approved	
Housing	South Kaua'i	CIRI (CLDC) Subdivision	10	SMA(U)-2015-1	8/26/2014	
					Planning Commission approved	
Housing	Līhu'e	RBM UMI	65	Z-IV-2020-9	2/28/2020	
Housing	Līhu'e	DHHL Wailua, Phase 1	*188	NONE	Unknown	*Estimated unit count
					Construction complete, entering	
Housing	Līhu'e	Ho'oluana	144	P.D.U. 2006-19	next phase	
Housing	Līhu'e	Grove Farm Wailani Residential	*1450	PM-326-96	Unknown	*Estimated unit count
Housing	Līhu'e	Koamalu	220	Z-IV-2009-6	Unknown	
Housing	Līhu'e	Waiola Phase I	47	S-2009-13	Tentative approval	
Housing	Līhu'e	Waiola Phase II	56	S-2009-14	Tentative approval	
Housing	Līhu'e	Waiola Phase II	93	S-2009-15	Tentative approval	
Housing	Waimea	Kikialoa - Field 14	67	PDU-2006-4	Underway	

EXHIBIT "I-21"



EXHIBIT "I-22"



EXHIBIT "I-23"

1 Introduction and Overview

Kapaa is a place of opportunity: Located where mountains meet the ocean and history exists side-by-side with modern life, Kapaa is home to a variety of unique shops and restaurants, resorts and hotels, and a large, growing residential population. However, unique places like Kapaa are often faced with constraints. Geography, resource availability, and environmental considerations have limited transportation options through the area. Kuhio Highway is the primary connection between Kapaa and the surrounding communities and is also the only route to access resort centers and attractions on the northern side of the island and the airport to the south.

The Nounou Mountain range, also known as the Sleeping Giant, is located west of Kapaa.

People are concerned about regional and local mobility and safety for all modes of travel; busy roadways create congestion, safety, economic, livability, and environmental issues. In an effort to identify these issues and alleviate these concerns, a number of studies on the Kapaa area transportation system have been performed over the past decades.

The Kapaa Transportation Solutions project is not merely another of these studies: it builds upon previous studies to develop and prioritize projects that will provide the most benefit for the cost, and that will be physically, fiscally, and socially feasible for implementation. Located in the eastern portion of Kauai, the Kapaa Transportation Solutions study area is bounded by the intersection of Kuhio Highway and Kapule Highway to the south, Kapaa Stream to the north, Wailua Homesteads to the west, and the Pacific Ocean to the east (**Exhibit 1-1**).

Project Purpose

The purpose of the Kapaa Transportation Solutions project is to develop “near- to mid-term” transportation solutions to address mobility needs and congestion for all modes of transportation in the Kapaa area. Developing solutions in the near-to mid-term range means that the recommendations from this study are anticipated to have a higher chance of implementation than recommendations from previous studies because they meet local and state goals and are also feasible to fund and construct.

EXHIBIT 1-1. Kapaa Transportation Solutions Study Area

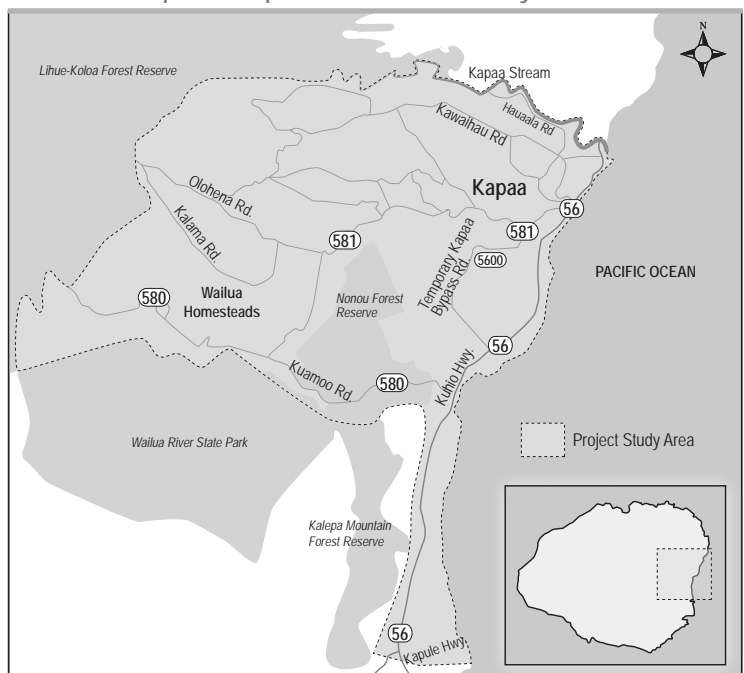


EXHIBIT "I-24"

There are several components to the project purpose:

- » Improve the mobility for all modes of transportation.
- » Develop near-term and mid-term solutions to address mobility and congestion needs.
- » Assess feasibility of near-term and mid-term solutions to shorten the project delivery process (linking planning, environmental assessment and project delivery).
- » Integrate sustainable highway efforts, including consideration of multimodal transportation and access; environmental, social, and economic impacts; safety; affordability; and accessibility

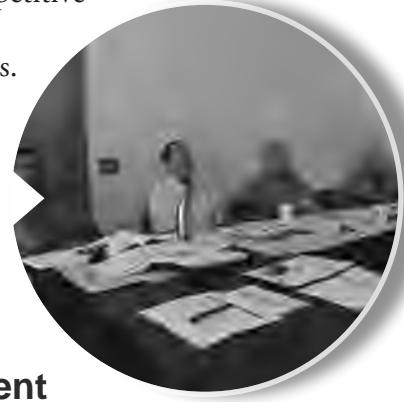
For the purposes of this project, capacity refers to a transportation facility's ability to accommodate a moving stream of people or vehicles in a given time period. Congestion occurs when traffic demand approaches the capacity of a road (or of the intersections along the road).

This project is tied to federal-aid highways, which are the National Highway System and all other public roads except those federally classified as local roads or rural minor collectors. These roads are critical for mobility for regional movements, including linkages among major sites (airports, harbors, industrial areas, military facilities, major communities, and primary urban centers) and support for commuter and freight travel. Federal classification of roadways is based on criteria established by the Federal Highway Administration (FHWA). Functional classification describes the desired characteristics of roadways, and is used for planning, design, budgeting, programming and fiscal management. **Exhibit 1-2** shows the federal functional classification of roadways in the Kapaa area.

This effort is a joint effort between the Hawaii Department of Transportation (HDOT) and the County of Kauai, who recognize that the Kapaa area transportation system must be looked at as a whole for this effort to be most effective. Improvements to county roads in this area could help relieve congestion on state

highways, and make the transportation system safer overall. The HDOT and County desire to move forward together to prioritize requests for federal funding in a way that fits with state and local needs (including those documented during previous planning studies) and is financially feasible and competitive for existing funding programs.

HDOT and County of Kauai staff at the kick-off meeting.



Purpose of this Document

This document explains the process used to develop recommendations for near- to mid-term solutions developed to address mobility needs and congestion for all modes of transportation in the Kapaa area, and includes prioritized recommendations paired with estimated costs, implementation strategies, and performance metrics. The document includes five sections:

- » ***Introduction and Overview*** – A description of the Kapaa Transportation Solutions project, its purpose, and its development process.
- » ***Goals and Objectives*** – A summary of the goals and objectives for the project, their purpose, and how they helped identify priorities.
- » ***Existing Context and Conditions*** – A description of existing land use and transportation in the Kapaa area.
- » ***Solutions and Recommendations*** – A listing of prioritized recommendations, including project descriptions and estimated costs.
- » ***Implementation*** – An outline of the project delivery (i.e., funding, design, and construction) strategies for key prioritized projects, and a description of how project effectiveness will be measured over time.

Study Development Process

The Kapaa Transportation Solutions project was developed to be consistent with the direction set forth in the recently updated Federal-Aid Highways 2035 Transportation Plan for the District of Kauai (June 2014). This district-level plan provides the policy basis for making land transportation decisions over the next 20 years in an economic environment with limited funding. The Kapaa Transportation Solutions project is a finer-grain look at specific recommendations for the Kapaa subarea of Kauai, especially those projects that could be implemented in less than 20 years.

The Kapaa Transportation Solutions process lasted 12 months and included nine major steps as part of the Work Plan (**Exhibit 1-3**). The Work Plan consisted of the following:

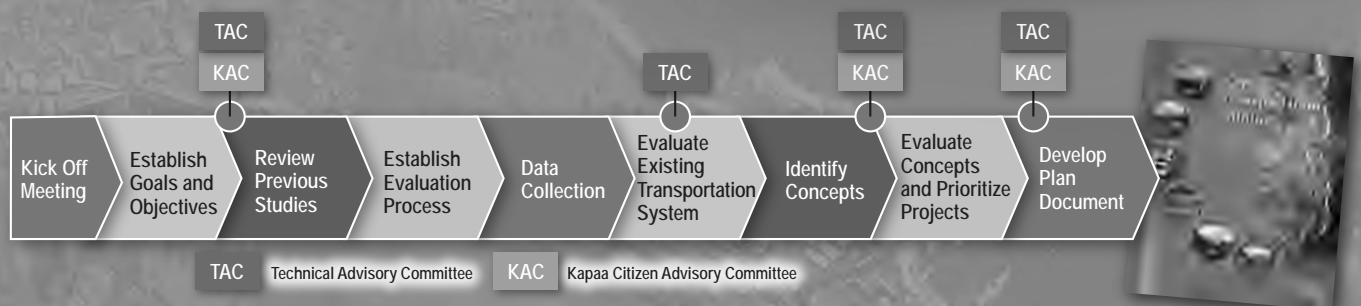
1. **Project Kick-off** – Established a common understanding of project purpose, content, and timeline.
2. **Establish Goals and Objectives** – Consistent with the federal Moving Ahead for Progress in the 21st Century Act (MAP-21) and local and state priorities, defined desired outcomes for projects and criteria by which to assess potential solutions.
3. **Review Previous Studies** – Ensured a shared understanding of previous work and created a foundation of prior knowledge and local and state interests.
4. **Establish Evaluation Process** – Using the goals and objectives developed for the plan, created a process for evaluation and prioritization of potential solutions.
5. **Data Collection** – Gathered data on land use and transportation in the Kapaa area.
6. **Evaluate Existing Transportation System** – Assessed the existing multi-modal transportation system for issues and opportunities for improvement.
7. **Identify Concepts** – Developed potential solution concepts (e.g., potential improvements to the transportation system such as additional sidewalks or intersection lane configuration changes) and vetted them with stakeholders.
8. **Evaluate Concepts and Prioritize Projects** – Using the established goals and objectives and evaluation process, applied criteria to the concepts to analyze which projects performed better than others according to stakeholder values.
9. **Develop Kapaa Sub-area Plan** – Summarized the project process, outcomes, and ways to measure effectiveness and success. Focused on strategies for implementation to ensure funding viability and smooth transitions from planning to environmental review to project delivery.

All steps included agency involvement via a Technical Advisory Committee (TAC) and public involvement through a Kapaa Citizen Advisory Committee (KAC). This process is described in the following paragraphs.

Stakeholder Involvement Process

The HDOT and the County designed the stakeholder involvement process for the Kapaa Transportation Solutions project to build on engagement processes and outcomes from previous planning efforts.









EXHIBIT 1-3. Kapaa Transportation Solutions Work Plan



The Kapaa Transportation Solutions process involved two stakeholder groups: the HDOT/ County of Kauai TAC and the local KAC. The TAC met four times and the KAC met three times.

The FHWA was also involved and attended stakeholder meetings, and provided input on the overall project process as well as on federal guidance.

The roles of the committees were as follows:

Technical Advisory Committee	Kapaa Citizen Advisory Committee
<p>The TAC provided technical input throughout the development of the project. Members shared the perspectives of their agencies as well as information about prior or ongoing work products and projects. The TAC acted as a communication link among jurisdictions and as liaison to their respective agencies.</p>	<p>The KAC provided a balanced representation of public interests for the project. Members shared their experiences and the perspectives of their organizations, and provided input at key decision points and throughout the process. The KAC acted as a communication link and liaison to their respective organizations/interest groups.</p>
<p>MEMBERS</p> <ul style="list-style-type: none"> » HDOT staff: Kauai District, Planning Branch, Design Branch, and Right-of-Way Branch » County of Kauai: Planning Department, Department of Public Works, and Transportation Agency » Federal Highway Administration (FHWA) 	<p>MEMBERS</p> <ul style="list-style-type: none"> » Kapaa Business Association » Kapaa High School » Kapaa Middle School » Wailua-Kapaa Neighborhood Association » Kauai Visitors and Convention Bureau » Kauai Path
 	     



The TAC provided technical input from the perspectives of their agencies and information about prior or ongoing work.

The KAC provided balanced representation of public interests and provided input at key decision points.



2 Goals and Objectives

Goals, objectives, evaluation criteria, performance measures, and targets are linked to the purpose of the Kapaa Transportation Solutions project, previously described in Chapter 1.

Chapter 2 summarizes the development of goals, objectives, and evaluation criteria for the Kapaa Transportation Solutions project, while Chapter 5, Implementation, discusses performance measures and targets and a plan for monitoring, evaluation, and reporting.

The development of goals and objectives is an important first step in a planning process, as they:

- » Ensure the plan builds effectively on previously adopted state, regional, and local plans and policies;
- » Ensure the plan shows consistency with federal and state requirements and guidance;
- » Guide development of project solutions and prioritized recommendations; and
- » Provide a foundation for the development of performance measures and targets to measure the effectiveness of the plan recommendations over time.



The KAC discussing goals and objectives of the study

Chapter 2 shows how that is achieved, through the following subsections:

- » Development of Goals, Objectives, and Evaluation Criteria
- » Moving Ahead for Progress in the 21st Century (MAP-21) and Performance-Based Planning
- » Planning and Environment Linkages

Clearly defined terminology is important to establishing a common understanding of the project and communicating project information. Consistent with the 2013 FHWA Performance-Based Planning and Programming guidance, the following terms are defined for the Kapaa Transportation Solutions project:

- » **Goal:** a broad statement that describes a desired end state.
- » **Objective:** a specific and measurable statement to guide actions to achieve the goal.
- » **Evaluation Criteria:** ways to measure if a potential solution is meeting an objective (and therefore working toward the goal). For this study, evaluation criteria were developed consistent with goals and used to evaluate and prioritize recommendations.
- » **Performance Measures:** metrics used to assess progress toward meeting a goal. For this study, performance measures are a subset of the evaluation criteria, and are used to evaluate the performance of the Kapaa Transportation Solutions project over time. To be effective, performance measures require a monitoring and reporting plan.
- » **Target:** a specific level of performance that is desired to be achieved within a certain timeframe. A target is an expression of a desired outcome. For this study, a meaningful, focused set of targets were developed — consistent with performance measures — to assess the effectiveness of the Kapaa Transportation Solutions project recommendations over time, and to inform future decision-making.

It is important to establish goals, objectives, and evaluation Criteria before identifying potential solutions to ensure that these items are not biased or tailored toward a specific solution. Goals and objectives are a written expression of the values of the different stakeholders involved with a planning process. Evaluation criteria are applied to each solution, and require analysis to show how well solutions perform in achieving project goals and objectives. The evaluation criteria show the advantages and disadvantages of the proposed solutions compared to each other. Using the evaluation criteria, solutions are prioritized for recommendation and ultimately programming of specific solutions back to the goals and objectives.

Development of Goals, Objectives, and Evaluation Criteria

For the Kapaa Transportation Solutions study, the project team considered the following in developing the study's goals, objectives, and evaluation criteria:

1. The purpose of the Kapaa Transportation Solutions project
2. Goals, objectives, and policies identified in previous plans and projects, based on previous input

3. Federal guidance outlined in MAP-21 Section 1203/23 United States Code (U.S.C.) 150 (National Goals and Performance Management Measures) and federal planning and environment linkages

4. Input from, and approval by, the Kapaa Transportation Solutions TAC and KAC

Draft goals, objectives, and evaluation criteria were vetted with the TAC and KAC and revised to ensure that they were consistent with local, regional, and state needs.

GOALS AND OBJECTIVES

The Goals and Objectives developed for the Kapaa Transportation Solutions process include primary goals and secondary goals. **Primary goals** are the most important goals for project decision-making and prioritization, and the most directly related to the project purpose.

Secondary goals are still critical, but have secondary importance for project decision-making. During the evaluation of solutions, scores for the primary goals were weighted twice as much as the scores for the secondary goals.

Exhibit 2-1 lists the goals and objectives for the Kapaa Transportation Solutions project.

The project team reviewed the following plans and policies to inform the development of the goals, objectives, and evaluation criteria. A full summary of the plans and policies is included in Appendix A.

- » Federal-Aid Highways 2035 Transportation Plan for the District of Kauai (HDOT, 2014)
- » Kauai General Plan (County of Kauai, 2000)
- » Kauai County Multi-Hazard Mitigation Strategy (County of Kauai, 2009)
- » Bike Plan Hawaii (HDOT, 2003)
- » Complete Streets Policies, HDOT and Kauai County (HDOT, 2010; County of Kauai, 2010a)
- » County of Kauai Operations Sustainability and Climate Action Plan (County of Kauai, 2014a)
- » Kauai Multimodal Land Transportation Plan (County of Kauai, 2013a)
- » Statewide Pedestrian Master Plan (HDOT, 2013a)
- » Draft Kauai Parks and Recreation Master Plan (County of Kauai, 2013b)
- » Draft East Kauai Community Plan 2035 (County of Kauai, 2010b)
- » Kapaa Relief Route, Hanamaulu to Kapaa, Pre-Draft Environmental Impact Statement (FHWA, 2010)
- » Kuhio Highway Short-Term Improvements, Kuamoo Road to Temporary Bypass Road, FEA (HDOT, 2009)
- » Kuhio Highway Widening Traffic Assessment Report (Wilson Okamoto, 2009)
- » Traffic Analysis Report for Kapaa Relief Route TSM Alternatives (HDOT, 2008a)
- » Kuhio Highway Traffic Operations Review, Wailua to Kapaa (Kimley-Horn, 2005)
- » Kapaa Traffic Circulation Study (HDOT, 2002)
- » County of Kauai Capital Budget FY 2015
- » Hawaii State Historic Bridge Inventory and Evaluation (HDOT, 2013b)

EXHIBIT 2-1. Kapaa Transportation Solutions Goals and Objectives

Primary Goals		Objectives
1	Develop transportation system projects that support the land use (e.g., businesses, parks, and schools).	<ul style="list-style-type: none"> » Provide transportation facilities that complement the neighboring land use. » Identify the appropriate functional classification of the roadways and design features. » Plan and design driveway (access management) treatments to appropriately and adequately support adjacent land uses (e.g., shared driveways and linkages off-system).
2	Improve regional vehicular/freight capacity and reduce congestion through Wailua and Kapaa.	<ul style="list-style-type: none"> » Develop north-south connections, <i>mauka</i> of Kuhio Highway, to provide alternate routes. Examine vehicle turn restrictions to/from Kuhio Highway. » Consider a variety of intersection treatments where high volumes of left turns occur from Kuhio Highway. » Consider an access management policy along Kuhio Highway.
3	Improve local vehicular/freight capacity and reduce congestion within Wailua and within Kapaa.	<ul style="list-style-type: none"> » Develop north-south connections, <i>mauka</i> of Kuhio Highway. » Improve connector roads to provide alternate routes (so local trips do not have to use Kuhio Highway). » Increase local connections between residential and business/retail districts.
4	Improve access and connectivity between the communities of Wailua, Waipouli, and Kapaa.	<ul style="list-style-type: none"> » Improve east/west connector roads to provide access options between communities. » Maintain accessibility between communities <i>mauka</i> of Kuhio Highway.
5	Efficiently plan and implement effective mobility solutions within a short time frame (5 to 10 years).	<ul style="list-style-type: none"> » Improve coordination of plans and resources and build upon previous designs or plans. » Improve efficiency of planning and delivery of projects.
6	Minimize project costs.	<ul style="list-style-type: none"> » Minimize project costs through efficient planning and implementation. » Use transportation funds efficiently. » Explore other/creative funding opportunities.
7	Create a balanced, multimodal Complete Streets transportation network that provides options and access for bicyclists and pedestrians.	<ul style="list-style-type: none"> » Improve multimodal facilities to encourage a shift in travel mode from vehicles to non-motorized modes. » Improve pedestrian and bicycle access through historic Kapaa Town. » Encourage shared, non-motorized paths and trails in strategic areas (between schools, shoreline, and town centers). » Encourage bike lanes and sidewalks on all new roadways, where appropriate. » Evaluate the complete streets network (improve on non-motorized 'grid' connections).
Secondary Goals		Objectives
8	Improve safety of the community and maintain safe operations for all transportation modes.	<ul style="list-style-type: none"> » Reduce the number of traffic collisions involving serious injuries and fatalities. » Reduce the potential for conflicts between motorized modes and non-motorized modes. » Provide alternate access or emergency access to all parts of East Kauai, especially in locations that currently have a single ingress/egress roadway. » Avoid roadway configurations that increase the potential for unsafe transportation conditions. » Increase the resiliency of the transportation facility.
9	Promote transit use.	<ul style="list-style-type: none"> » Improve public transit facilities. » Improve and/or increase transit services. » Improve intermodal connections (improve transit/pedestrian/bicycle connections). » Increase/encourage the use of park-n-rides.
10	Promote the expansion of historical Kapaa's economy through efficient and effective use of transportation facilities and amenities.	<ul style="list-style-type: none"> » Increase public parking in Kapaa's retail areas. » Develop and pursue funding mechanisms, including metered parking and a parking district, for public parking in Kapaa. » Identify locations for street parking. » Market/highlight public transit to tourists, promote transit as an effective alternative to driving when visiting historic Kapaa town.

11	Minimize impacts to rights-of-way.	<ul style="list-style-type: none"> » Develop improvements to minimize the amount of right-of-way take. » Identify improvements that can be implemented on right-of-way currently owned by HDOT or project partners. » Investigate land swaps with other government agencies to acquire right-of-way.
12	Maintain the rural character of the project area.	<ul style="list-style-type: none"> » Provide transportation facilities that complement the rural character (limit the use of urban road features, such as curb and gutter). » Focus and/or limit development or alter land use designations in Kapaa to reduce vehicle generation. » Limit residential growth on agricultural lands in Wailua and Kapaa.
13	Preserve and enhance Kauai's natural environment.	<ul style="list-style-type: none"> » Reduce environmental impacts. » Minimize impacts to wetlands, shoreline, streams, and environmentally sensitive areas. » Avoid, minimize, and provide reasonable measures to mitigate degradation of cultural resources and the environment caused by transportation facilities and operations. » Provide transportation facilities that complement the natural environment and enhance quality of life.

EVALUATION CRITERIA

Evaluation criteria are measurable and are used to evaluate potential solutions by measuring how well they address the goals and objectives. For the Kapaa Transportation Solutions study, the project team used evaluation criteria to assess the ability of projects to best meet the goals and objectives. In coordination with input from the TAC and KAC, the evaluation criteria were assigned weights indicating importance related to the project purpose. The results of the evaluation were shared with the TAC and KAC for review and comment. The application of evaluation criteria to the projects is a tool to assist with decision-making for project prioritization and programming. Chapter 4 discusses the Kapaa Transportation Solutions evaluation process in greater detail.

Exhibit 2-2 shows when in the project process the evaluation criteria were established (early in the process) and then when they were applied to the solutions (later in the process).

The evaluation criteria fall within the goals and objectives, and cover the following topics, consistent with the scope of the Kapaa Transportation Solutions project:

- » Land use
- » Mobility (regional and local)
- » Access and connectivity
- » Implementation (timeline and cost)
- » Safety
- » Multimodal options
- » Economic vitality
- » Property impacts
- » Natural environment

The Plan's primary goals are associated with the land use, mobility, access and connectivity, implementation, and multimodal options criteria categories, while the Plan's secondary goals are associated with the property impacts, economic vitality, safety, and natural environment criteria categories.

EXHIBIT 2-2. Evaluation Criteria Development and Application

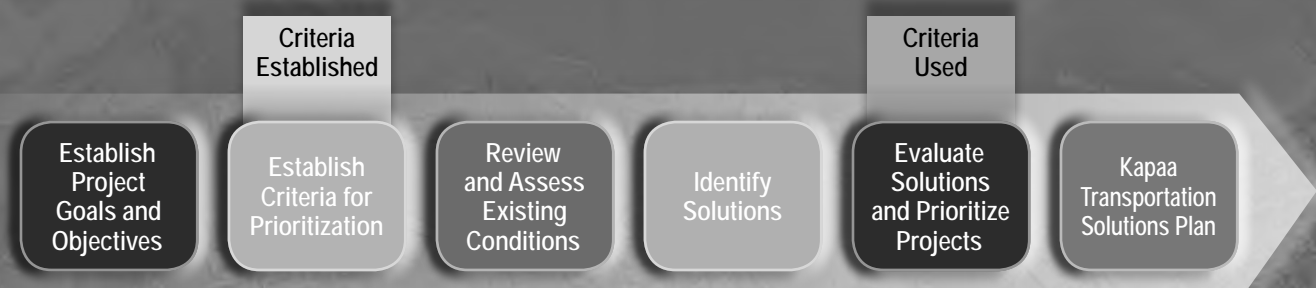


Exhibit 2-3 shows the Evaluation Criteria and scoring framework for the Kapaa Transportation Solutions project.

EXHIBIT 2-3. Kapaa Transportation Solutions Evaluation Criteria

Primary Goals		Evaluation Criteria Category and Description	Evaluation Criteria Scoring
1	Develop transportation system projects that support the land use (e.g., businesses, parks, and schools).	Land Use Does the solution support: » The Kauai General Plan? » The HDOT Functional Classification? » Future Conditions?	1: Solution does not support any of the sources. 3: Solution supports at least one source. 5: Solution supports all three sources.
2	Improve regional vehicular/freight capacity and reduce congestion through Wailua and Kapaa.	Mobility (Regional) Does the solution improve capacity and increase throughput (number of users) by reducing delay and travel times?	1: Solution significantly worsens vehicle delay. 3: Solution has no or little impact on the ability to move traffic efficiently. 5: Solution significantly improves vehicle delay.
3	Improve local vehicular/freight capacity and reduce congestion within Wailua and within Kapaa.	Mobility (Local) Does the solution improve capacity and increase throughput (number of users) by reducing delay and travel times?	1: Solution significantly worsens vehicle delay. 3: Solution has no or little impact on the ability to move traffic efficiently. 5: Solution significantly improves vehicle delay.
4	Improve access and connectivity between the communities of Wailua, Waipouli, and Kapaa.	Access and Connectivity Does the solution: » Provide additional access to the communities? » Develop connectivity between communities without accessing Kuhio Highway? » Implement Access Management policies on Kuhio Highway?	1: Solution does not meet any of the three criteria. 3: Solution meets at least one criterion. 5: Solution meets all three criteria.
5	Efficiently plan and implement effective mobility solutions within a short time frame (5-10 years).	Implementation What is the estimated time frame of the solution?	1: Over 10 years 3: Between 5 and 10 years 5: Less than 5 years
6	Minimize project costs.	Implementation What is the estimated cost of the solution?	1: Project is over \$5 million. 3: Project is under \$5 million. 5: Project is under \$1 million.
7	Create a balanced, multimodal Complete Streets transportation network that provides options and access for bicyclists and pedestrians.	Multimodal Options » Does the solution support the following HDOT Complete Streets Policy principles? – Accessibility and mobility for all – Plan and design transportation facilities for ease of use and access to destinations by providing an appropriate path of travel for all users. – Use and comfort for all – Ensure all users of all abilities (including bicyclists, pedestrians, transit riders, and drivers) feel safe using the system. » Does the solution provide safe and convenient options for transfer between modes, such as park and ride facilities, bicycle parking at transit stops, and safe bicycle and pedestrian routes to convenient transit stops?	1: Solution does not support any of the criteria. 3: Solution meets either the Complete Streets Policy principles or modal transfer criterion. 5: Solution supports both the Complete Streets Policy principles and the modal transfer criterion.

Secondary Goals		Evaluation Criteria Category and Description	Evaluation Measures and Scores
8	Improve safety of the community and maintain safe operations for all transportation modes.	Safety Does the solution: <ul style="list-style-type: none"> » Manage access to and from Kuhio Highway through signalized intersections, turn lanes, or restricted movements? » Reduce or minimize the potential for conflicts between vehicles and non-motorized modes? » Improve roadway design standards, such as removing or relocating fixed objects, steep grades, or ditches from critical locations alongside roadways? » Provide an alternate route during an emergency? 	1: Solution does not meet any of the criteria. 3: Solution meets at least one criterion. 5: Solution meets at least three criteria.
9	Promote transit use.	Multimodal Options Does the solution: <ul style="list-style-type: none"> » Expand transit service? » Improve transit frequency? » Improve public transit facilities, such as park-n-rides, bike racks, bus shelters? 	1: Solution does not meet any of the three criteria. 3: Solution meets at least one criterion. 5: Solution meets all three criteria.
10	Promote the expansion of historical Kapaa's economy through efficient and effective use of transportation facilities and amenities.	Economic Vitality Does the solution: <ul style="list-style-type: none"> » Increase access for all modes within the historical Kapaa retail district? » Improve mobility for visitors and residents through the historical Kapaa retail district along Kuhio Highway? » Increase the number of parking stalls within the historical Kapaa retail district? 	1: Solution does not meet any of the three criteria. 3: Solution meets at least one criterion. 5: Solution meets all three criteria.
11	Minimize impacts to right-of-way.	Property Impacts Does the solution require right-of-way acquisition from private property owners?	1: Solution requires right-of-way acquisition and affects more than three private property owners. 3: Solution requires right-of-way acquisition and affects more than one private property owners. 5: Solution does not require right-of-way acquisition from private property owners.
12	Maintain the rural character of the project area.	Natural Environment Does the solution have an impact on Kauai's rural character?	1: Solution results in significant impact on Kauai's rural character. 3: Solution results in minimal impact on Kauai's rural character. 5: Solution maintains or enhances Kauai's rural character.
13	Preserve and enhance Kauai's natural environment.	Natural Environment Does the solution preserve the natural environment and avoid or minimize impacts to natural resources (e.g. wetlands, streams, and air quality)?	1: Solution results in significant environmental impact or requires environmental documentation. 3: Solution results in minimal impact on natural resources. 5: Solution preserves or complements the natural environment.

MAP-21 and Performance-Based Planning

The HDOT and County of Kauai identified efficient implementation of Kapaa Transportation Solutions projects as a key desired outcome. To ensure the time, effort and dollars spent between the planning and implementation stages of a project are as streamlined as possible, the goals, objectives, and evaluation criteria must align with funding streams and state and federal requirements.

MAP-21 is federal legislation that in July 2012, replaced and supplemented portions of the prior federal transportation legislation, SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). MAP-21 Section 1203 states that the federal-aid highway program should focus on seven national goals:

National Goals

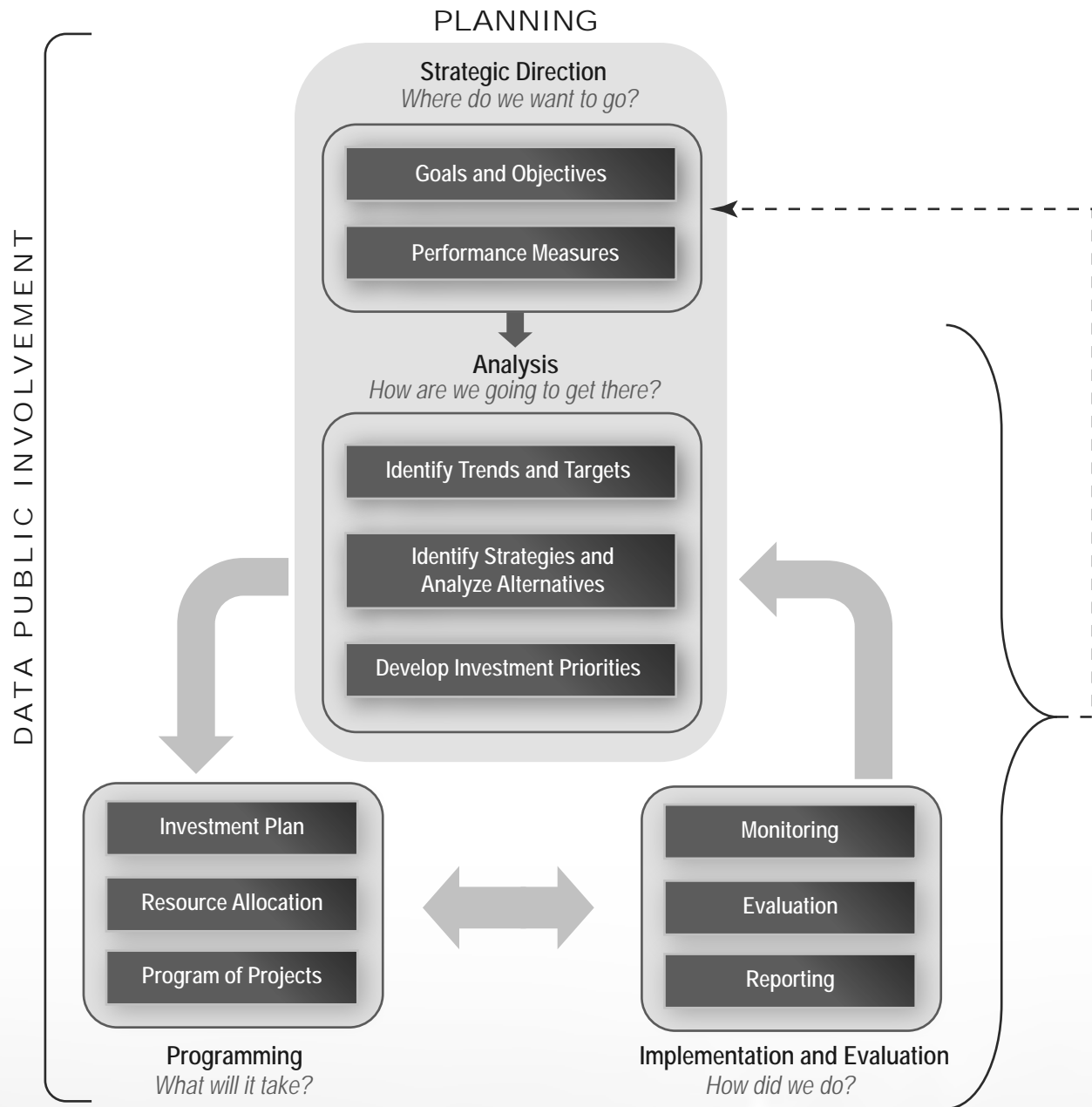
1. **Safety** – Significantly reduce traffic fatalities and serious injuries on all public roads.
2. **Infrastructure Condition** – Maintain highway infrastructure assets in good state of repair.
3. **Congestion Reduction** – Significantly reduce congestion on the National Highway System.
4. **System Reliability** – Improve the efficiency of the surface transportation system.
5. **Freight Movement and Economic Vitality** – Improve freight networks, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
6. **Environmental Sustainability** – Enhance transportation system performance while protecting and enhancing the natural environment.
7. **Reduced Project Delivery Delays** – Reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

The broad MAP-21 goals were integrated into the development of the goals and objectives for the project. **Exhibit 2-5** shows how the Kapaa Transportation Solutions goals are linked with MAP-21 national goals, as well as how the goals and data used for application of evaluation criteria demonstrate planning and environmental linkages, which will be discussed in the next section of this Chapter.

Following MAP-21, the United States Department of Transportation (USDOT) will be establishing performance measures through rulemaking. The rulemaking will integrate performance into many transportation programs and processes. Performance management, as stated in 23 U.S.C 150 (Declaration of Policy), is intended to “ . . . *transform the Federal-aid highway program and provide a means to the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing the accountability and transparency of the Federal-aid highway program, and improving project decision-making through performance-based planning and programming.*” With limited funding for all state highway and local programs, it is critical that investments are targeted toward desired outcomes.

Performance-based planning is a planning process that integrates and embeds performance management concepts by using data to support decision-making. According to the FHWA *Performance Based Planning and Programming Guidebook* (2013), “*It generally starts with a vision and goals for the transportation system, selection of performance measures, and use of data and analysis tools to inform development of investment priorities, which are then carried forward into shorter-term investment planning and programming.*” The project team integrated principles of Performance-Based Planning and Programming throughout the planning process. **Exhibit 2-4** depicts the components of a Performance-Based Planning and Programming approach, such as that used for the Kapaa Transportation Solutions project.

EXHIBIT 2-4. FHWA Framework for Performance-Based Planning and Programming



(Source: FHWA, 2013)

Planning and Environment Linkages

The concept of creating a more efficient transition between longer-range planning processes and more finely grained environmental processes has been around for a long time. The idea is to streamline the amount of time from project conception to implementation. It is often the case that longer-range planning processes are conducted separately from environmental review processes, and often involve different staff, which can lead to redundancies.

According to FHWA, *“Planning and Environment Linkages (PEL) represents a collaborative and integrated approach to transportation decision-making that 1) considers environmental, community, and economic goals early in the transportation planning process, and 2) uses the information, analysis, and products developed during planning to inform the environmental review process.”* 23 U.S.C. 168 (f) (3) focuses on the ability to use results from a planning process in the environmental review process. Fairly recent Council on Environmental Quality (CEQ) guidance also expands the types of projects that may be considered a Categorical Exclusion (a less-intensive environmental review than an Environmental Assessment or an Environmental Impact Statement). Rulemaking to implement the provisions of 23 U.S.C. 168 is currently underway.

The Kapaa Transportation Solutions project was designed as an integrated approach to decision-making, and the development of goals, objectives, and evaluation criteria considered environmental, community, and economic goals early in the process.

Sub-area planning is one of the tools recommended for linking the planning and environmental review stages of a project, because it is a logical process including screening of alternatives and preliminary identification of environmental impacts.

The Kapaa Transportation Solutions project includes the logical and transparent development of goals, objectives, evaluation criteria, performance measures, and targets to document the decision-making process for future implementation. Several of these include evaluation of elements that would need to be examined during a subsequent environmental process. Although the Kapaa Transportation Solutions effort was focused primarily on shorter-term, lower-cost and lower-impact solutions, most of the recommendations require an environmental process, and will have the documentation from this planning effort to avoid duplication of products and process.

The Kapaa Transportation Solutions project included several goals, objectives, and evaluation criteria designed to minimize impacts considered in an environmental process. For example, minimization of impacts to private property, preservation and enhancement of Kauai’s natural environment, maintenance of the rural character of the project area, minimizing project cost, and considering projects that can be implemented in a shorter time frame all relate to documenting and minimizing impacts.

Exhibit 2-5 shows how the Kapaa Transportation Solutions goals are linked with the application of planning and environmental linkage principles.

EXHIBIT 2-5. Project Goals and Relationship to MAP-21 and Planning and Environment Linkages

	Primary Project Goals	MAP-21 National Goals	Planning/Environment Linkages
1	Develop transportation system projects that support the land use (e.g., businesses, parks, and schools).	» Congestion Reduction » System Reliability	» Land use compatibility documented for future efforts; issues red-flagged
2	Improve regional vehicular/freight capacity and reduce congestion through Wailua and Kapaa.	» Congestion Reduction » System Reliability » Freight Movement and Economic Vitality	» Vehicle traffic documented for future efforts
3	Improve local vehicular/freight capacity and reduce congestion within Wailua and within Kapaa.	» Congestion Reduction » System Reliability » Freight Movement and Economic Vitality	» Vehicle traffic documented for future efforts
4	Improve access and connectivity between the communities of Wailua, Waipouli, and Kapaa.	» Congestion Reduction	» Vehicle traffic documented for future efforts
5	Efficiently plan and implement effective mobility solutions within a short time frame (5-10 years).	» Congestion Reduction » Reduced Project Delivery Delays	» May avoid necessity for intensive environmental review (smaller-footprint projects)
6	Minimize project costs.	» Reduced Project Delivery Delays	» May avoid necessity for intensive environmental review (smaller-footprint projects)
7	Create a balanced, multimodal Complete Streets transportation network that provides options and access for bicyclists and pedestrians.	» Congestion Reduction » Environmental Sustainability	» Documents multimodal transportation system for future efforts
	Secondary Project Goals	MAP-21 National Goals	Planning/Environment Linkages
8	Improve safety of the community and maintain safe operations for all transportation modes.	» Safety	» Safety issues documented for future efforts
9	Promote transit use.	» Congestion Reduction » Environmental Sustainability	» May avoid necessity for intensive environmental review; shapes nature of recommendations
10	Promote the expansion of historical Kapaa's economy through efficient and effective use of transportation facilities and amenities.	» Freight Movement and Economic Vitality	» Examination of historical resources and existing land use to inform placement of transportation facilities to best enhance economic growth
11	Minimize impacts to rights-of-way.	» Reduced Project Delivery Delays » Environmental Sustainability	» May avoid necessity for intensive environmental review
12	Maintain the rural character of the project area.	» Environmental Sustainability	» May avoid necessity for intensive environmental review
13	Preserve and enhance Kauai's natural environment.	» Environmental Sustainability	» Examination of wetlands, streams, air quality, archaeological/historical resources

3 Existing Context and Conditions

The purpose of the Kapaa Transportation Solutions project is to develop nearer-term transportation solutions to address mobility needs and congestion for all modes of transportation in the Kapaa area. To develop appropriate solutions, it is important to have a common understanding of the existing land use and transportation context and issues. In addition, an assessment of existing vehicle traffic conditions provide the baseline for projecting future traffic conditions — and future potential problem areas — so that the solutions developed as part of this study are forward-looking.

Chapter 3 describes the following for the Kapaa area:

- » Existing Land Use Conditions
- » Existing Socioeconomic Conditions
- » Existing Land Transportation System Conditions
- » Existing Wetlands
- » Existing Historic and Archaeological Sites

Land Use Conditions

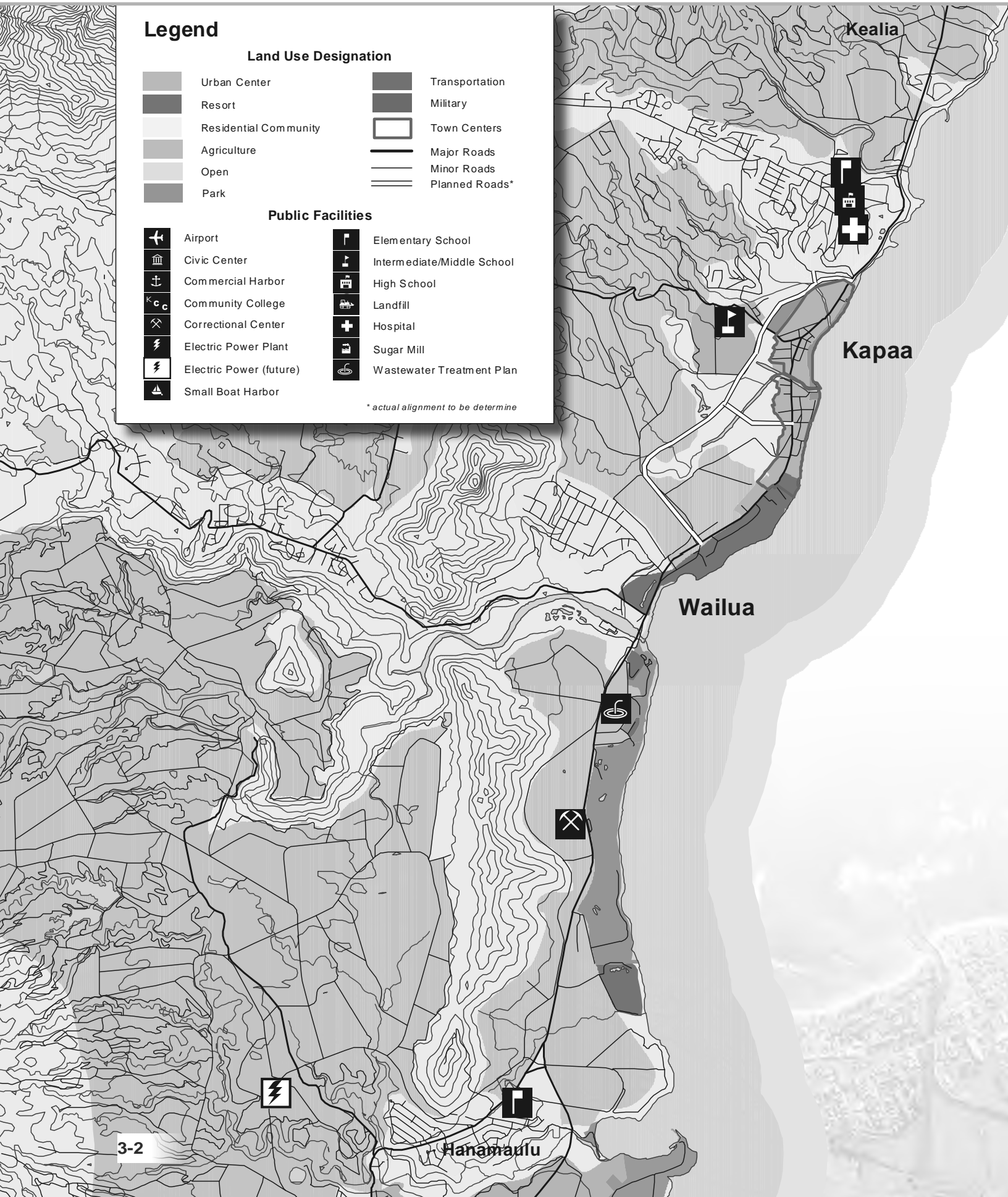
Land use is important to transportation planning because the type (e.g., commercial, residential, industrial, parkland, or military,) and use (e.g., higher-density apartments vs. single-family residential homes or gas stations vs. office buildings) affect the demand for transportation services such as roadways, transit, bike facilities, or walkways. Likewise, the availability and type of transportation services can affect the ways that land is developed. Land use considerations for Kauai include concentrating future growth in developed, urban areas, and preserving open spaces and maintaining the agricultural nature of the island. The Kapaa area is more urban than most other areas of Kauai, and is expecting additional residential and commercial growth.

Exhibit 3-1 shows the Kauai General Plan (County of Kauai, 2000) land use designations within the study area. Land use designations are districts adopted by government agencies (in this case, the County of Kauai) to shape the type and location of future development and redevelopment. Lands adjacent to Kuhio Highway on both sides, between the northern end of the Temporary Kapaa Bypass Road and approximately Pouli Road, are designated as urban centers. This coincides with the current uses in the shopping and historic downtown districts. The only other area designated as urban is situated just *mauka* of the Temporary Kapaa Bypass Road and Olohena Road roundabout. This land is currently undeveloped.

The land adjacent to and *makai* of Kuhio Highway, approximately south of Pouli Road to Kuamoo Road, is designated for resort use, while the majority of the remaining land in the study area is designated as open space or for agricultural or residential community uses.

The Kauai General Plan provides policy guidance related to growth and development while recognizing unique assets in towns and communities. Per the Plan, guidance includes concentrating new growth in and around the Waipouli–Kapaa urban center, on Department of Hawaiian Home Lands properties in Anahola, and on former sugar lands between Olohena Road and the Wailua Houselots. Trip development along Kuhio Highway and zoning changes that would increase residential density and impacts on public facilities and services in the Wailua and Kapaa Homestead areas should also be avoided.

EXHIBIT 3-1. Land Use Map, Kauai County General Plan (2000)



Socioeconomic Conditions

Socioeconomic characteristics influence transportation demands and need to be considered when providing transportation infrastructure and services. Relevant socioeconomic data include information on population, households, employment, and the visitor industry. The data are important because they can influence trip generation and destinations. Trips are typically generated from households, for example: Trip destinations are related to activities such as employment, schools, shopping, and recreation.

POPULATION

The majority of Kauai's population resides on the eastern side of the island. In 2010, the island's population was approximately 67,100 residents. Nearly 21,000 residents, or 31 percent of the island's total population, lived in East Kauai, which includes Wailua, Waipouli, Kapaa, and Anahola. By 2020, East Kauai's population is anticipated to increase by nearly 7 percent, to 22,400 residents (County of Kauai, 2014b).

Exhibit 3-2 shows the population density in the study area in terms of the number of residents per square mile by census block. According to the 2010 census, the most densely populated census blocks are located in Kapaa along Kawaihau Road, in Wailua along Haleilio Road, and in the Wailua Homesteads near the *mauka* end of Kuamoo Road.

People of all income levels live on Kauai, with less than 20 percent of the study area's population living below the poverty line. The poverty threshold is set nationwide through the United States Census and is based on the number of individuals in a household and the yearly annual income of the household. The poverty low-income level is adjusted annually to reflect inflation. The percentage of the population living below the poverty line is estimated from census data and reported by the American Community Survey. On average, less than 20 percent of Kapaa's population and less than 10 percent of Wailua's population lives below the poverty line (HDOT, 2014). Households and individuals that fall below the poverty level may be limited in driving because of the cost, and may walk or ride transit more often to access services and go to work.

A person's age can sometimes influence their travel method. Some older adults may choose not to drive a personal motor vehicle, while children and young adults are unable to own and operate a motor vehicle on their own.

Exhibits 3-3 and 3-4 depict the percentage of each census block population that is over the age of 65 and the percentage of population under the age of 20, respectively. In the majority of census blocks within the study area, between 20 and 30 percent of the population is over the age of 65. Less than 30 percent of the population is under the age of 20.

EXHIBIT 3-2. Population Density by Census Block, 2010 US Census

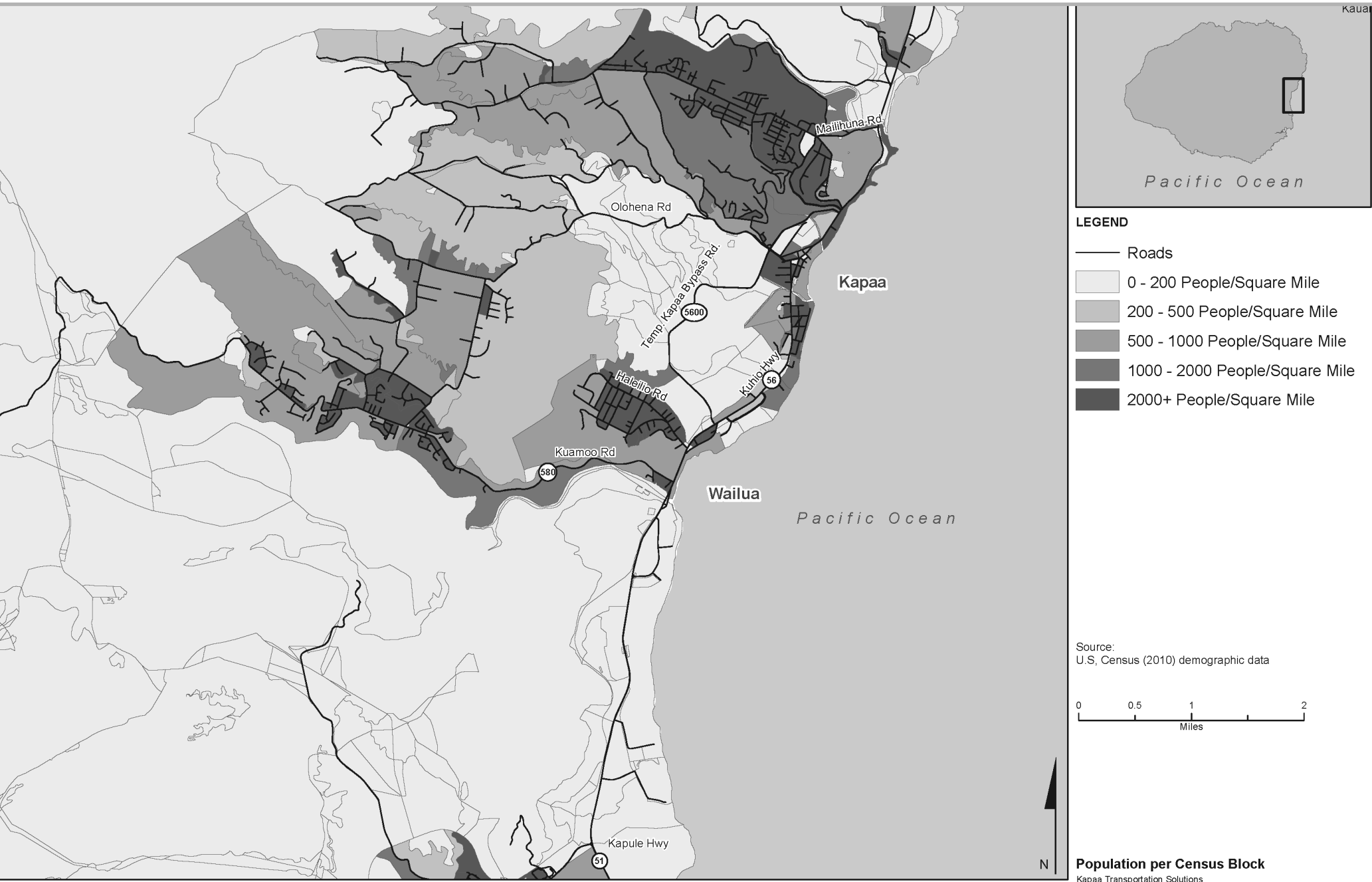


EXHIBIT 3-3. Population over 65 years of Age, by Census Block, 2010 US Census

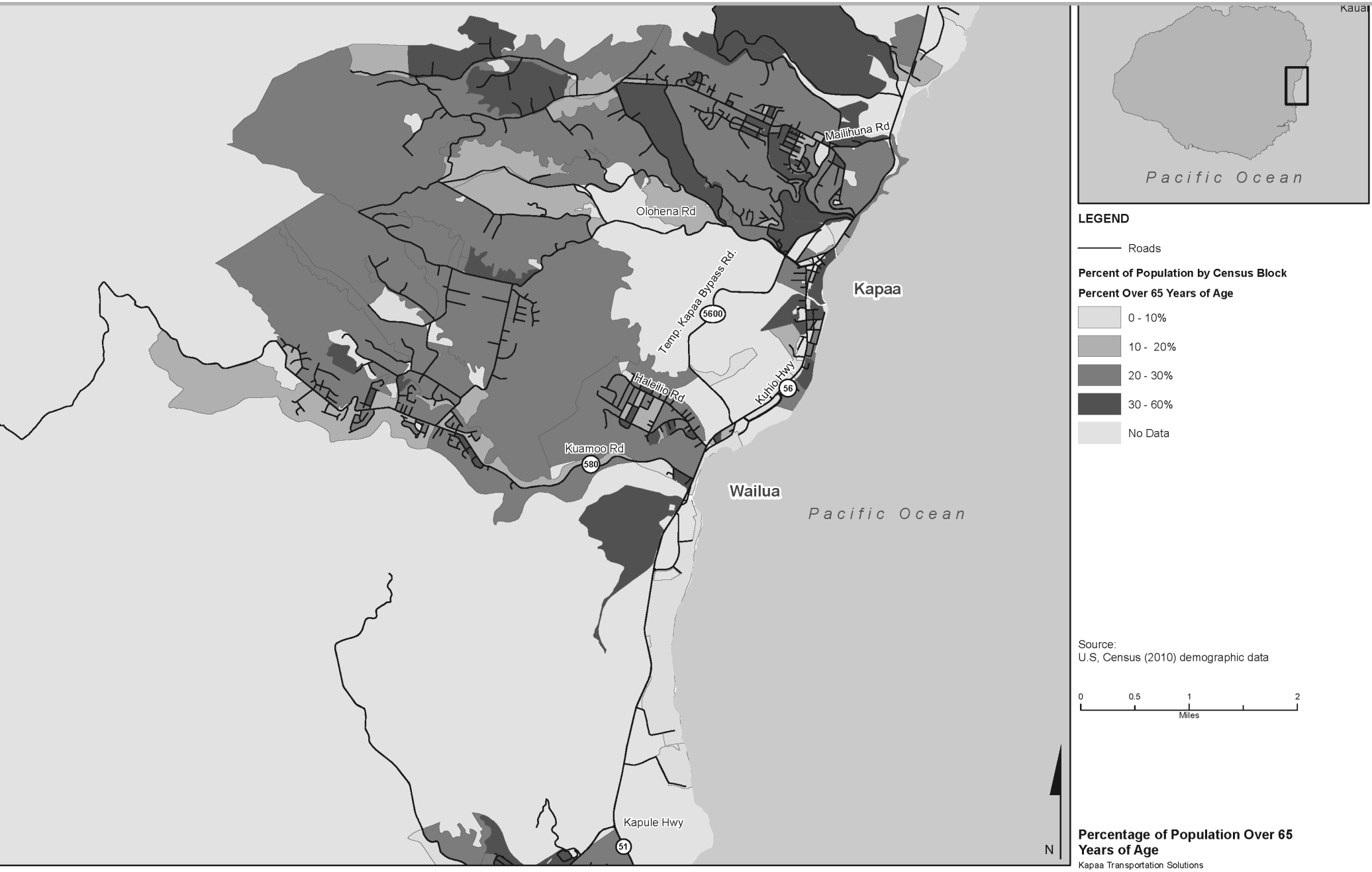
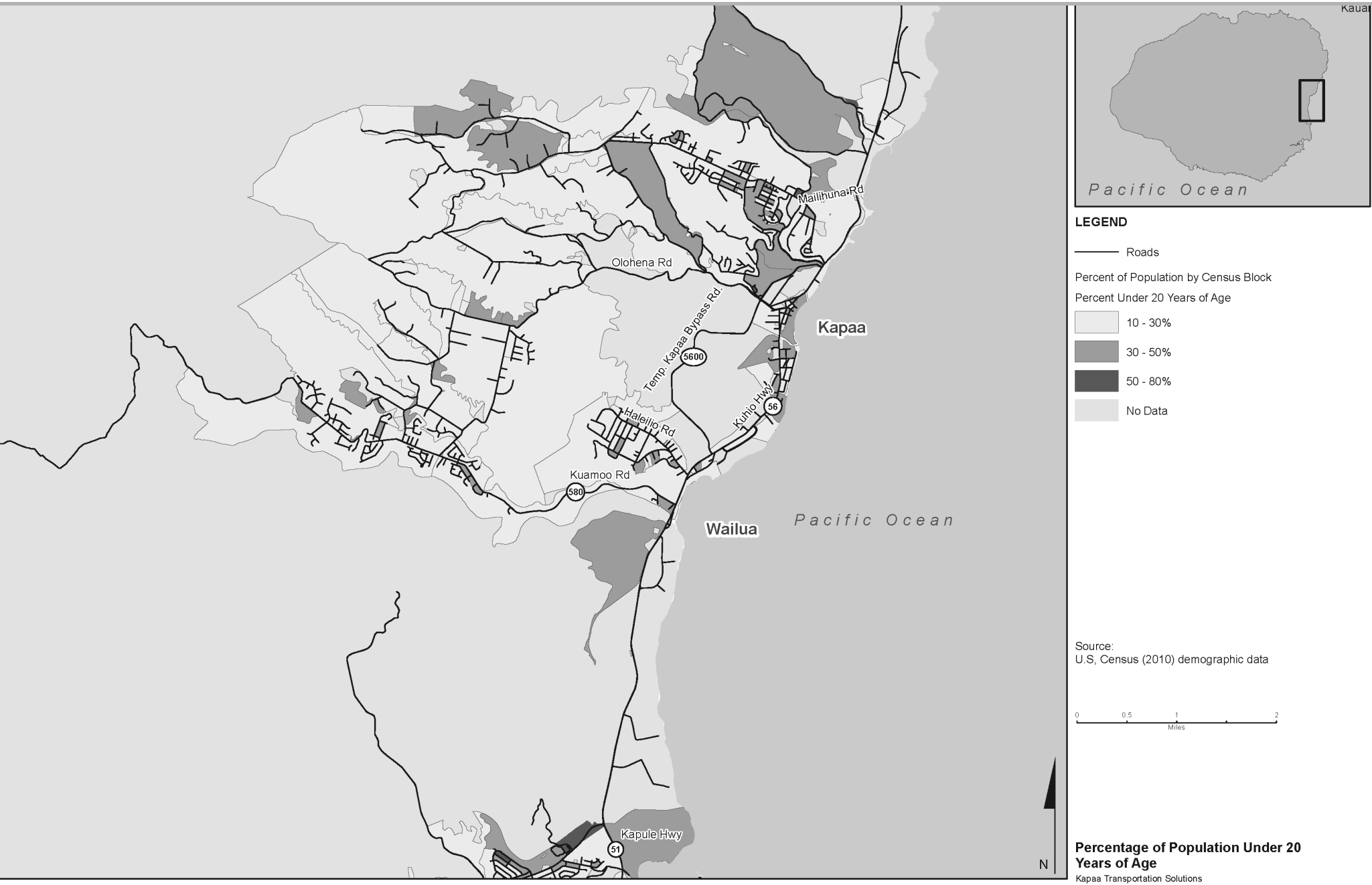


EXHIBIT 3-4. Population under 20 years of Age, by Census Block, 2010 US Census



HOUSEHOLDS

In 2010, nearly 7,200 households were located in East Kauai. Similar to population distribution, households in east Kauai represented 31 percent of all households on the island. The average number of persons per household on Kauai in 2010 was 2.89 persons (County of Kauai, 2014b). Based on the most recent census information, the average number of persons per household in the study area is 2 or 3 persons, which is comparable to the island-wide average. Assuming the persons-per-household ratios remain similar to the trends reported since 2010, the average number of persons per household is anticipated to increase to 2.90 by the year 2035.

The distribution of existing households in the study area is shown in **Exhibit 3-5**. The Wailua Homestead area has the greatest number of households in the study area, while the downtown district and the area bisected by the Temporary Kapaa Bypass Road have the fewest number of households (HDOT, 2014).

EMPLOYMENT

Kauai supported approximately 28,200 jobs island-wide in 2010, with nearly 4,570 of those jobs, or roughly 16 percent, located in East Kauai (County of Kauai, 2014b). The majority of these jobs are located in the downtown/historic district of Kapaa or in the resort destinations in Waipouli, and primarily include positions in service occupations and retail occupations (HDOT, 2014). The remaining study area supports relatively few jobs. The distribution of employees within the study area is shown in **Exhibit 3-6** (HDOT, 2014).

Assuming the percentage of the population in the job pool remains similar to current conditions and the unemployment rate is similar to the average for the past decade, the number of jobs in 2020 could increase by approximately 14 percent to nearly 5,200 jobs in East Kauai.

EXHIBIT 3-5. Number of Households, by TAZ, Federal-Aid Highways 2035 Transportation Plan for the District of Kauai, 2014

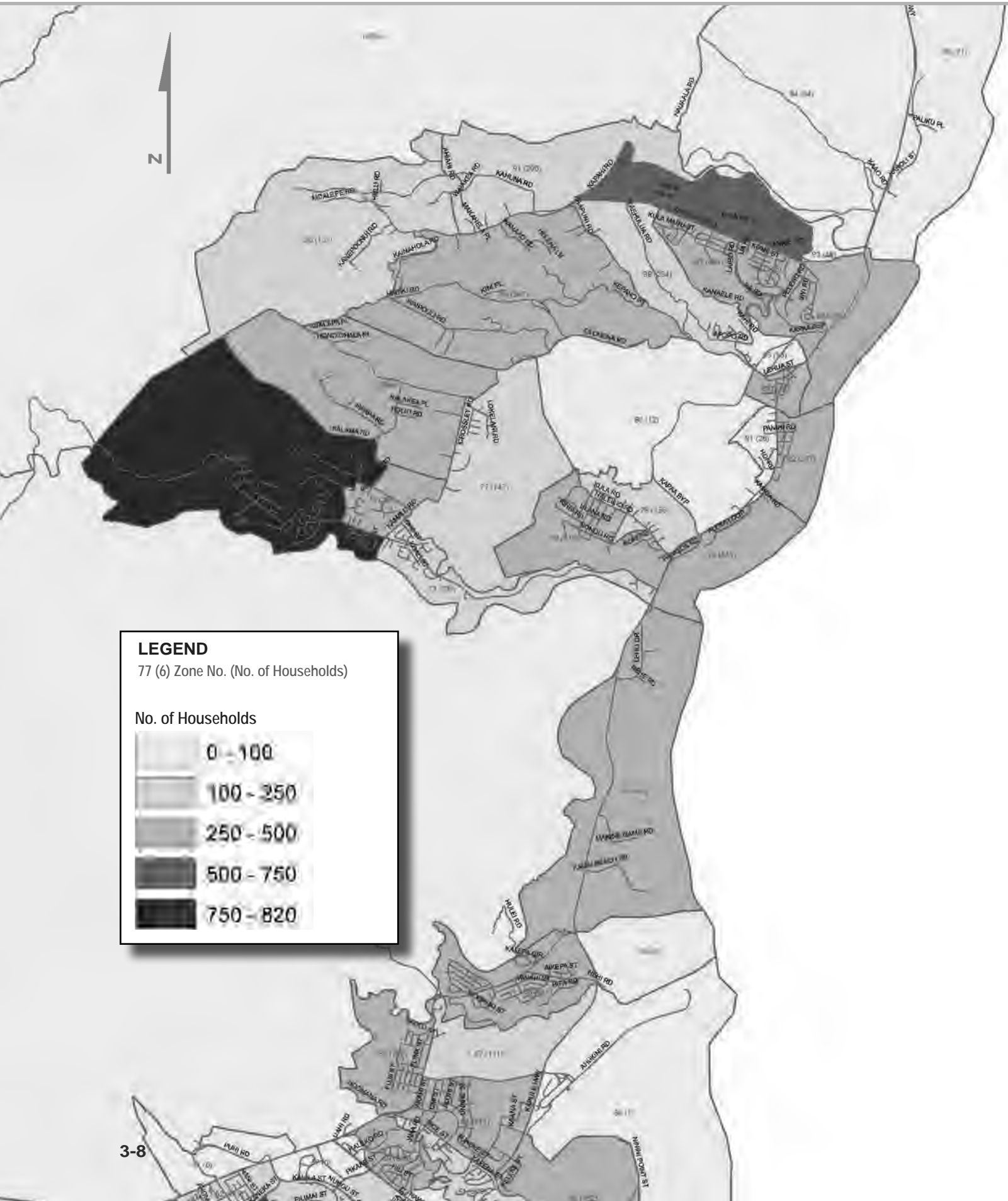
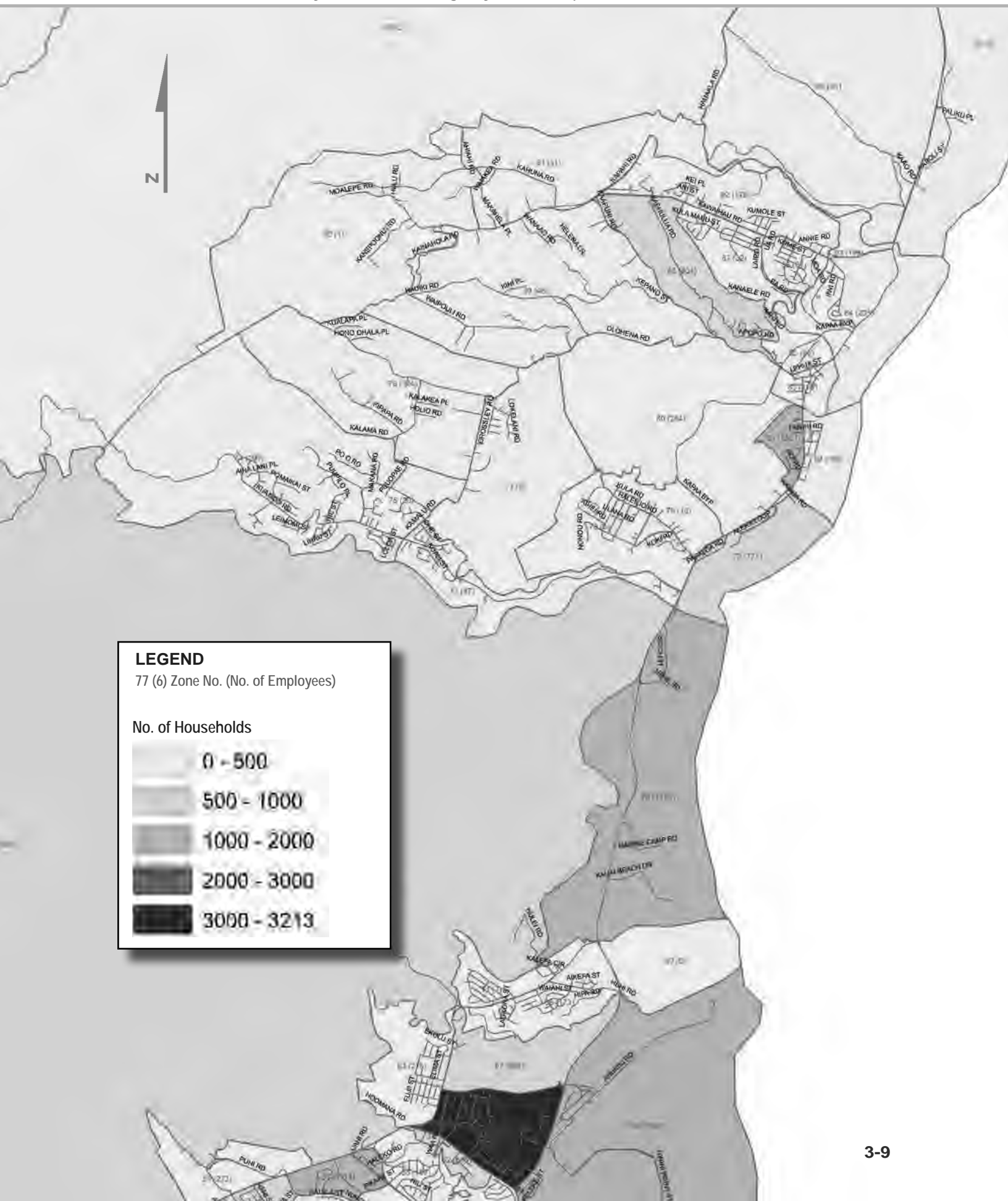


EXHIBIT 3-6. Number of Jobs, by TAZ, Federal-Aid Highways 2035 Transportation Plan for the District of Kauai, 2014



VISITOR INDUSTRY

The visitor industry is Kauai's leading economic sector. Visitors arrive via the island's single passenger airport in Lihue, which conveys nearly three million air passengers each year (2007 data [HDOT, 2008b]), or via Nawiliwili Harbor, which services the visitor industry through cruise ship accommodations. The HDOT Harbors Division estimates that nearly 456,000 cruise ship passengers were accommodated at Nawiliwili Harbor in 2007.

There are over 2,000 visitor accommodations (rooms) in the study area. Nearly all of these hotel rooms and condos are located in Wailua and Waipouli, along Kuhio Highway. Kuhio Highway is also the only route to access

the resort centers and attractions on the north side of the island.



Unique shops in historic Kapaa Town.

Kapaa Town itself is also a popular attraction.

Visitor attractions in Kapaa, including cultural sites and parks, generated over 18,000 visitor trips in 2007 (DBEDT, 2008).

Land Transportation System Conditions

The existing land transportation system within the study area consists of roadways, paths, and transportation services that provide for the needs of multimodal users: cars, freight, transit, pedestrians, and bicyclists. The transportation system includes both state and county facilities. This section discusses the following for the Kapaa area:

- » **Existing roadway system** – a physical and policy description of existing state and county roadways in the study area
- » **Existing vehicle system performance** – a description of existing congestion, bottlenecks, and safety issues

- » **Existing freight system** – a qualitative discussion of freight conditions in the area
- » **Existing public transit system** – a summary of existing public transit system and services in the study area
- » **Existing bikeway system** – a description of existing and planned bicycle facilities in the study area
- » **Existing pedestrian system** – a summary of existing walking infrastructure in the Kapaa area
- » **Existing travel demand management and transportation system management** – definitions of travel demand management and transportation system management, and relevance for the study area
- » **Safety conditions and areas of concern** – a description of transportation safety in the Kapaa area

EXISTING ROADWAY SYSTEM

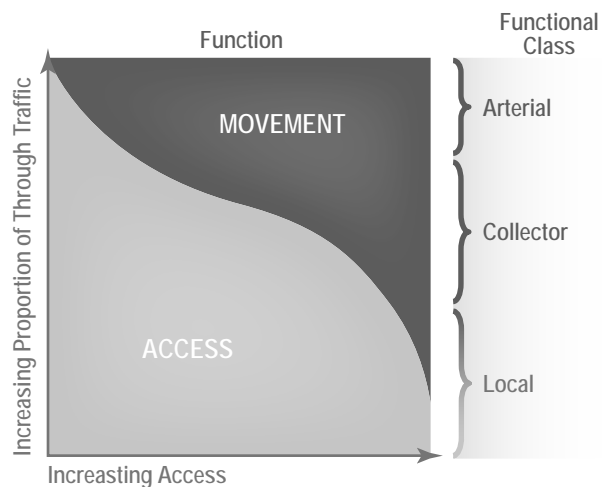
The roadway system is the backbone for moving both people and goods around and through Kapaa and Wailua. All modes of land transportation use the roadway system.

The existing roadway system within the study area consists of arterial, collector, and local roadways. These types of roadways are defined by state and local governments as follows:

- » **Arterial** – roadways of regional importance that are intended to serve high volumes of traffic traveling relatively long distances. An arterial is intended to primarily serve through traffic and have a degree of access control (limitations on numbers of driveways linking into the roadway).
- » **Collector** – roadways that provide for traffic movements between arterials and local streets and carry moderate traffic volumes over moderate distances. Collectors may also provide direct access (driveways) to abutting properties.
- » **Local** – roadways that are intended to provide access to abutting properties. They tend to accommodate lower traffic volumes, serve short trips, and provide connections to collector streets.

The Transportation Research Board *Access Management Manual* (2003) shows the relationship between movement and access for the three roadway types in **Exhibit 3-7**. Arterials are characterized by greater emphasis on movement of traffic, while local roadways have higher emphasis on property access.

EXHIBIT 3-7. Existing Roadway System Classifications, Transportation Research Board, 2003



These roadway classifications, or functional classifications, help plan for the future of the transportation system because the classifications influence roadway design, prioritization for improvement, and funding. **Exhibit 3-8** (page 3-12) depicts the functional classification of roadways in the vicinity of Kapaa and Wailua.

Exhibit 3-9 summarizes the number of centerline miles and the number of lane miles of principal/major arterials, minor arterials, and collector roadways in the study area. Centerline miles represent the length of the roadway as measured along the center of the road. Centerline miles do not take into account direction of travel, pavement width, or the number of travel lanes at any particular location.

Lane miles are measured by direction and include the length of any travel lane along a roadway segment. The arterials and collectors included in **Exhibit 3-9** have one travel lane in each direction, except for portions of Kuhio Highway. Between Leho Drive and Kuamoo Road, the highway has two lanes in each direction. Between Kuamoo Road and Kauai Village Shopping Center, and between Kapule Highway and Leho Drive, the highway has one southbound travel lane and two northbound travel lanes.

EXHIBIT 3-9. Miles of Functionally Classified Roadways within Study Area

Classification	Centerline Miles	Lane Miles
Principal/Major Arterials	7.4	20.1
Minor Arterials	2.8	5.6
Collectors	15.7	31.4
Total	25.9	57.1

CH2M HILL, 2014

EXHIBIT 3-8. Existing Functional Classifications HDOT, 2012



The study area roadway network includes Kuhio Highway (Route 56), which serves as the primary belt road access on the east and north sides of the island. Kuhio Highway is an important regional connection because it is the sole access road between the north shore and Lihue. Within the study area, it is classified as an urban principal arterial and also provides local access between Wailua and Kapaa.

The highway is connected to a network of minor arterials and collector roadways that primarily provide east-west local access. Kuamoo Road is classified as a minor arterial while Haleilio Road, Oloheua Road, and Kawaihau Road are a few roadways classified as collectors within the study area. These roadways provide access to local roadways including the Temporary Kapaa Bypass Road and circulation roads in historic Kapaa Town such as Lehua Road.

Existing Travel Patterns

During the weekday morning rush hour (generally between 7:15 a.m. and 8:15 a.m.) on Kuhio Highway, southbound traffic volumes through the study area are higher than northbound volumes because many commuters travel from Kapaa, Wailua, and the northern side of the island towards Lihue. A contraflow lane, which begins at the southern terminus of the Temporary Kapaa Bypass Road, operates during the morning peak to provide additional capacity for southbound vehicles. Two travel lanes support southbound traffic, while one lane is maintained in the northbound direction.

Morning traffic through the historic downtown district of Kapaa is more evenly split by direction as travellers head north from neighborhoods towards the elementary and high schools.

Traffic patterns along Kuhio Highway in the weekday afternoon peak hour (generally between 4:30 p.m. and 5:30 p.m.) reflect the general end-of-workday commute, with volumes being heavier in the northbound direction. The contraflow lane does not operate in the afternoon, so two northbound lanes are provided for traffic returning to Kapaa and Wailua from Lihue and the western side of the island. Currently, the contraflow lane also operates on Saturday mornings because of the high volume of traffic during the weekend.

EXISTING VEHICLE SYSTEM PERFORMANCE

The existing transportation system performance is described in terms of operations and safety. These discussions establish existing or baseline performance characteristics from which future traffic estimates and future solution scenarios can be assessed.

Vehicular Volumes

Traffic volumes on Kuhio Highway between Hanamaulu and Wailua are, on average, the highest on the island. In 2009 (the most recent complete travel data), approximately 34,100 vehicles traveled along this stretch of highway in both directions on a typical day (County of Kauai, 2012). Between Wailua and Kapaa, traffic volumes decrease slightly to approximately 21,500 average daily vehicles. Wailua includes a large percentage of the island's households and Kapaa includes tourist amenities and retail establishments. A significant number of vehicles begin or end their trips in this area. North of Kapaa towards Anahola, daily volumes on Kuhio Highway decrease to approximately 13,600 vehicles per day.

Vehicle volumes on collector and local roadways within the study area are lower than volumes on the highway. Average daily traffic volumes on Kawaihau Road, *mauka* of the elementary and high schools, are approximately 4,800 vehicles per day in both directions, while Olohena Road *mauka* of the roundabout carries approximately 7,500 daily vehicles. The Temporary Kapaa Bypass Road, south of the roundabout, is estimated to support 4,600 daily vehicles in both directions (HDOT, 2014).

Volume to Capacity Ratio and Level of Service

The performance of the existing roadway network is described in terms of level of service (LOS) and volume to capacity (V/C) ratios. These measurements of congestion can help determine locations where investment might be warranted. LOS generally describes operating conditions on a roadway or at an intersection based on a variety of measures, such as delay, speed, and density. There are six LOS classifications, each given a letter designation from A to F. The classifications are defined

by the Transportation Research Board's 2010 *Highway Capacity Manual*.



Kuhio Highway is often congested during peak hours.

LOS A for a roadway represents ideal operating

conditions with little to no delay and where movements are not influenced by other vehicles on the roadway. Intersection LOS A conditions occur when flow is generally uninterrupted through traffic signals and vehicles experience little to no delay. LOS F represents poor operating conditions; on roadway segments this means high delays and extreme congestion while at intersections this could mean vehicles consistently wait more than one cycle length before progressing through the traffic signal.

Level of Service (LOS) Definitions

- LOS A** Free flow operations, vehicles are generally unimpeded in their ability to maneuver within the traffic stream or through a signalized intersection.
- LOS B** Reasonably free flow, vehicle maneuvers within the traffic stream or through an intersection is only slightly restricted.
- LOS C** Freedom to maneuver within the traffic stream is noticeably restricted, and the number of vehicles stopping at a traffic signal noticeably increases.
- LOS D** Freedom to maneuver is more noticeably limited on roadways, and vehicles occasionally wait more than one cycle length at an intersection.
- LOS E** Vehicles are closely spaced, leaving little room on the roadway to maneuver within the traffic stream. Vehicles at intersections wait at least one cycle length more frequently.
- LOS F** Breakdowns in roadway vehicular flow and intersection operations.

Source: Transportation Research Board, 2010.

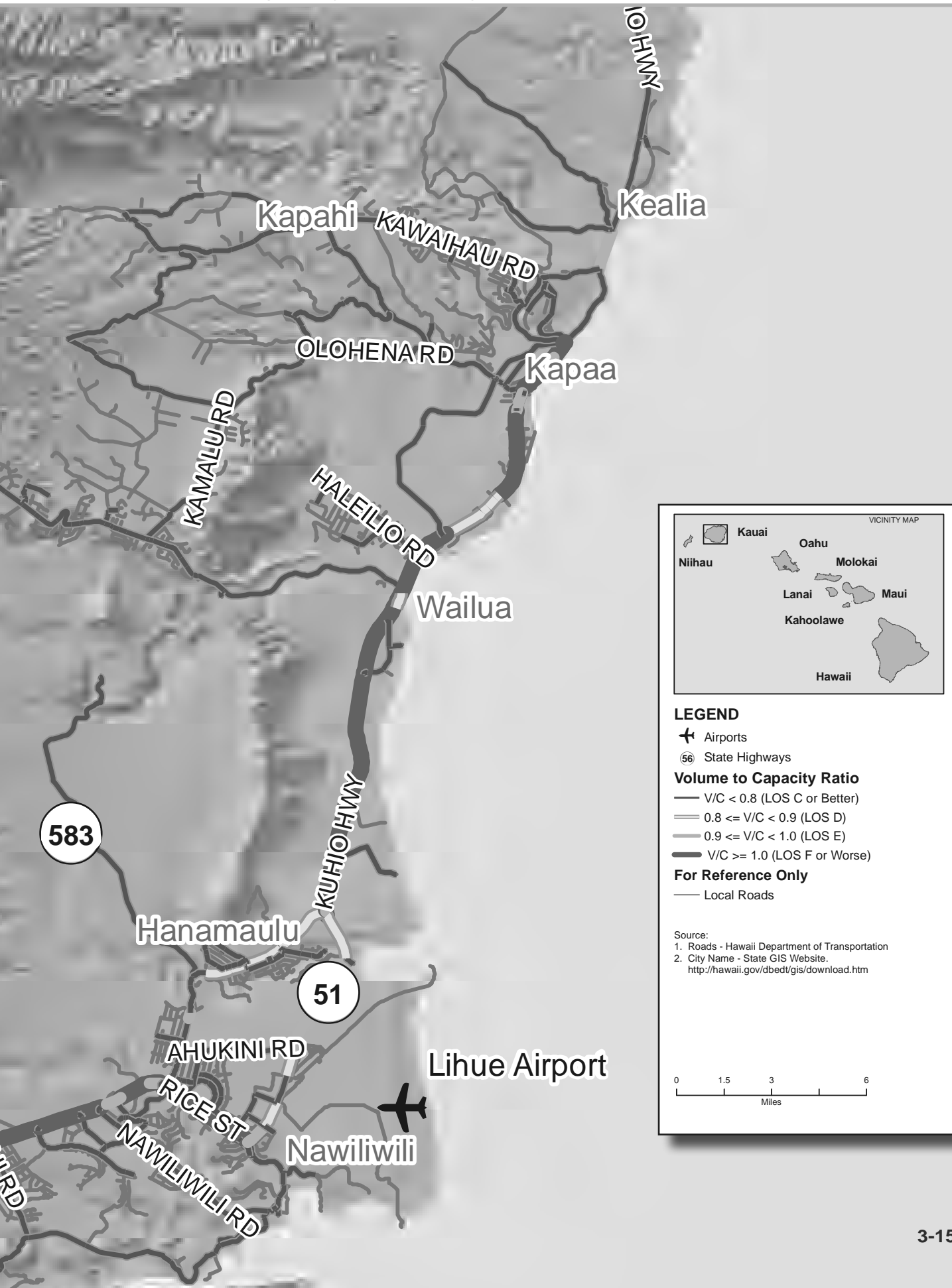
Traffic operations can also be described by V/C ratios, which quantify the relative vehicle demand versus the capacity of a facility. A V/C ratio of 1.0 indicates the vehicle demand is equal to the capacity of the facility, and correlates to LOS F conditions.

ROADWAY OPERATIONS AND CONGESTED AREAS

Exhibit 3-10 on Page 3-15 depicts daily roadway segment operations as estimated by the 2007 travel demand forecast model (the most recent travel model data available) (HDOT, 2014).

The majority of local roadways within Kapaa and Wailua operate at LOS C, or at a V/C ratio of 0.80 or better, during a typical day. These local roadways provide access to Kuhio Highway, which is generally congested between Lihue and Kapaa. At these congested locations, the daily traffic volumes are at or exceed the daily capacity of the roadway (a V/C ratio of at least 1.0). Lihue is the employment center of the island and therefore attracts high vehicle volumes on a typical day.

EXHIBIT 3-10. Existing Roadway Volume to Capacity Ratio



Because of the unique belt highway system on Kauai, all traffic into or out of Lihue from the east or north must use Kuhio Highway and must travel through Kapaa and Wailua. Congestion occurs because all traffic is concentrated on the highway and forced to use this single bottleneck.

Congestion on portions of Kuhio Highway within the downtown/historic district can be caused by parallel parking in adjacent lanes. Through historic Kapaa Town, parallel parking is provided in both directions of travel. In order for vehicles to maneuver into and out of these parallel stalls, northbound and southbound through-traffic on Kuhio Highway must slow down to allow for adequate space, which often results in short delays.

Kuhio Highway not only serves as a regional roadway, but also as a local access to shopping and retail for residents. For example, between the Wailua Homesteads and downtown Kapaa, vehicles must use Kuhio Highway to reach their destinations because no parallel or alternative *mauka* routes are available. Capacity on Kuhio Highway is reduced when vehicles turn onto or off of the highway at business access driveways. When these accesses are closely spaced, such as in the area between Haleilio Road and Lanikai Street, traffic on Kuhio Highway may need to reduce speed multiple times, which causes short delays, reduces the overall capacity, and may increase congestion on the highway.

INTERSECTION OPERATIONS

Intersections facilitate turning movements and provide access between different roadways. Long delays incurred by vehicles approaching a particular intersection can indicate deficiencies in operations. Similar to roadway conditions, intersection operations can be described by six LOS classifications. LOS A represents conditions with little to no delay, while LOS F generally represents congested conditions with high delays and long queues.

At stop-controlled intersections, delay is calculated at the worst stop-controlled movement. For example, at the intersection of Kuhio Highway and Mailihuna Road, the delay experienced by vehicles approaching on Mailihuna Road would be evaluated for LOS. Delay at signalized intersections is calculated by averaging the vehicle delay on all movements. At the intersection of Kuhio Highway and Kuamoo Road, for example, the LOS incorporates delay experienced on all three road approaches. **Exhibit 3-11** shows the LOS categories in reference to average delay times for both stop-controlled and signalized intersections.

EXHIBIT 3-11. Level of Service Criteria – Stop-Controlled and Signalized Intersections

Level of Service Grade	Average Vehicle Delay (seconds per vehicle)	
	Stop-Controlled Intersections	Signalized Intersections
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 15 and ≤ 35
D	> 25 and ≤ 35	> 25 and ≤ 55
E	> 35 and ≤ 50	> 35 and ≤ 80
F	> 50	> 80

Source: Transportation Research Board, 2010

Exhibit 3-12 shows the existing intersection control, delay, and LOS at specific study area intersections. At stop-controlled intersections, the worst delay on the stop-controlled approach is reported. At signalized intersections, the overall average delay per vehicle is reported.

Intersections operating at LOS E or worse are highlighted. **Exhibit 3-13** depicts the intersection lane channelization (how the roadway is striped) and whether it is a signal or stop sign, as well as the estimated morning and afternoon peak (rush) hour turning movement volumes. Based on estimated traffic volumes, *makai*-bound vehicles approaching Kuhio Highway from Mailihuna Road, Kawaihau

Road, and Lehua Street in downtown Kapaa experience long delays as they wait to turn onto the highway.

Vehicles experience this delay in both the morning and afternoon peak hours. Vehicles on the Temporary Kapaa Bypass Road (at its southern terminus) also experience long delays as they wait to turn onto Kuhio Highway during morning and afternoon peak hours and on weekends, too. Platoons of vehicles in both directions make it difficult for turning vehicles to find an acceptable gap in highway traffic. At each of these congested intersections, traffic on Kuhio Highway is not controlled by a signal or stop-sign, while the cross-street is stop-controlled.

EXHIBIT 3-12. Existing (2014) Intersection Operations

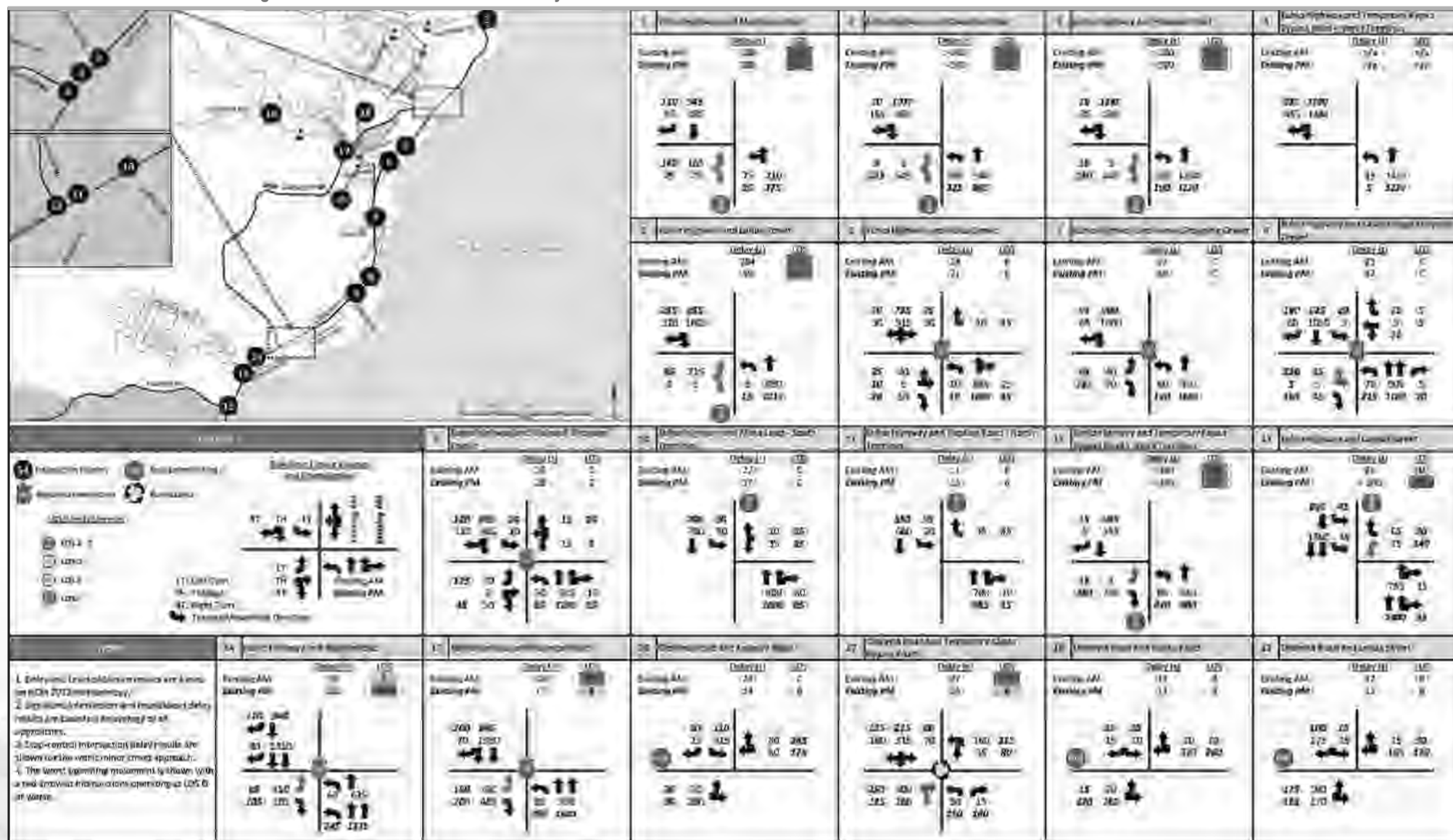
	Intersection	Control	Worst Stop-Controlled Movement Delay (s)	Existing AM Peak		Existing PM Peak	
				Delay (s)	LOS	Delay (s)	LOS
1	Kuhio Highway and Mailihuna Road	TWSC	Eastbound LT/RT	100	F	288	F
2	Kuhio Highway and Kawaihau Road	TWSC	Eastbound LT/RT	> 300	F	> 300	F
3	Kuhio Highway and Hauaala Road	TWSC	Eastbound LT/RT	> 300	F	> 300	F
4	Kuhio Highway and Temporary Kapaa Bypass Road - North Terminus	TWSC	n/a	n/a	n/a	n/a	n/a
5	Kuhio Highway and Lehua Street	TWSC	Eastbound LT/RT	284	F	59	F
6	Kuhio Highway and Kukui Street	Signal	n/a	18	B	22	C
7	Kuhio Highway and Kapaa Shopping Center	Signal	n/a	22	C	30	C
8	Kuhio Highway and Kauai Village Shopping Center	Signal	n/a	25	C	32	C
9	Kuhio Highway and Waipouli Shopping Center	Signal	n/a	23	C	28	C
10	Kuhio Highway and Aleka Loop - South Terminus	TWSC	Westbound LT/RT	22	C	17	C
11	Kuhio Highway and Papaloa Road - North Terminus	TWSC	Westbound RT	11	B	13	B
12	Kuhio Highway and the Temporary Kapaa Bypass Road - South Terminus	TWSC	Eastbound LT	> 300	F	> 300	F
13	Kuhio Highway and Lanikai Street	TWSC	Westbound LT	26	D	> 300	F
14	Kuhio Highway and Haleilio Road	Signal	n/a	59	E	100	F
15	Kuhio Highway and Kuamoo Road	Signal	n/a	118	F	77	E
16	Olohena Road and Kaapuni Road	TWSC	Southbound LT	24	C	14	B
17	Olohena Road and the Temporary Kapaa Bypass Road	Roundabout	Eastbound TH/RT	97	F	36	E
18	Olohena Road and Kahau Road	TWSC	Southbound LT/RT	12	B	12	B
19	Olohena Road and Lehua Street	TWSC	Southbound LT/RT	12	B	11	B

TWSC = Two-way stop control, LOS = level of service, LT = left-turn, TH = through, RT = right-turn

Delay is measured in average seconds per vehicle, per Highway Capacity Manual 2010 methodology.

Shaded cells indicate intersections that are operating at LOS E or LOS F.

EXHIBIT 3-13. Existing Intersection Peak Hour LOS and Delay



Intersection Queueing

In addition to level of service and delay, vehicle queue lengths at intersections provide another measure of effectiveness for traffic operations. Queues of vehicles longer than their turn-lane storage length at intersections can spill back and prevent through traffic from proceeding to the intersection, which reduces mainline capacity. Long queues at signalized intersections along Kuhio Highway can affect overall corridor operations by delaying and restricting upstream vehicle movements.

These queues can potentially cause blocking on side streets and private driveways, as well as hinder access to adjacent properties.

Exhibit 3-14 reports notable 95th percentile queues at study intersections for both the morning and afternoon peak hours.

Exhibit 3-15 shows the existing 95th percentile queues graphically. The 95th percentile queue length refers to the maximum queue that occurs during 95 percent of the peak hour of travel. Highlighted queue lengths exceed their available storage distance or block upstream intersections and driveways.

EXHIBIT 3-14. Existing (2014) Queuing Analysis

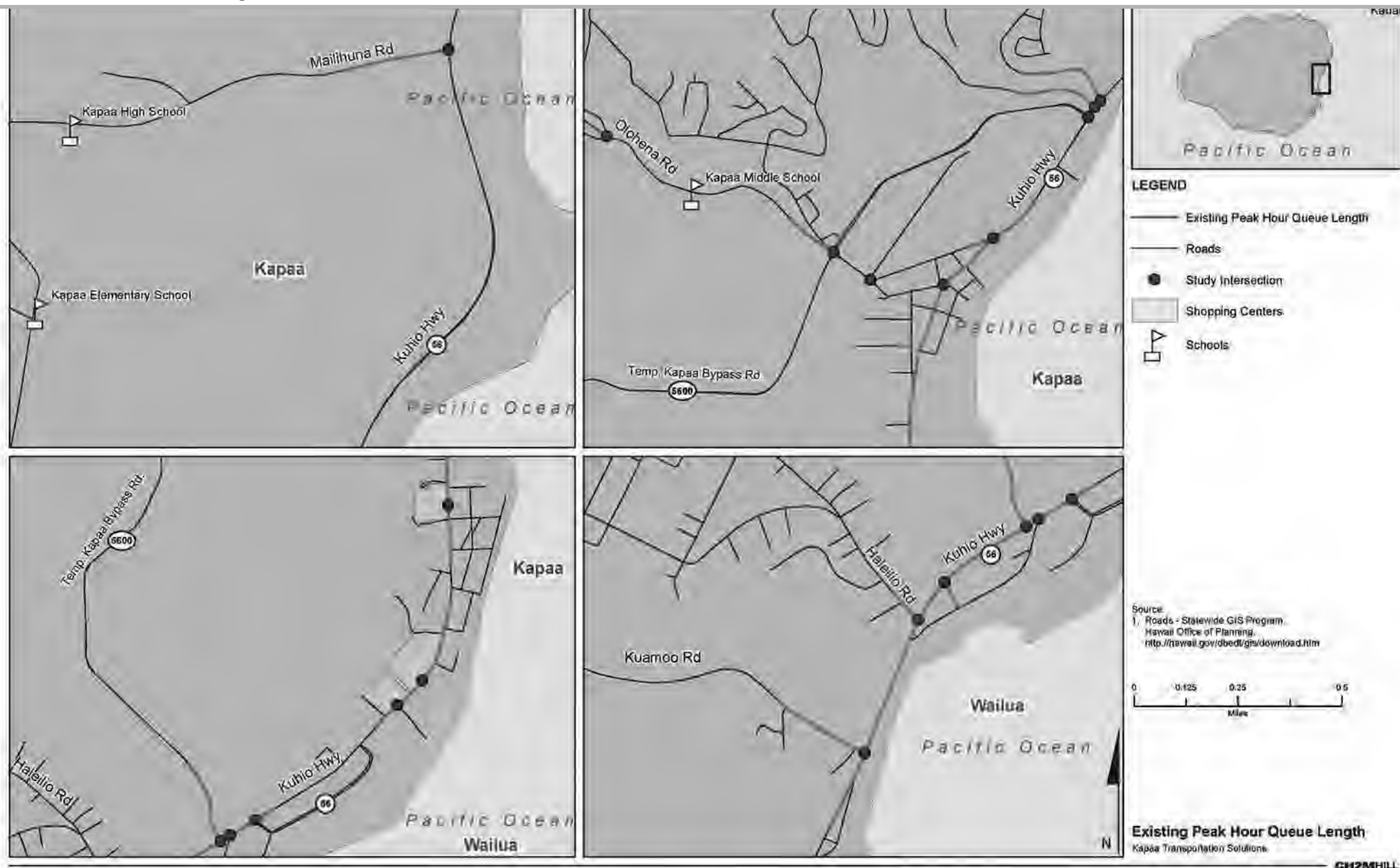
Approach	Lane Group	Available Storage (ft)	95 th Percentile Queue (ft)	
			AM Peak	PM Peak
Kuhio Highway and Mailihuna Road	Eastbound Left/Right	-	300	575
Kuhio Highway and Kawaihau Road	Eastbound Left/Right	-	1,250	475
	Northbound Left	50	675	125
Kuhio Highway and Hauaala Road	Eastbound Left/Right	-	1,125	350
	Northbound Left	50	75	25
Kuhio Highway and Lehua Street	Eastbound Left/Right	-	375	100
Kuhio Highway and Kukui Street	Northbound Through	250	2,250	2,750
	Southbound Through	225	1,600	1,350
Kuhio Highway and Kapaa Shopping Center	Northbound Through	175	600	1,000
	Southbound Through	675	600	650
Kuhio Highway and Kauai Village Shopping Center	Northbound Through	500	200	525
	Southbound Through	875	1,100	1,425
Kuhio Highway and Waipouli Shopping Center	Northbound Through	775	225	475
	Southbound Through	500	1,325	1,400
Kuhio Highway and the Temporary Kapaa Bypass Road - South Terminus	Eastbound Left/Right	-	1,375	225
	Northbound Left	150	25	100
Kuhio Highway and Haleilio Road	Eastbound Left/Right	250	450	275
	Northbound Through	250	975	700
	Southbound Through	500	1,375	2,700
Kuhio Highway and Kuamoo Road	Eastbound Left/Right	-	1,200	425
	Northbound Through	1,100	350	1,025
	Southbound Through	1,650	1,725	1,175
Olohena Road and the Temporary Kapaa Bypass Road	Eastbound Through/Right	-	550	100
	Southbound Left/Through/Right	-	175	225

Source: SimTraffic 95th percentile queue lengths, rounded up to the nearest 25 feet.

"-" indicates effectively unlimited storage length.

Shaded cells indicate queue length exceeds available storage length.

EXHIBIT 3-15. Existing 95th Percentile Intersection Queues



Vehicle Trips

Approximately 44,670 daily vehicle trips were generated in Wailua and Kapaa in 2007 (HDOT, 2014). A complete vehicle trip includes one origin and one destination. Trips generated within the study area represent approximately 24 percent of all vehicle trips made on the island.

As shown in **Exhibit 3-16**, most daily trips generated within Wailua and Kapaa travel to and from Central and West Kauai. Approximately 40 percent of all vehicle trips generated in Wailua (including the residential areas along Kuamoo Road and Haleilio Road) travel to and from the west. Approximately 27 percent of trips generated in the residential areas of Kapaa (Kapaa Homesteads and residential areas *mauka* of Olohena Road and Kawaihau Road) are destined to Lihue and areas to the west, while 30 percent of trips are able to complete their trip purpose within the same residential areas of Kapaa.

Average Trip Time

The average vehicle trip times within the study area, between Wailua and the residential and downtown districts of Kapaa, as estimated by the travel demand forecasting model (HDOT, 2014) are shown in **Exhibit 3-17**.

In 2007, trips originating from Wailua would take approximately 18 minutes on average to reach the residential areas of Kapaa along upper Kawaihau Road and *mauka* into the Kapaa Homesteads, and approximately 13 minutes to reach destinations in the downtown historic area of Kapaa. Internal trips within Kapaa's residential areas could take an average of 15 minutes on local roads, although a portion of trips would also be likely to use Kuhio Highway to complete their trip.

EXHIBIT 3-16. 2007 Daily Vehicle Trips by Area

District	Destination					
Origin	Central/ West Kauai	Wailua	Kapaa (residential)	Kapaa (downtown)	Anahola/ North Shore	Total
Central/ West Kauai	101,410	8,345	3,805	2,435	4,040	120,035
Wailua	8,345	5,005	2,855	3,275	1,240	20,720
Kapaa (residential)	3,805	2,855	4,240	1,745	1,555	14,200
Kapaa (downtown)	2,435	3,275	1,745	1,350	945	9,750
Anahola/ North Shore	4,035	1,240	1,555	945	17,680	25,455
Total	120,030	20,720	14,200	9,750	25,460	190,160

Source: HDOT, 2014

EXHIBIT 3-17. 2007 Daily Average Vehicle Trip Time within Study Area

District	Destination		
Origin	Wailua	Kapaa (residential)	Kapaa (downtown)
Wailua	10	18	13
Kapaa (residential)	18	15	11
Kapaa (downtown)	13	11	3

Source: HDOT, 2014

Travel Time

Northbound and southbound travel times along Kuhio Highway within the study area are shown in **Exhibit 3-18**. Travel times were estimated between Kapule Highway and Mailihuna Road. The morning peak hour travel time assumes the southbound contraflow lane is open, beginning at the southern terminus of the Temporary

EXHIBIT 3-18. Average Travel Time through Study Area

Route	Distance (miles)	Estimated Average Travel Time (minutes)	
		AM Peak Hour	PM Peak Hour
Northbound – Kuhio Highway (from Kapule Highway to Mailihuna Road)	7.4	15.1	24.1
Southbound – Kuhio Highway (from Mailihuna Road to Kapule Highway)	7.4	16.1	19.1
Southbound – Temporary Kapaa Bypass Road (from Mailihuna Road to Kapule Highway)	8.1	15.7	17.0

Source: *SimTraffic*.

EXISTING FREIGHT SYSTEM

Freight mobility is critical to the economic vitality of Kauai. Although there are no specified freight routes on the island, freight activities are concentrated around the commercial harbors - Nawiliwili Harbor in Lihue and Port Allen Harbor in Port Allen – and use many of the arterial roadways to transport goods to markets throughout the islands. From these harbors, freight vehicles transporting goods to Wailua and Kapaa (and to all points north) must use Kuhio Highway. Cargo received at Lihue Airport is also transported to the study area via Kuhio Highway.

The conditions of the roadway system and traffic volumes, patterns, congestion and queues affect the reliability of the freight system for export and import of goods.

Kapaa Bypass Road. The afternoon travel times reflect no contraflow operations, with two lanes northbound through Wailua and Kapaa.

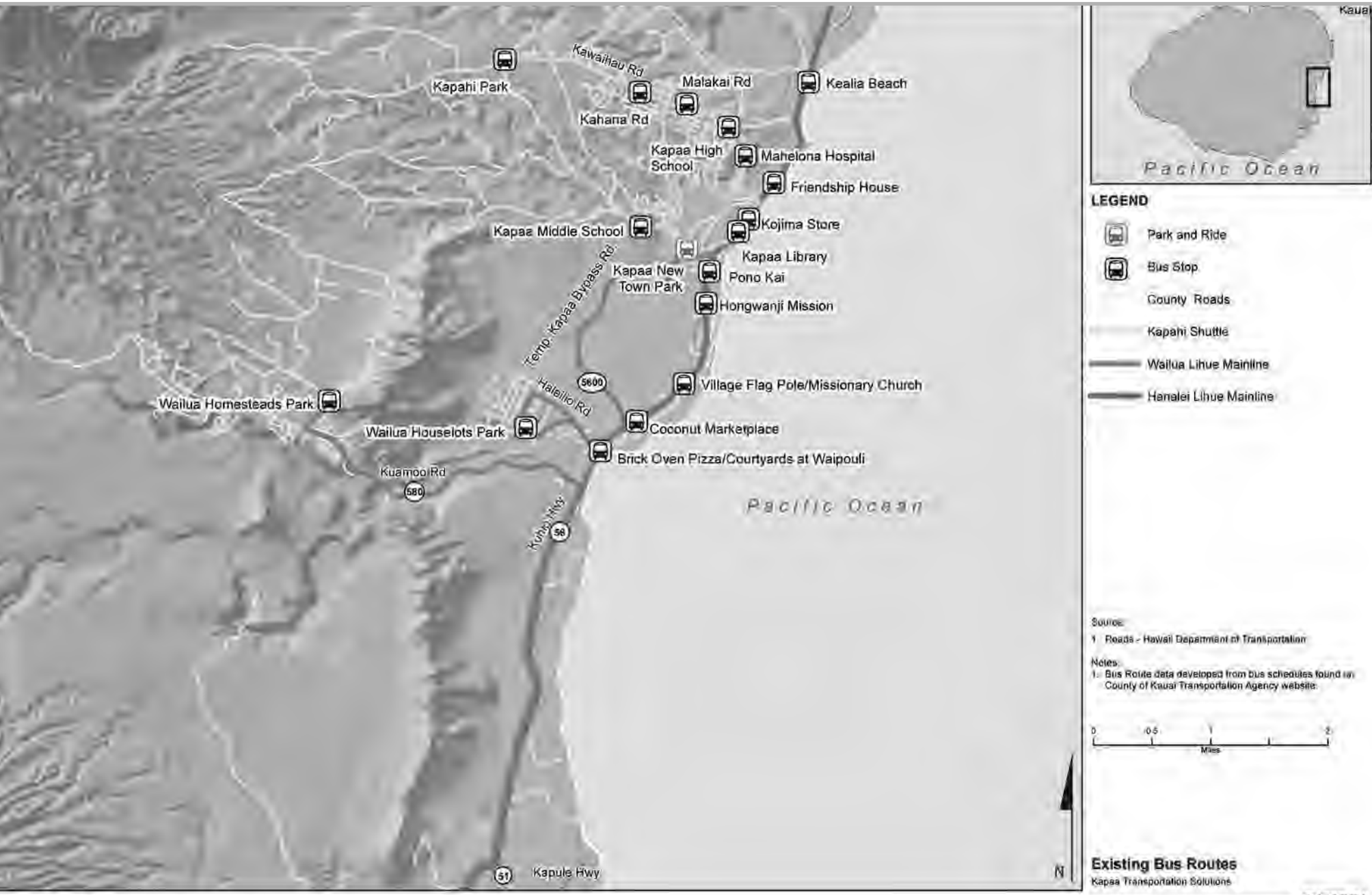
The southbound travel time, assuming trips take the Temporary Kapaa Bypass Road instead of Kuhio Highway, is also shown.

EXISTING PUBLIC TRANSIT SYSTEM

Public transit provides an option and opportunity for personal mobility for anyone, regardless of age, income, social or physical status. In addition, public transit benefits overall quality of life through reduced traffic congestion and improved air quality. It also provides a modal alternative for those who are unable to or choose not to drive. The conditions of the roadway system and traffic volumes, patterns, congestion, and queues affect the reliability of the public transit system in the Kapaa Study Area.

The Kauai Bus public transit system consists of fixed-route transit service, on-call door-to-door paratransit service, and designated park-and-ride lots and transit stops. **Exhibit 3-19** shows the existing transit system within the study area.

EXHIBIT 3-19. Existing Transit System



Two types of fixed-route transit service are provided by the Kauai Bus: mainline service and shuttle service. The mainline buses are primarily designed for people traveling between towns on the island, while the shuttle service serves people traveling shorter distances. Two mainline routes serve the study area: the Wailua–Lihue mainline and the Hanalei–Lihue mainline. Mainline bus service from Wailua to Lihue (Route 800) is offered each morning, Monday through Friday, via two trips that leave Kapaa Skate Park at 6:40 am and 7:40 am. Return service from Lihue (Route 850) is provided via three trips leaving Kauai Community College at 12:30 pm, 4:30 pm, and 5:30 pm (County of Kauai Transportation Agency, no date).

Bus service between Hanalei and Lihue passes through Wailua and Kapaa on Kuhio Highway. Inbound service to Lihue (Route 400) is offered from approximately 6:00 am to 9:30 pm Monday through Friday, and from 7:15 am through 5:00 pm on weekends and holidays. Outbound service leaves Lihue (Route 500) at least hourly between approximately 5:30 am and 9:30 pm. Truncated peak direction service from Kapaa to Lihue (Route 450/Route 450E) is provided via two trips Monday through Friday. One trip is an express bus service that makes limited stops outside of Lihue and primarily serves the park-n-ride facilities.

In the third quarter of 2014, average weekday ridership for the Hanalei–Lihue mainline was approximately 1,150 riders (both directions combined). Average weekday ridership for the Kapaa–Lihue routes and the Wailua–Lihue Mainline were approximately 20 and 50, respectively (County of Kauai Transportation Agency, 2014). Current regular mainline bus fare is \$2.00.

Kauai Bus shuttle service targets bus riders traveling shorter distances, such as within a town or between adjacent towns, as well as provides feeder service for passengers connecting to/from mainline routes. The Kapahi shuttle route runs between Kapahi Park and Kapaa Middle School. Between July and September 2014, average weekday ridership was approximately 300 riders each day combined in both directions (County of Kauai Transportation Agency, 2014). Current regular shuttle fare is \$0.50. The service frequency and route numbers of each route are summarized in **Exhibit 3-20**.

EXHIBIT 3-20. Kapaa Transit Service Summary

Route Description/Name	Route #'s	Hours of Service		Average Service Frequency (minutes)			
		M – F	SS/Holiday	Peak	Midday	Evenings	Weekends
Mainline Service							
Hanalei-Lihue	400 (SB), 500 (NB)	6:00 AM – 10:30 PM	7:15 AM – 5:30 PM	30	60	60	120
Kapaa-Lihue	450, 450E (SB)	6:00 AM – 7:00 AM	N/A	60	N/A	N/A	N/A
Wailua-Lihue	800 (SB), 850 (NB)	6:30 AM – 6:30 PM	N/A	60 (Peak dir. Only)	One NB trip	N/A	N/A
Shuttle Service							
Kapahi Shuttle	60	6:30 AM – 10:00 PM	7:00 AM – 5:00 PM	60	60	60	120

Source: County of Kauai Transportation Agency, 2014

Paratransit service is available to qualified individuals, including seniors and persons with disabilities who are unable to use the fixed-route public transit. Advanced reservations for door-to-door paratransit service is required. This service operates during the same days and hours as fixed-route service, and is limited to areas within 0.75 mile from a transit route.

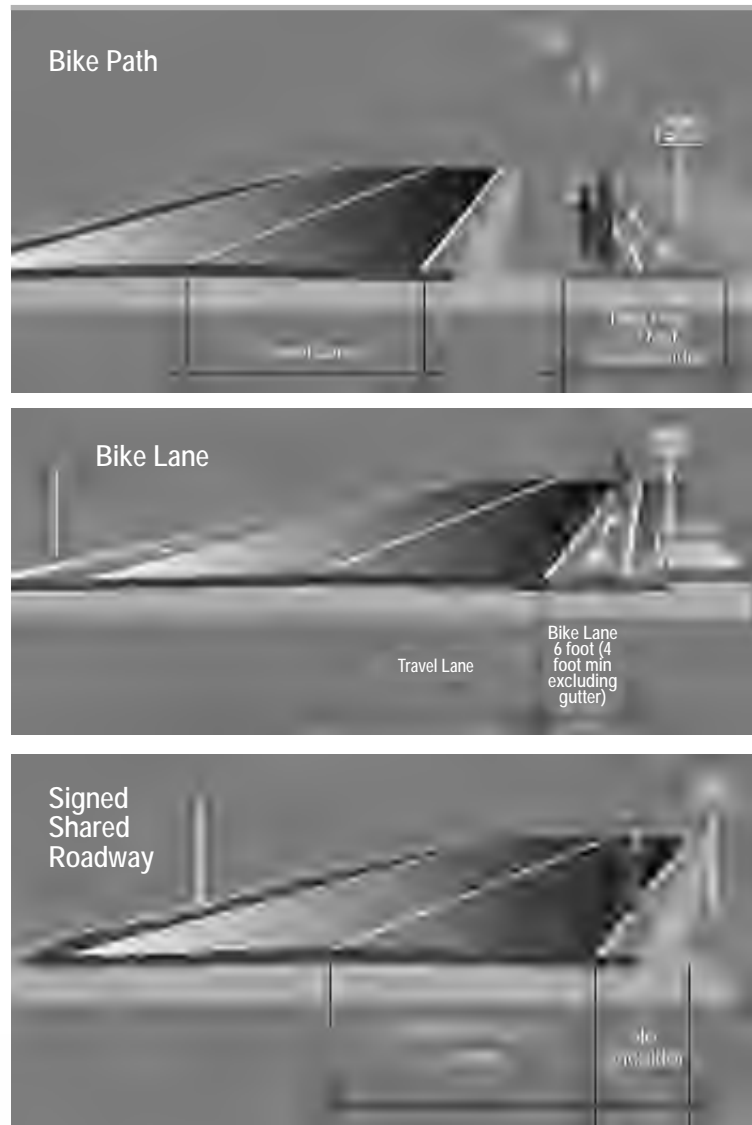
Park-n-ride facilities allow passengers to drive, park, and ride the bus. The park-n-ride facility for Kapaa is located by the Kapaa New Town Park.

The Kauai Bus offers 1-month and 12-month passes on an individual basis. Bus passes must be purchased through the Kauai County Transportation Agency office in Lihue. In addition to these monthly passes, the County of Kauai has also made arrangements with Kauai Community College to allow students to pay a fee when registering for classes that allows them to ride using student identification. While the Kauai Bus currently has no special arrangement for employee bus passes, some employers on the island have purchased bus passes at the regular rate and provided them to their employees.

EXISTING BIKEWAY SYSTEM

Bicycles are increasingly being recognized in Kauai not only as a recreational activity, but a viable transportation mode. The Bike Plan Hawaii (HDOT, 2003) summarizes the multifaceted benefits of bicycling, not only as a means of transportation, but also related to health, economics, community, and the environment. Bicycle facilities can generally be described as any improvement or provision made by public agencies to accommodate bicycling. There are three major types of bicycle facilities: paths, bike lanes, and signed shared roadways. These facilities are illustrated in **Exhibit 3-21**.

EXHIBIT 3-21. Bike Facility Types



The American Association of State Highway and Transportation Officials define these facilities as:

- » ***Paths or Shared-use Paths*** – a bikeway that is physically separated from motorized vehicular traffic by an open space or barrier and is either within the highway right-of-way or within an independent right-of-way. Shared-use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.
- » ***Bike Lanes*** – a portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

» **Signed Shared Roadways** – a shared roadway that has been designated by signing as a preferred route for bicycle use. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders.

The Bike Plan Hawaii provides an inventory of the existing and planned bicycle system.

As shown on **Exhibit 3-22**, the existing bicycle facilities within Kapaa consist primarily of shared-use paths, which include the Ke Ala Hele Makalae along the coast and a path on Kawaihau Road between Kapaa Elementary School and Kapahi Park. When completed, the Ke Ala Hele Makalae will be a 16-mile-long multi-use path between Anahola and Nawiliwili. Currently, two segments of this path have been completed and opened for the public. The two segments are a 2.5-mile portion at Lydgate Park and a 4.1-mile portion between Kapaa Town and Kealia Beach.

Although designated or marked bicycle facilities are available on few roads within the study area, bicycle use is allowed on all public roadways.

However, some roadways can be concerns for cyclists because of high vehicular volumes or narrow shoulder widths. Roadways that are not friendly for bicyclists include Kuamoo Road between Kuhio Highway and Kamalu Road and Kawaihau Road between Kuhio Highway and Iwaena Road.

Future proposed facilities noted in the Bike Plan Hawaii and illustrated in **Exhibits 3-23** and **3-24** include improving the existing sidewalk on Kawaihau Road to accommodate bicycles and extending that facility to Kuhio Highway, as well as implementing signed shared roadways on Mailihuna Road, Kaapuni Road, Olohena Road, Kuamoo Road, and Kamalu Road. Kuhio Highway through Kapaa and Wailua is also proposed as a signed shared roadway. A future Kauai Commuter Bikeway is proposed along agricultural roads *mauka* of and parallel to Kuhio Highway between Waikaea Canal and the Wailua River.

EXHIBIT 3-22. Existing Bicycle System

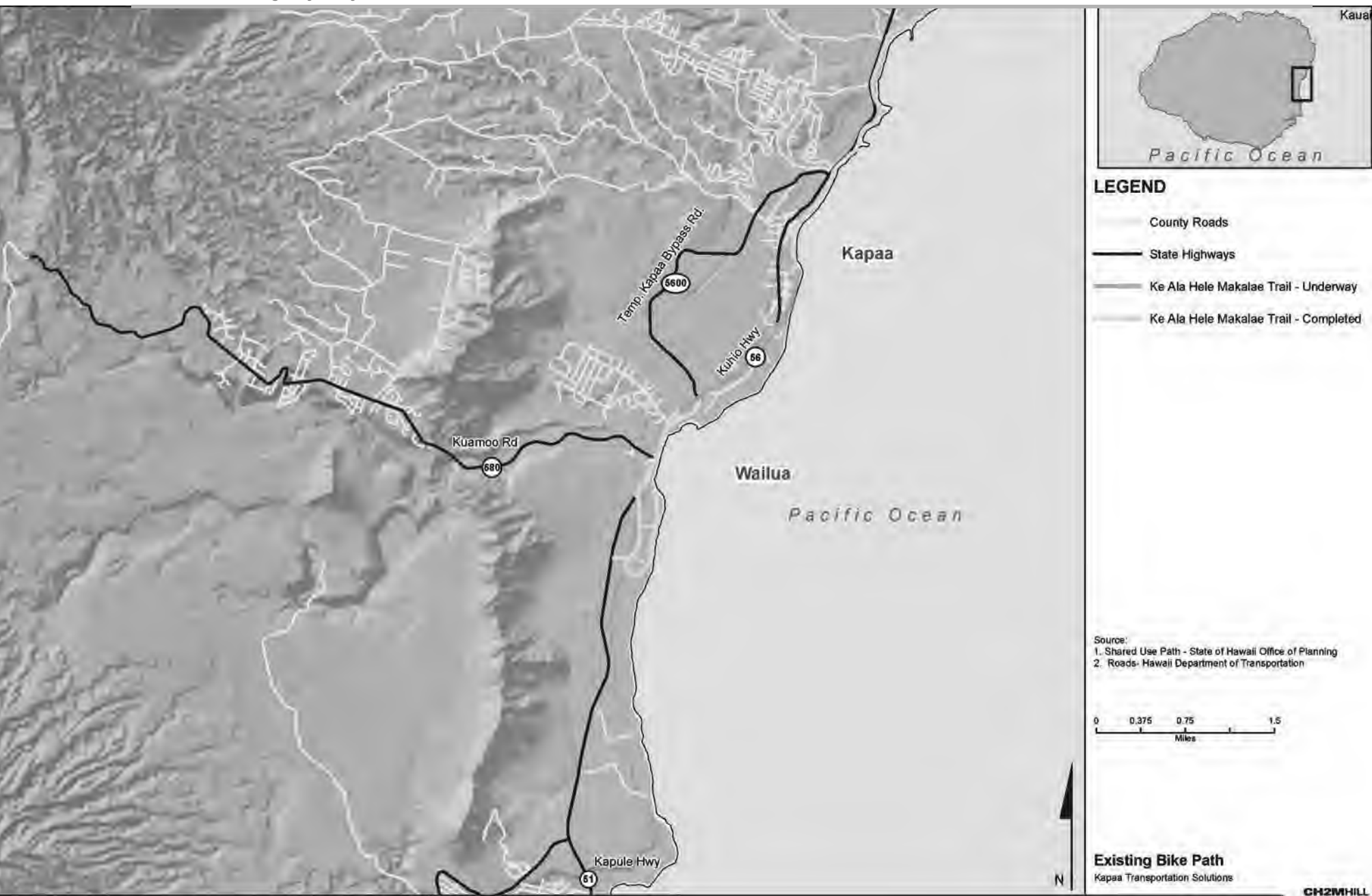


EXHIBIT 3-23. Proposed Bicycle System

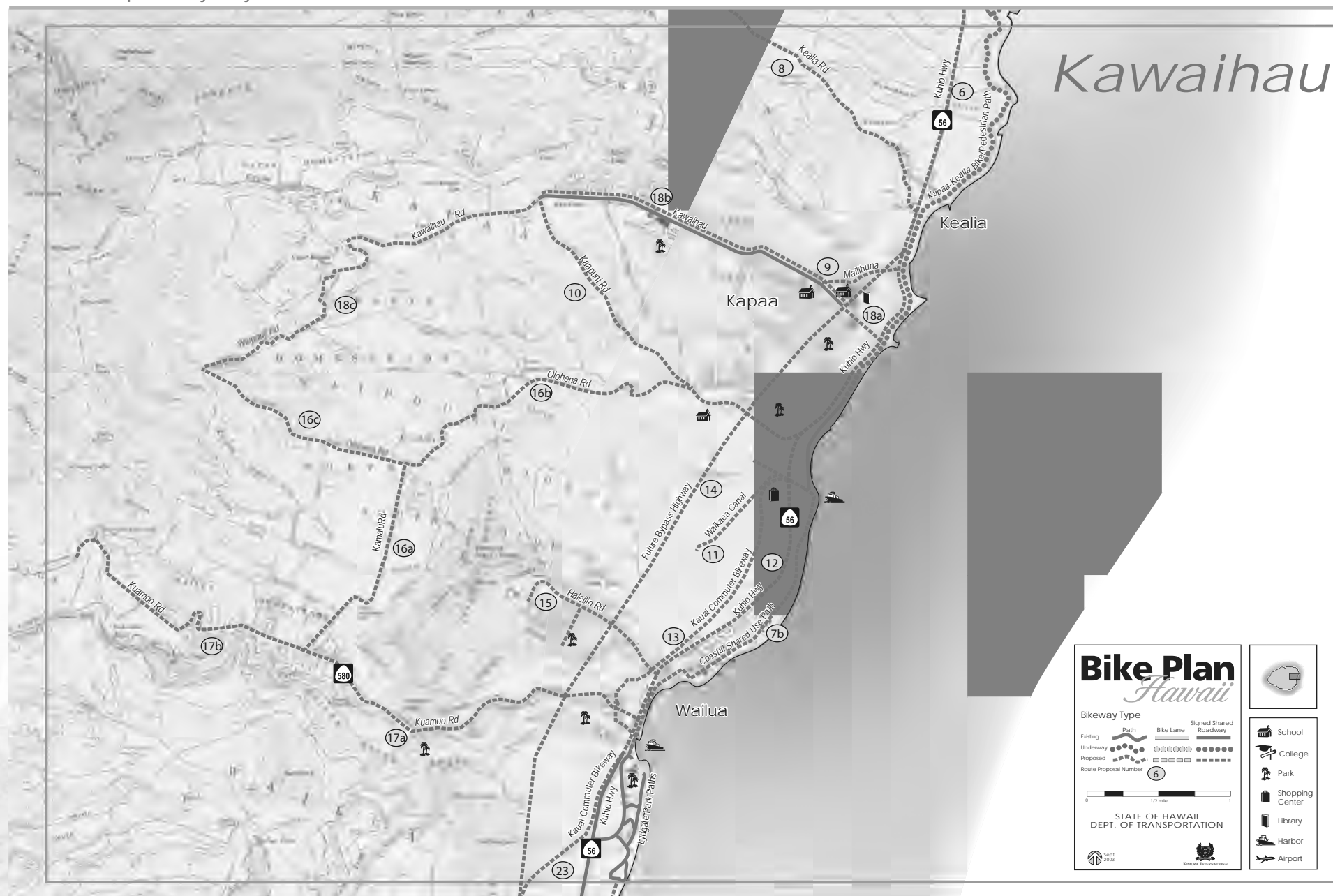
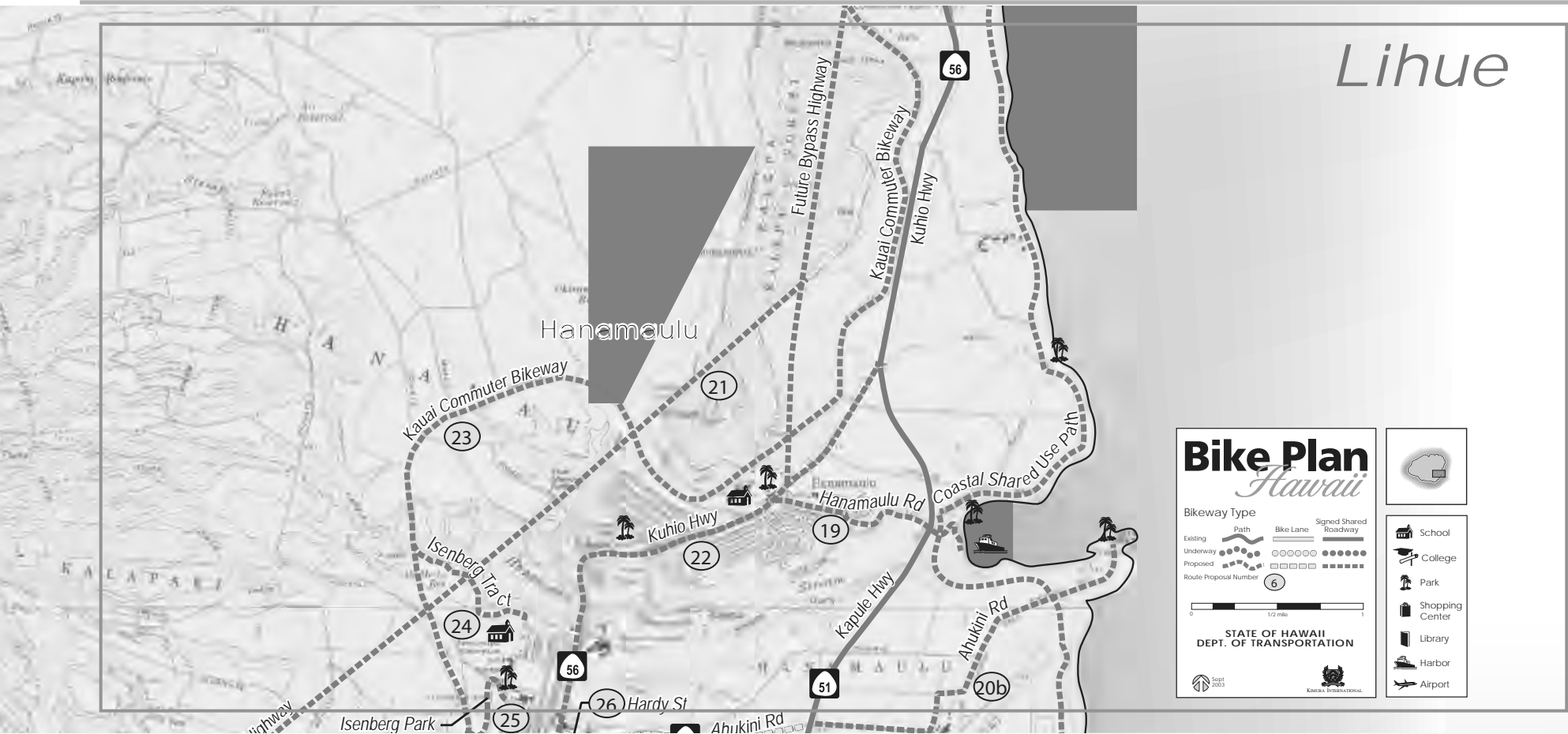


EXHIBIT 3-24. Proposed Bicycle System



EXISTING PEDESTRIAN SYSTEM

Pedestrian facilities are a critical part of the transportation system. For every trip that is made, a portion occurs as pedestrian travel. The benefits of walking are similar to those noted for bicycling: transportation, health, economics, community, and the environment. The Statewide Pedestrian Master Plan (HDOT) developed a stakeholder driven vision for the pedestrian system that promotes the pedestrian mode of transportation as well as protects those that are using the pedestrian system.

Pedestrian facilities can generally be described as any infrastructure that is designed specifically for use by a pedestrian. These include sidewalks, crosswalks, and paths.

The Statewide Pedestrian Master Plan provides information on the existing pedestrian system.

Exhibit 3-25 shows the existing pedestrian system in Wailua and Kapaa. In Kapaa, sidewalks are provided on one or both sides of Kuhio Highway continuously between Pouli Road and Kawaihau Road. A narrow sidewalk is provided in the *makai*-bound direction of Kawaihau Road between Kaapuni Road and Mailihuna Road.

VISION



Hawaii's integrated and multi-modal transportation system provides a safe and well-connected pedestrian network that encourages walking among all ages and abilities. The system promotes a positive pedestrian experience; promotes environmental, economic and social sustainability; fosters healthy lifestyles; and conserves energy

More people in Hawaii choose to walk for both transportation and recreation as a result of enhanced walking environments, mobility, accessibility, safety, and connectivity throughout the transportation system.

HDOT, 2013a

EXHIBIT 3-25. Existing Pedestrian System HDOT



EXISTING TRAVEL DEMAND MANAGEMENT/TRANSPORTATION SYSTEM MANAGEMENT

Travel Demand Management (TDM) is a term used to describe strategies that reduce travel demands or redistribute travel demands to lessen impacts during peak rush hour periods. TDM measures may include campaigns to encourage people to switch to higher occupancy modes (such as public transit, vanpools, and carpools) or to use non-motorized modes of travel (such as walking and bicycling) to complete their trip.

Examples of TDM measures that are currently being implemented within the study area include providing bicycle- and pedestrian-friendly facilities, public transportation services and infrastructure, and subsidizing transit costs. Campaigns to increase transit use or carpooling, for example, could be considered in the future.

Transportation System Management (TSM) strategies enhance the capacity of the existing transportation system through operational improvements. TSM strategies may include contraflow lanes, high-occupancy vehicle (HOV) lanes, and Intelligent Transportation Systems (ITS). Contraflow lanes reverse the usual flow of traffic, often in locations constrained by topography or existing development. HOV lanes are travel lanes dedicated exclusively or during a portion of the day for carpooling. ITS uses technology to maximize the flow and safety of an existing roadway. A few examples include electronic signs that include traveler information relating to incidents or congestion on roadways, and traveler information on websites that travelers can check before beginning their trips.

Within the study area, a contraflow lane on Kuhio Highway is currently used to facilitate morning peak traffic headed towards Lihue. Beginning at the south terminus of the Temporary Kapaa Bypass Road, one of the two northbound lanes is separated by traffic cones and converted to carry southbound traffic. This southbound contraflow lane is continuous through Wailua and terminates at Kuamoo Road, where two permanent southbound lanes are provided over the Wailua River Bridge. The southbound contraflow lane continues again just south of the Wailua River Bridge, where southbound of Kuhio Highway it becomes one lane, and ends at the intersection of Kuhio Highway and Kapule Highway.

The contraflow lane adds capacity to the southbound direction, but reduces capacity in the northbound direction. During the morning peak, northbound Kuhio Highway is a single travel lane between Kuamoo Road and the south terminus of the Temporary Kapaa Bypass Road. The contraflow lane operates Monday through Friday, generally between 6:00 am and 11:00 am, and on Saturdays from approximately 8:00 am to 1:00 pm.

In the afternoons, when the contraflow lane is not in effect, Kuhio Highway operates with two northbound travel lanes and one southbound travel lane south of the Temporary Kapaa Bypass Road. By managing the existing transportation system, capacity can be gained when demand is highest without added pavement or new permanent roadway facilities.

SAFETY CONDITIONS AND AREAS OF CONCERN

The Highway Safety Improvement Program compiles crash data for state roadways and state and county intersections. Crash data was provided by the HDOT under the protection of 23 U.S.C. 402(k) and 409, and is intended for highway safety and educational purposes only. Intersections on state roadways that had more than 9 crashes during the 2008 to 2010 timeframe are reported as high crash locations. The Island of Kauai reported seven high crash locations island wide, but only one high crash intersection is located within the study area.

- » Kuhio Highway (Route 56) at Kuamoo Road.

A total of 12 crashes were reported at this intersection between 2008 and 2010.

Crash data reported between 2007 and 2011 was also provided for this study. This data, compiled by the HDOT Highway Safety Improvement Program, is provided under the protection of 23 U.S.C. 402(k) and 409, and is intended for highway safety and educational purposes only. Crash locations within the study area were generally located in populated areas along Kuhio Highway. **Exhibits 3-26** through **3-30** depict the crash locations, the crash type, and the crash severity.

Between 2007 and 2011, nine fatal crashes occurred within the study area. Six fatal incidents occurred on Kuhio Highway between Kauai Beach Drive and just north of the Wailua Golf Course.

One fatal accident was recorded in 2008 on Kuamoo Road, approximately 0.9 mile *mauka* of Kuhio Highway. Another fatal accident was recorded in 2010 on Kuhio Highway near the north end of Aleka Loop. One fatal crash was recorded on Kawaihau Road near Puukaa Road.

No fatal crashes involving pedestrians, bicyclists, or mopeds were recorded within the study area between 2007 and 2011.

Figure 3-26 shows the locations of motor vehicle crashes within the study area. Non-fatal accidents generally occurred in areas where vehicles often turn onto or off of Kuhio Highway, such as near the Kapaa Shopping Center or the Kauai Village/Waipouli shopping complexes. Non-fatal crashes involving motor vehicles and pedestrians were most common in historic downtown Kapaa. **Exhibit 3-27** shows that four incidents occurred near the intersection of Kuhio Highway at Kukui Street, while two recorded incidents occurred near Lehua Street. Two separate vehicle and pedestrian-involved incidents occurred at the intersection of Kuhio Highway and Mailihuna Road.

Crashes involving bicyclists and motor vehicles occurred throughout the study area. Seven crashes occurred along Kuhio Highway while four incidents were recorded on local roadways in the neighborhoods *mauka* of Kapaa Elementary and High schools. Non-fatal moped and motorcycle crashes primarily occurred on Kuhio Highway, but a handful also were reported on Olohena Road and Kuamoo Road. Bicycle crashes are shown in **Exhibit 3-28** while motorcycle and moped crashes are shown in **Exhibits 3-29** and **3-30**, respectively.

EXHIBIT 3-26. Existing Motor Vehicle Crash Locations (2007-2011)



EXHIBIT 3-27. Existing Pedestrian/Motor Vehicle Crash Locations (2007-2011)

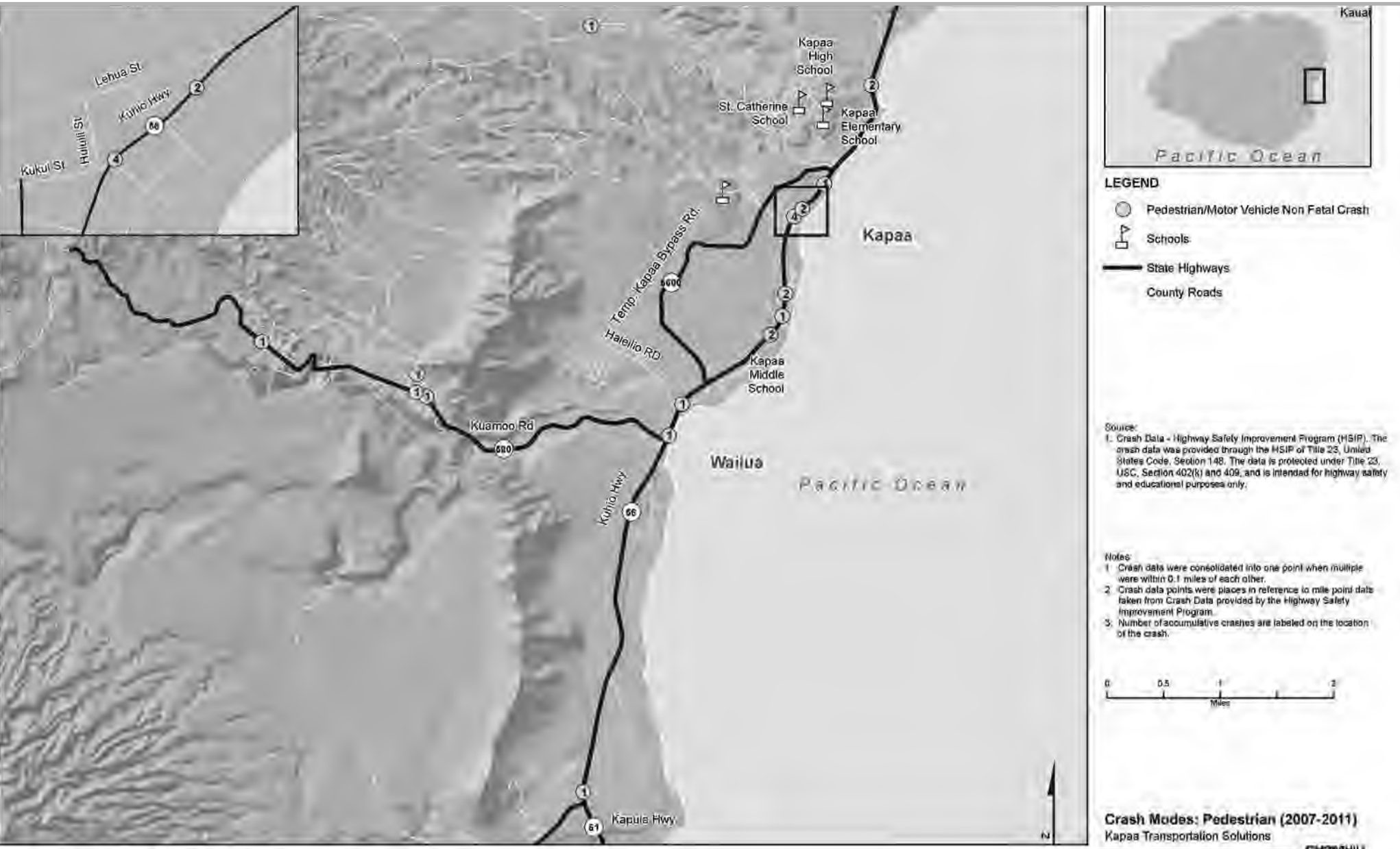


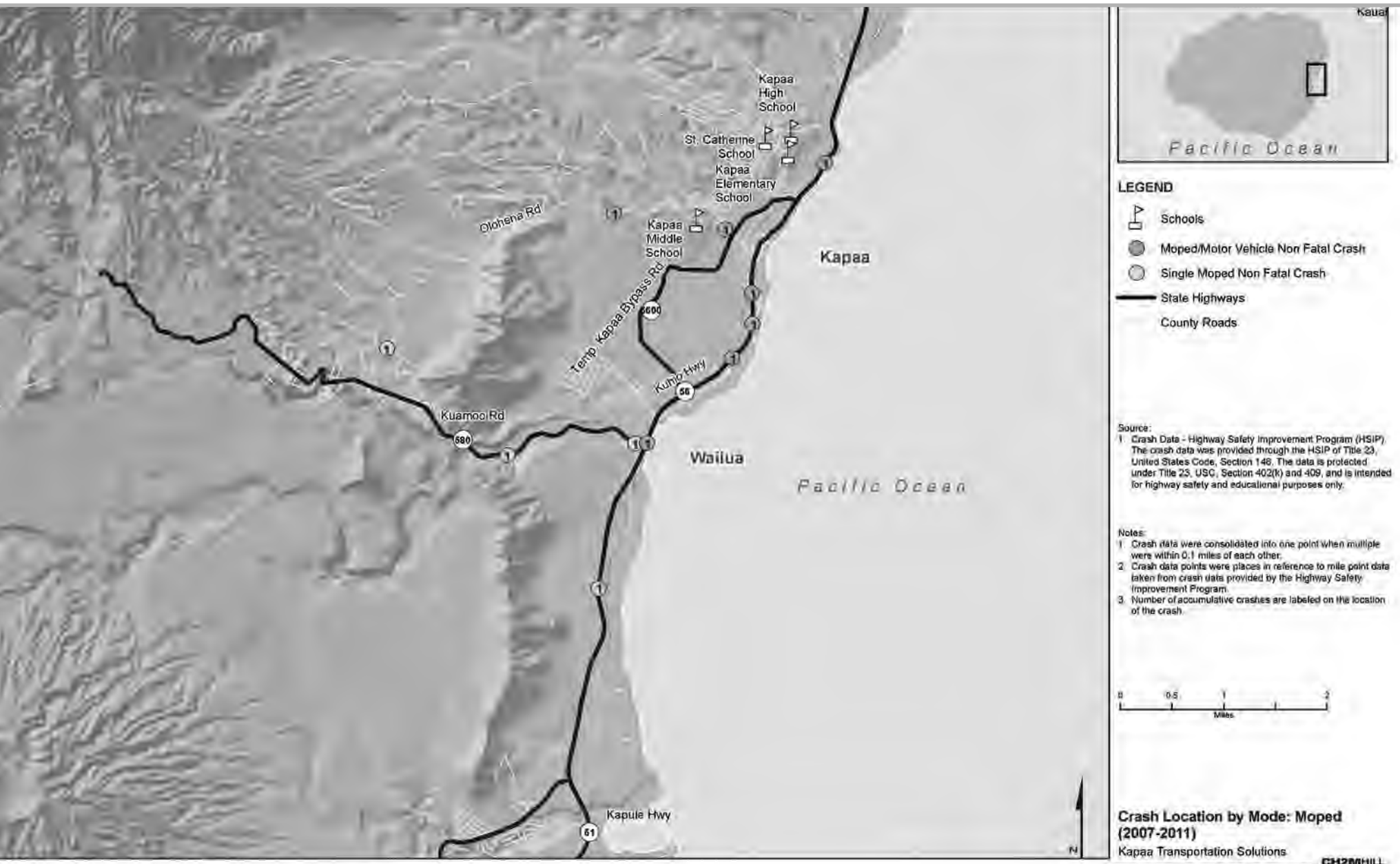
EXHIBIT 3-28. Existing Bicycle/Motor Vehicle Crash Locations (2007-2011)



EXHIBIT 3-29. Existing Motorcycle/Motor Vehicle Crash Locations (2007-2011)



EXHIBIT 3-30. Existing Moped/Motor Vehicle Crash Locations (2007-2011)



Existing Wetlands

Freshwater resources are located throughout the study area. As shown in **Exhibit 3-31**, Kuhio Highway crosses multiple freshwater streams and canals in Kapaa, and designated wetlands are adjacent to major study roadways such as the Temporary Kapaa Bypass Road and Kuamoo Road. The Calvary Chapel Wetland (also known as the Ohai Wetland) is generally bound by Panihi Road to the south and the Temporary Kapaa Bypass Road to the north and west. This wetland is *mauka* of Kuhio Highway and close to the Temporary Kapaa Bypass Road, which indicates it could be affected by potential improvements to the bypass road.

The Kaloko Wetland is situated just south of the southern terminus of the Temporary Kapaa Bypass Road at Kuhio Highway. The wetland is adjacent to Kuhio Highway on the *mauka* side. Given the close proximity to Kuhio Highway, this wetland would likely be affected by any widening of the highway.

Stream crossings are common along Kuhio Highway within Kapaa. At each stream crossing, a bridge structure is necessary to carry traffic and any potential modifications to these bridges may be costly as the effects on the environment would need to be assessed. Modifications to bridge structures on Kuhio Highway would likely also affect traffic flow because in many locations, such as the Kapaa Stream Bridge or the Wailua River Bridge, feasible alternate routes are not available and traffic would likely continue using the bridge during construction. Within Kapaa, an alternate or parallel route to the Waikaea Canal and Moikeha Canal bridges would be the Temporary Kapaa Bypass Road.

Existing Historical and Archaeological Sites

Puuopae Bridge is a historically significant single-lane, single-span, concrete and steel bridge over Kalama Stream in Wailua Homesteads. It is located on Puuopae Road, between Kipapa Road and Kalama Road, and mainly serves low volume residential traffic. It is listed on the State Historic Preservation Division Hawaii Register of Historic Places as well as the National Register of Historic Places (NRHP).

Opaekaa Bridge is a single-lane, steel truss bridge on Opaekaa Road just north of Pulana Street in Wailua Homesteads. It serves low volume residential traffic and is listed on the NRHP.

Kapahi Bridge, located on Kawaihau Road between Kahuna Road and Moalepe Road, is a steel, single-span bridge listed as eligible for recommendation for historic status in the 2013 Hawaii State Historic Bridge Inventory and Evaluation (HDOT, 2013b), which indicates this bridge exhibits unique characteristics that may be historically significant.

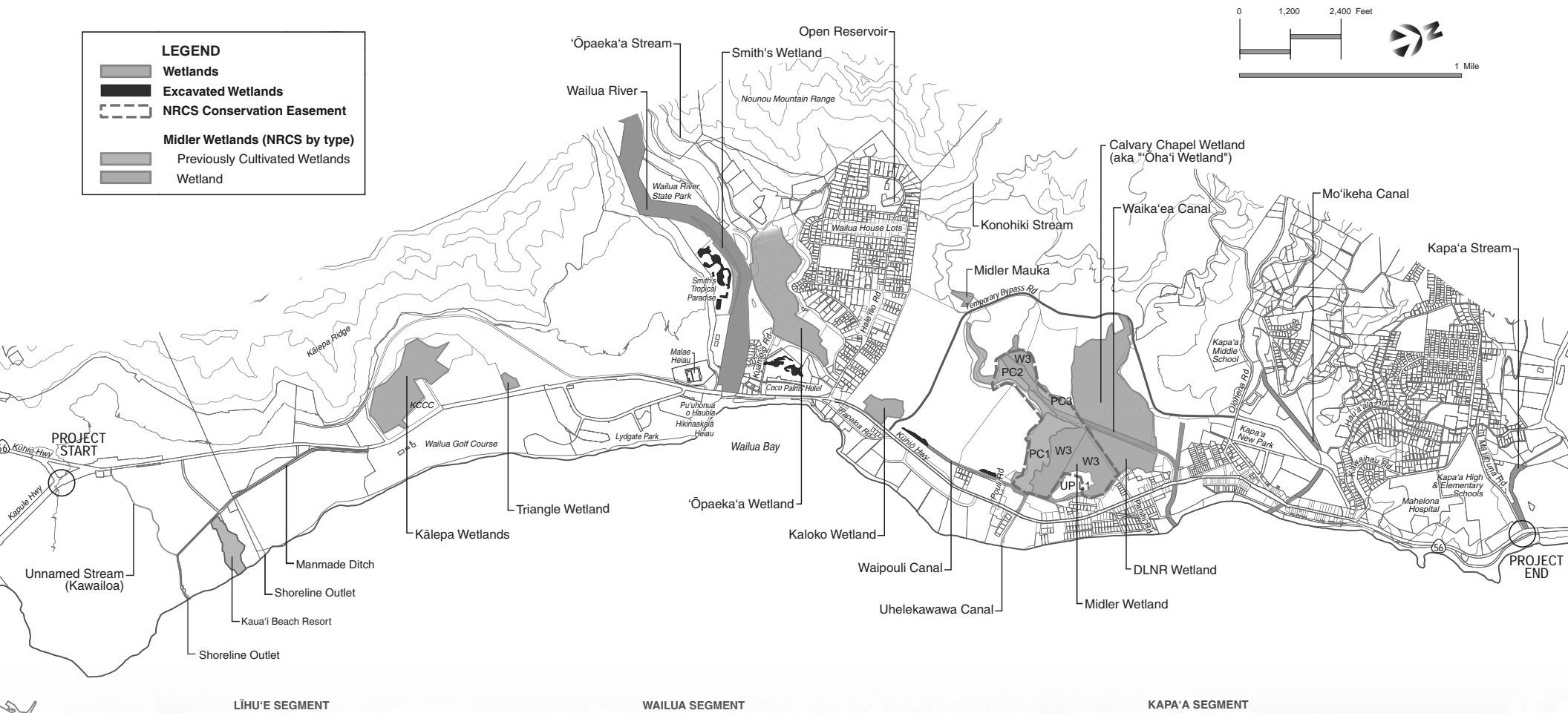
The Weuweu-Kawai-iki fishponds are listed on the State Historic Preservation Division Hawaii Register of Historic Places and are located *mauka* of Kuhio Highway just north of Kuamoo Road on the former Coco Palms property. These historically significant fishponds are adjacent to a relatively high volume section of Kuhio Highway where the contraflow lane operates during the morning weekday peak period.

In 2012, the area encompassing the Wailua ahupuaa and portions of southern Olohena and Hanamaulu ahupuaa was identified as being eligible for listing in the NRHP as a historic district (HDOT, 2012a). The Wailua historic district is comprised of multiple traditional cultural properties that contribute to the significance of the district. The *makai* portion of Wailua described as Wailuanaiaho'ano, and also known as Wailua Kai, is eligible for inclusion in the NRHP as a historic district individually as well as contributing to the significance and associations of the broader Wailua traditional cultural property district (USDOT, FHWA, and SHPO, 2013).

Additional historic properties within the study area include cemeteries, a burial site, and a historic house foundation with a firepit. While the majority of historic properties are not immediately adjacent to study area roadways or transportation facilities, three cemeteries are located adjacent to and just *mauka* of Kuhio Highway. These historic properties, which are just south of Kapaa Stream, just north of Waikaea Canal, and just south of Waikaea Canal, could limit widening improvements on Kuhio Highway.

A historic burial site is located on Inia Street in the downtown district, just *makai* of Kuhio Highway. Further investigation of this site may be necessary to ensure that potential circulation and parking improvements, as well as new non-motorized facilities, do not disturb this historic site.

EXHIBIT 3-31. Existing Wetlands and Waterway, Kapaa Relief Route Draft EIS (2010)



4 Potential Solutions

The potential solutions were identified through both a technical analysis of existing conditions and input and validation from the TAC and KAC. This chapter begins by describing the methodology for identifying the location of the potential solutions and describes those solutions within each area of Kapaa. The potential solutions described in this chapter form the basis for the systems analysis and project recommendations in Chapter 5.

Methodology

The development process used to identify the potential solutions was based on specific technical factors. The project team worked closely with the TAC and KAC to ensure that the potential solutions identified met the goals and objectives of the Plan and represented community concerns.

To identify the potential solutions, goals, objectives, and evaluation criteria were defined at the beginning of the potential solution development process. They were based on technical knowledge of best practices and previous plans and studies, and reflect the information gathered as part of the inventory of existing conditions.

Stakeholders and the project team identified potential solutions to address the recognized needs and issues in the Kapaa area. The project team then evaluated the potential solutions against the Plan evaluation criteria and worked with stakeholders to prioritize the potential solutions.

Solution Development

The project team drew upon a number of sources to develop the list of potential solutions, as follows:

- » Previous plans and studies recommended potential solutions to address identified deficiencies.
- » Stakeholders validated pre-identified potential solutions and identified additional ones.
- » Data collection on crash locations and traffic counts were used to identify safety concerns and locations of congestion.
- » Traffic simulations and models identified the location of capacity and congestion issues.

KAC member explaining where the areas of concern are.

As part of this effort, the project team reviewed relevant previous plans and studies and compiled a list of potential solutions that had been identified. Because many of the studies had been conducted many years ago, it was important to re-evaluate their recommendations and to also look at all of them holistically. The project team reviewed the previously identified potential solutions with the TAC and KAC and learned from them: the background, concerns, and benefits, and whether the potential solutions were still valid. The TAC and KAC also provided additional input and helped to identify new potential solutions.





*KAC members
brainstorming potential
solutions with project
team members*

Based on the background and understanding of the transportation issues and needs unique to the Kapaa area, the project team refined the potential solutions. In addition, based on the existing traffic patterns, crash data, vehicular volumes, and intersection operations, the project team developed additional potential solutions to provide additional capacity and improve congestion and safety. Altogether, a total of 45 potential solutions were developed.

Solution Evaluation and Prioritization

The purpose of the evaluation process is to assess the potential solutions by measuring how well they address the Plan's goals and objectives and the different stakeholder values. The evaluation criteria are tied to the Plan's goals and objectives and weighted according to their importance related to the project purpose, in coordination with the TAC and KAC. The evaluation criteria were developed before identifying the potential solutions to ensure that they are not biased or tailored toward a specific solution. The evaluation criteria, measures, and scores are shown in **Exhibit 2-3** in Chapter 2, Goals and Objectives.

Each potential solution was evaluated against each of the Plan goals, using these measures. A score of 1, 3, or 5 was given, as follows:

- » **1:** The potential solution does not support the goal.
- » **3:** The potential solution is not directly related or does not have a significant impact to the goal.
- » **5:** The potential solutions supports the goal.

Scores for the primary goals were weighted twice as much as the scores for the secondary goals. When a potential solution had been evaluated against all of the goals, the scores were summed into a total grade for that potential solution. The grades were compared between all other potential solutions, and were intended to show the advantages and disadvantages of the potential solutions in relation to each other. Comparisons of the grades were therefore more important than the actual grades themselves. Based on the grades, a preliminary list of prioritized solutions was developed. The prioritized results were shared with the TAC and KAC and further refined based on their input.

Cost Estimates

Planning-level cost estimates for the potential solutions were developed, based on conceptual drawings, preliminary project descriptions, bid tabulations, and typical contingencies. Fiscal year (FY) 2012 prices were used in the cost estimates, but final project costs were escalated to the year of expenditure, assuming an annual inflation rate of four percent.

Estimated planning level costs are important variables for each solution because they allow the solution to be evaluated against fiscal constraints, another tool that decision-makers can use to assess feasibility and determine which projects move forward. Prior to being able to implement any range of solutions, the state and county must logically plan and program individual transportation improvements to address priorities and maximize investments.

Time Frame

Because the primary purpose of this effort is to develop near-term solutions to address mobility needs and congestion, the time it will take a potential solution to reach completion becomes one of the most important factors. The time frame of each potential solution was estimated based on its definition, potential environmental impacts and constraints, and whether the acquisition of additional right-of-way is needed. The potential solutions were categorized into three different time frames:

- » Short-term solutions – potential solutions that could be implemented in less than 5 years
- » Mid-term solutions – potential solutions that will take between 5 and 10 years
- » Long-term solutions – potential solutions that are likely to take more than 10 years

The TAC provided input and validated each potential solution's estimated time frame. For each time frame, a list of prioritized solutions was developed. **Exhibits 4-1, 4-2, and 4-3** show the list of prioritized solutions by time frame. The location of the potential solutions are shown on **Exhibits 4-5** through **4-7**.

Transit and Shuttle Services

Transit vehicles and shuttles can accommodate more people per vehicle than private vehicles, potentially reducing congestion. Potential solutions related to transit and shuttle services include improving mainline transit frequency, expanding shuttle service to serve Wailua Homestead residents, and partnering with

the private sector to create a shuttle program to accommodate visitors. These transit service related potential solutions are listed in **Exhibit 4-4**. Transit-service-related potential solutions were evaluated separately because transit service projects are implemented and operated by the county's transit agency, the Kauai Transportation Agency, and are funded in part by the county and by the Federal Transit Authority. These funds support transit vehicles operations and maintenance of transit vehicles, and are tracked separately from the infrastructure funding mechanisms. However, these transit service projects will still be considered and ongoing coordination with the transit agency continues to occur to ensure that an effective intermodal transportation system can be provided.

Other opportunities to support transit and shuttle services are with infrastructure improvements that support transit. All of the capacity-related potential solutions should include the consideration of bus stops, bus turnouts, and bus shelters.



EXHIBIT 4-1. Prioritized Short-term Potential Solutions

Project Number	Primary Project Type	Area	Project Location	Project Description	Timing	Cost Estimate
1	Safety	Kapaa	Kuhio Highway at Mailihuna Road	Perform intersection improvements	< 5 years	\$1,232,000
6	Capacity	Kapaa	Temporary Kapaa Bypass Road, north of Olohena Road	Addition of one lane in the northbound direction, including pedestrian and bicycle facilities. Improve the intersection at Kuhio Highway and the Temporary Kapaa Bypass Road (northern terminus).	< 5 years	\$22,560,000
17	Congestion	Kapaa	Kuhio Highway and Kukui Street – Traffic Signal	Modify existing signal timing to optimize signal operation and reduce queueing length along Kuhio Highway.	< 5 years	\$301,000
28	Congestion	Wailua	Kuhio Highway and Temporary Kapaa Bypass Road (south terminus)	Perform intersection improvements.	< 5 years	\$1,232,000
31	Congestion	Wailua	Kuhio Highway at Haleliio Road	Restrict turns in/out of adjacent commercial driveways. Optimize signal timing.	< 5 years	\$522,000
37	Multimodal	Wailua/ Kapaa	Ke Ala Hele Makalae Multiuse Trail	Complete Phase III.	< 5 years	\$11,430,000
5	Multimodal	Kapaa	Kawaihau Road between Iwaena Road and Mailihuna Road	Construct bicycle and pedestrian facilities.	< 5 years	\$1,663,000
15	Safety	Kapaa	Olohena Road near Kapaa Middle School	Relocate or improve the current crosswalk.	< 5 years	\$380,000
33	Congestion	Wailua	Kuhio Highway at Kuamoo Road	Provide shared left/right and right-only turn movements from Kuamoo Road approach during contraflow operations to improve queue/delay. Provide adequate right turn storage length.	< 5 years	\$613,000
42	Transit	Wailua/ Waipouli/ Kapaa	Various locations	Construct bus shelters to encourage ridership.	< 5 years	\$532,000
43	Transit	Wailua/ Waipouli/ Kapaa	Various locations	Construct bus pull-outs.	< 5 years	\$1,772,000
34	Congestion	Wailua	Kuhio Highway at Kuamoo Road	Optimize signal timing.	< 5 years	\$301,000
48	Congestion	Kapaa	Olohena Roundabout	Add a separate eastbound right-turn lane at roundabout from Olohena Road to Temporary Kapaa Bypass Road southbound.	< 5 years	\$1,271,000
2	Safety	Kapaa	Kawaihau Road at Mailihuna Road and Hauaala Road	Perform intersection improvements.	< 5 years	\$4,623,000
32	Congestion	Wailua	Kuhio Highway at Haleliio Road	Provide double left-turn movements from Haleliio Road to northbound Kuhio Highway during non-contraflow operations. Optimize signal timing.	< 5 years	\$301,000
27	Capacity	Wailua	Kuhio Highway between Temporary Kapaa Bypass Road and Kuamoo Road	Add one southbound lane along Kuhio Highway with improvements at major intersections.	< 5 years	\$30,000,000

EXHIBIT 4-2. Prioritized Mid-term Potential Solutions

Project Number	Primary Project Type	Area	Project Location	Project Description	Timing	Cost Estimate
16	Economic Vitality	Kapaa	Kuhio Highway at Kukui Street Intersection	Close the eastern leg of Kukui Street and convert Kukui Street between Kuhio Highway and Inia Street to business parking. Implement multimodal (vehicular and pedestrian) intersection improvements at Kuhio Highway and Huluhili Street.	5-10 years	\$539,000
3	Safety	Kapaa	Hauaala Road at Kuhio Highway	Terminate the eastern end of Hauaala Road with a cul-de-sac. Create a new connection from Hauaala Road to the Temporary Kapaa Bypass Road. (This project should be complete after—or with—the Temporary Kapaa Bypass Road widening for two-way travel [Project 6]).	5-10 years	\$3,924,000
8	Congestion	Kapaa	Kapaa New Park	Create a direct access from Kapaa New Park to the Temporary Kapaa Bypass Road, including bicycle/pedestrian access between the existing park and proposed soccer park.	5-10 years	\$4,102,000
19	Economic Vitality	Kapaa	Historic Kapaa Town Parking	Provide shared parking stalls for businesses at United Church of Christ and along Kahau Road, pumping station, library, and industrial zoned lands.	5-10 years	TBD
20	Congestion	Kapaa/Waipouli	Kuhio Highway and Lehua Street Intersection	Improve left-turn movements from Lehua Street onto Kuhio Highway.	5-10 years	\$103,000
38	Capacity	Wailua	Kuhio Highway between Kuamoo Road and Kapule Highway	Add one southbound lane.	5-10 years	\$43,458,000
4	Multimodal	Kapaa	Kawaihau Road between Mailihuna Road and Kapahi Park	Construct bicycle and pedestrian facilities.	5-10 years	\$10,806,000
29	Congestion	Wailua	Temporary Kapaa Bypass Road Southern Terminus	Re-align with Aleka Loop or Papaloa Road with intersection improvements to the Temporary Kapaa Bypass Road (south terminus).	5-10 years	\$3,316,000
21	Capacity	Waipouli	Kuhio Highway between Kauai Village Shopping Center and Akia Road	Add one northbound lane.	5-10 years	\$10,684,000
22	Capacity	Waipouli	Kuhio Highway between Akia Road and the Temporary Kapaa Bypass Road southern terminus	Add one southbound lane.	5-10 years	\$22,242,000

Project Number	Primary Project Type	Area	Project Location	Project Description	Timing	Cost Estimate
25	Safety	Waipouli	Temporary Kapaa Bypass Road, south of Olohena Road	Improve the horizontal alignment and shoulders of the Temporary Kapaa Bypass Road south of Olohena Road to Kuhio Highway.	5-10 years	\$9,112,000
35	Multimodal	Wailua	Kamalu Road between Kuamoo Road and Olohena Road	Improve Kamalu Road to accommodate non-motorized modes.	5-10 years	\$7,820,000
46	Transit	Wailua	Wailua	Construct a park-n-ride facility in Wailua to encourage public transit ridership.	5-10 years	\$1,277,000
7	Capacity	Kapaa	Kuhio Highway between Kawaihau Road and Lehua Road	Provide a two-way turn lane along Kuhio Highway.	5-10 years	\$2,992,000
26	Congestion	Wailua	Kuhio Highway between the Temporary Kapaa Bypass Road and Kuamoo Road	Provide a permanent contraflow lane.	5-10 years	\$1,070,000
9	Safety	Kapaa	Olohena Road at Kahau Road and Lehua Road	Perform intersection improvements and bicycle/ pedestrian improvements from the intersection to Kuhio Highway.	5-10 years	\$45,651,000
36	Multimodal	Wailua	Kuamoo Road between Kuhio Highway and Kamalu Road	Improve Kuamoo Road to accommodate non-motorized modes.	5-10 years	\$6,965,000
11	Safety	Kapaa	Olohena Road at Kaapuni Road and Kaehulua Road	Perform intersection improvements.	5-10 years	\$5,290,000
12	Multimodal	Kapaa	Kaapuni Road	Upgrade/improve Kaapuni Road to major collector standards, including bicycle lanes.	5-10 years	\$13,156,000
13	Multimodal	Kapaa	Olohena Road between Kuhio Highway and Kamalu Road	Improve Olohena Road to accommodate non-motorized modes.	5-10 years	\$12,053,000
39	Congestion	Wailua	Kuhio Highway between Kuamoo Road and Kapule Highway	Provide a permanent contraflow lane.	5-10 years	\$1,440,000
47	Transit	Kapaa	Kapaa Bus Hub	Relocate the Kapaa bus hub from its existing location near the skate park to a new location on or near the Kuhio Highway mainline, with amenities.	5-10 years	TBD

EXHIBIT 4-3. Prioritized Long-term Potential Solutions

Project Number	Primary Project Type	Area	Project Location	Project Description	Timing	Cost Estimate
23	Capacity	Wailua	Pouli Road Extension	Improve Pouli Road and extend mauka to connect with the Temporary Kapaa Bypass Road (combine with Project 24, if feasible).	> 10 years	\$23,886,000
24	Capacity	Wailua	Eggerking Road Extension	Extend Eggerking Road to connect with the Temporary Kapaa Bypass Road (combine with Project 23, if feasible).	> 10 years	\$6,453,000
40	Security	Wailua/Kapaa	Wailua Bypass Road	Provide a bypass route around Wailua River Bridge.	> 10 years	\$229,519,000
10	Congestion	Kapaa	Connection between Olohena Road and Temporary Kapaa Bypass Road	Provide a new connector road between Olohena Road and the Temporary Kapaa Bypass Road.	> 10 years	\$25,824,000

EXHIBIT 4-4. Prioritized Potential Solutions related to Transit and Shuttle Services

Project Number	Primary Project Type	Area	Project Name	Project Description	Timing	Cost Estimate
44	Transit	Wailua/Waipouli/Kapaa	Kauai Bus - Mainline Service	Improve frequency of mainline transit service through Kapaa and Wailua.	< 5 years	\$218,000/year
45	Transit	Wailua/Waipouli/Kapaa	Kauai Bus - Shuttle Service	Provide shuttle service throughout the day to serve Wailua Homestead residents.	< 5 years	\$109,000/year
41	Economic Vitality	Wailua/Waipouli/Kapaa	Private Shuttle Service	Create a private shuttle between major Kapaa hotels and a designated location in historic Kapaa town, to reduce visitor vehicle trips.	< 5 years	\$360,000/year

EXHIBIT 4-5. Overall Potential Solutions

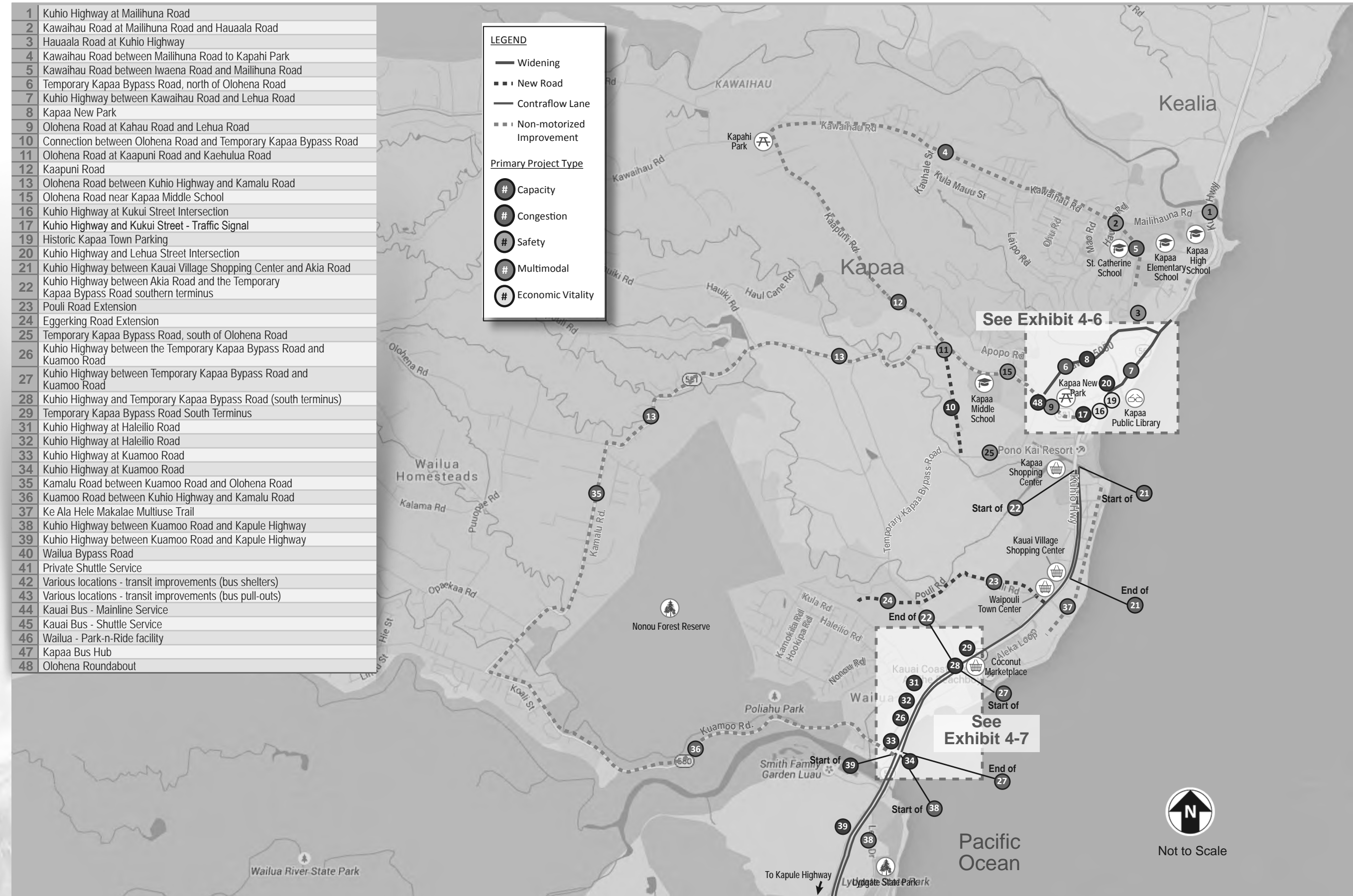
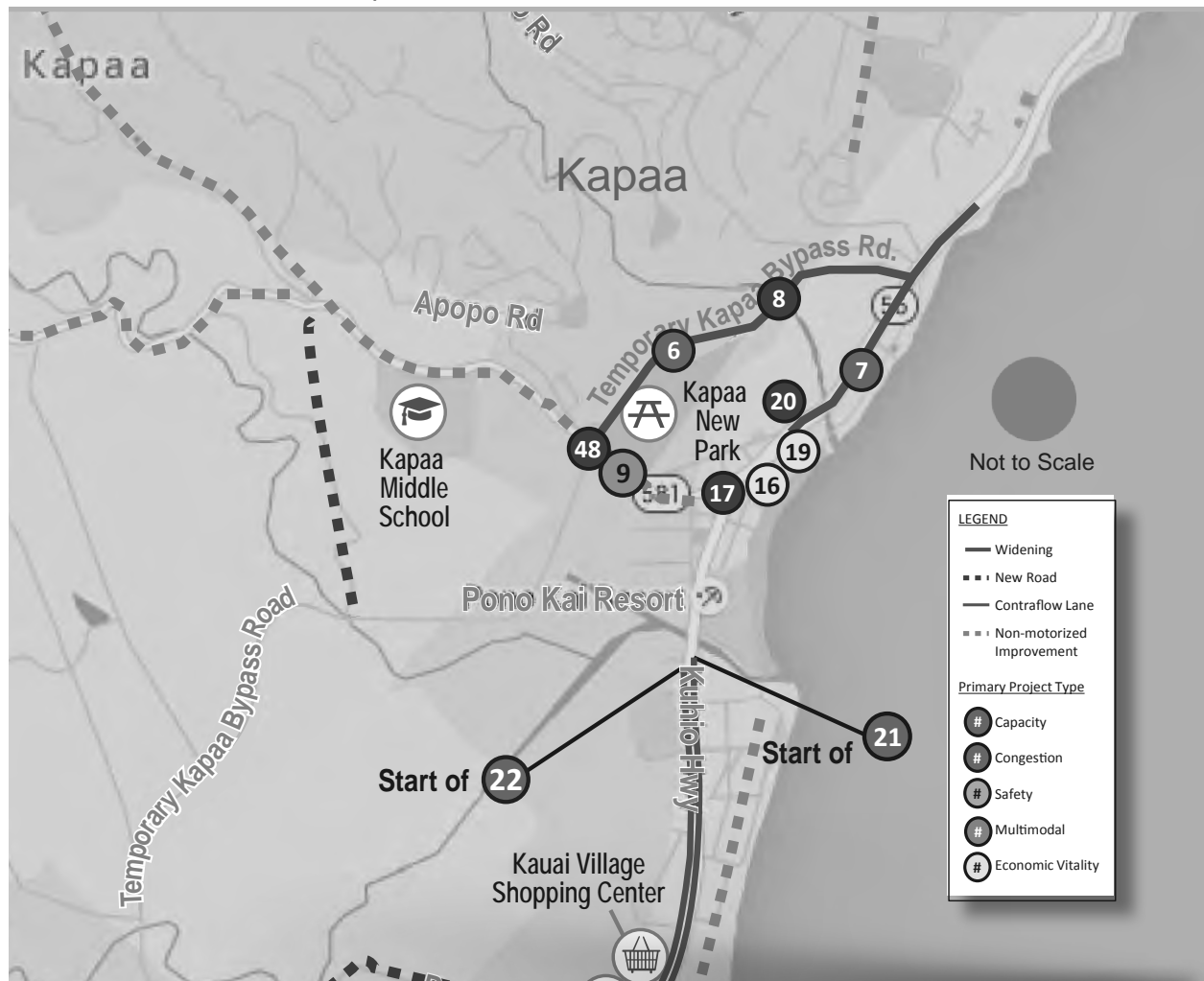
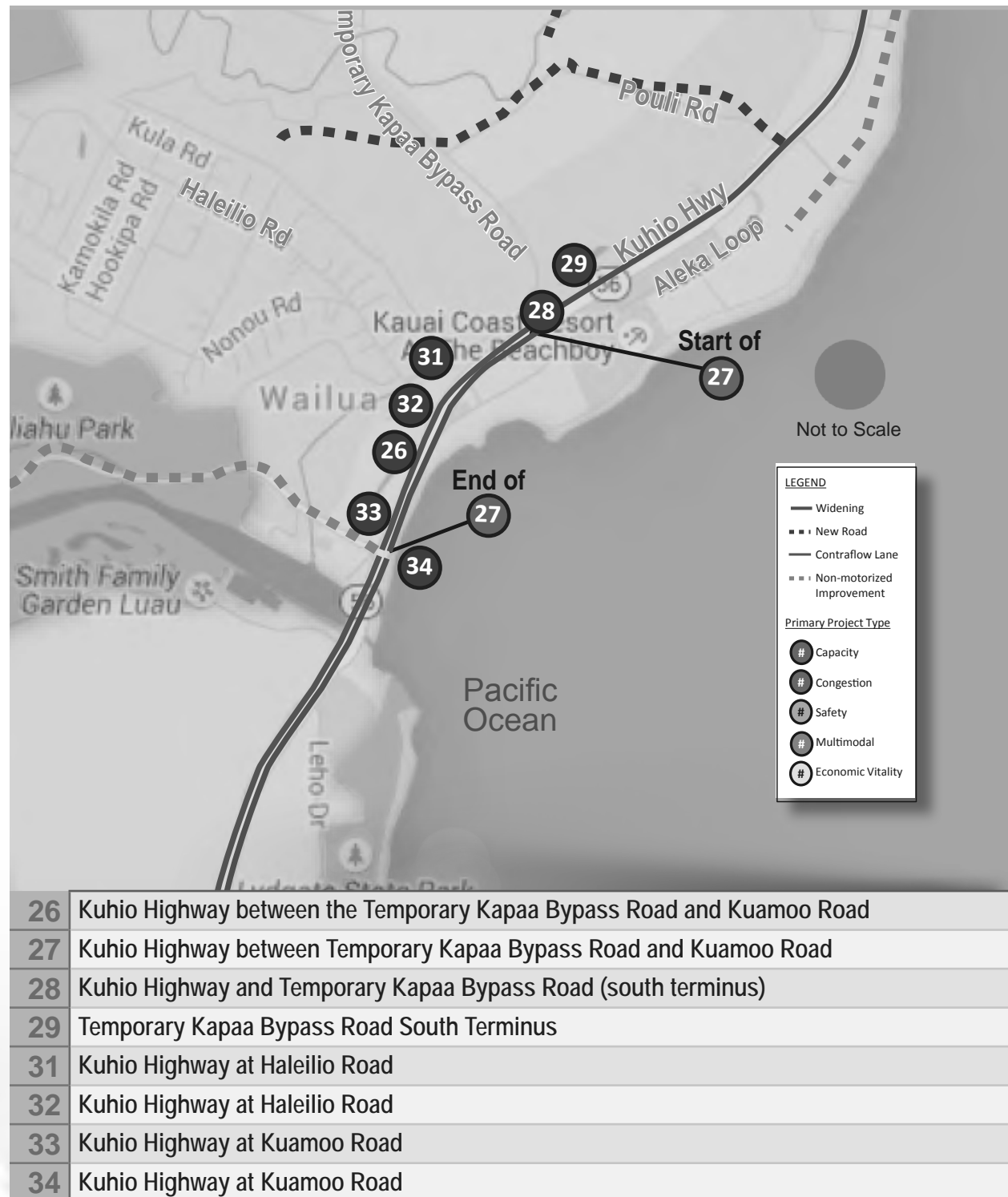


EXHIBIT 4-6. Potential Solutions in Kapaa Town



6	Temporary Kapaa Bypass Road, north of Olohena Road
7	Kuhio Highway between Kawaihau Road and Lehua Road
8	Kapaa New Park
9	Olohena Road at Kahau Road and Lehua Road
16	Kuhio Highway at Kukui Street Intersection
17	Kuhio Highway and Kukui Street - Traffic Signal
19	Historic Kapaa Town Parking
20	Kuhio Highway and Lehua Street Intersection
21	Kuhio Highway between Kauai Village Shopping Center and Akia Road
48	Olohena Roundabout

EXHIBIT 4-7. Potential Solutions in Wailua



5 Implementation

Without effective implementation, plans, visions, and recommendations for alleviating congestion and mobility concerns in the Kapaa area are just words on a page. One of the key driving factors for the Kapaa Transportation Solutions project is providing a path forward for solutions that are both effective and implementable. Implementation not only requires funding commitments, it requires smart investments and the ability to monitor progress over time.

Chapter 5 addresses these issues through a closer look at the following topics:

- » Priority Projects for Implementation
- » Project Delivery Process
- » Projected Funding Sources
- » Funding Strategies for Priority Projects
 - » Performance Measures and Targets



Increasing transit service is a potential solution to reduce capacity needs

Priority Projects for Implementation

It is important to understand that the recommendations presented as part of this study are specifically geared to meeting the study purpose, goals and objectives. Many projects listed in Chapter 4 are important to achieving other goals for the County and the community.

To have a clear path forward for implementation of the Kapaa Transportation Solutions projects,

it is important to understand the benefits of different individual recommendations as described in Chapter 4. However, it is also important to understand collective benefits – what packages of projects are most beneficial to meeting the project purpose, goals, and objectives?

To assess collective benefits, the project team performed a transportation systems analysis – basically, an examination of multiple, individual improvement projects packaged together and analyzed as a single system. The purpose of a systems analysis is to view the transportation system as a unified whole and to evaluate it within the context of the existing land use, socioeconomic conditions, transportation demand, cost analyses, and performance.

The systems analysis can include individual projects located at opposite ends of the study area or within a concentrated hub; the key is to analyze a set of carefully selected projects together so that their cumulative benefits can be evaluated. How a particular improvement project performs in conjunction with another is an important factor in deciding which projects to consider for implementation.

For the Kapaa Transportation Solutions project, the systems analysis approach allows building upon combinations of potential local and regional projects. For instance, by addressing local congestion or circulation issues in downtown Kapaa, local traffic will improve and regional traffic will experience less congestion traveling through the study area.

The systems analysis included two different scenarios: Group A projects (potential projects that can be implemented within 5 years) and Group B projects (potential projects that will be implemented beyond 5 years). The analysis considered both fiscally constrained and unconstrained scenarios.

Projects for both groups were selected based on their collective benefits and being most beneficial to meeting the project purpose, goals, and objectives. Group A projects include the following:

- » ***Widening the Temporary Kapaa Bypass Road north of Olohena Road*** – By providing one travel lane in the northbound direction, drivers will have an alternate northbound connection from downtown Kapaa to the north. (Project 6)
- » ***Widening Kuhio Highway between the Temporary Kapaa Bypass Road (southern terminus) and Kuamoo Road*** – This project would improve capacity by adding one southbound lane to the highway, and would improve intersection operations at Haleilio Road and Kuamoo Road. (Project 27)
- » ***Extending the right-turn lane from Kuamoo Road*** – By lengthening this lane to at least 650 feet, more right-turning vehicles would be able to move through the intersection without being blocked by left-turns. (Project 33)
- » ***Optimizing traffic signals on Kuhio Highway*** – Traffic signals at Kukui Street, Haleilio Road, and Kuamoo Road should be optimized to more efficiently serve northbound and southbound traffic on Kuhio Highway. (Project 17, 31, and 34)

The fiscally constrained Group B scenario includes:

- » ***Widening Kuhio Highway between Kuamoo Road and Kapule Highway*** – This project extends the 4-lane cross section of Kuhio Highway from the Wailua Bridge to Hanamaulu by adding one southbound lane. This project provides nearly 3 miles of capacity and eliminates the need for daily operations of the contraflow lane (an annual cost of \$1,165,000/year). (Project 38)

Additional projects included in an unconstrained Group B scenario are:

- » ***Terminate Hauaala Road at Kuhio Highway*** – This project takes advantage of the proposed fully two-way Temporary Kapaa Bypass Road. It reduces the volume of left-turns to and from Kuhio Highway, which improves traffic flow northbound and southbound, by creating a new direct bridge connection to the Temporary Kapaa Bypass Road. (Project 3)
- » ***Intersection improvements in downtown/historic Kapaa Town*** – Improving the Niu Street intersection with Kuhio Highway would relieve traffic at Lehua Street and at Kukui Street by giving vehicles another option to access the highway. Closing the east leg of Kukui Street would allow the intersection to shrink, making it easier for pedestrians to cross. (Projects 16 and 20)
- » ***Kapaa New Park*** – A new direct access from the park to the new Temporary Kapaa Bypass Road would improve circulation and relieve pressure from Kahau Road by providing an alternative access option. (Project 8)
- » ***Extend Pouli Road*** – This project improves and extends the existing Pouli Road from Waipouli Town Center to the Temporary Kapaa Bypass Road. This new connection allows local trips to move between Kapaa and Waipouli Town Center without having to use Kuhio Highway. (Project #23)
- » ***Extend Eggerking Road*** – Extending Eggerking Road to the Temporary Kapaa Bypass Road would improve access between Wailua and Kapaa. When combined with the Pouli Road extension, this project would operate as an alternative to Kuhio Highway and increase travel options between Wailua and Waipouli. (Project #24)

PERFORMANCE CRITERIA

The Group A and Group B packages were evaluated based on the following two performance criteria, consistent with the purpose, goals, and objectives of the project:

1. ***Travel time*** – The time it takes a vehicle to travel from one end of the study area to the other. In the AM peak, travel times are most

critical in the southbound direction. Two primary travel paths are available – vehicles can either choose to drive on Kuhio Highway for the entire length between Kapaa Stream and Kapule Highway, or they can use the Temporary Kapaa Bypass Road for a portion of their southbound trip. In the PM peak, northbound travel times will be summarized. For northbound travel, there are two existing primary travel paths – vehicles can either choose to drive on Kuhio Highway for the entire length between Kapule Highway and Kapaa Stream or they can use a portion of the Temporary Kapaa Bypass Road for a portion of their trip. With the improvements included in Group A, the northbound trip on the Temporary Kapaa Bypass Road would be extended, as the roadway would no longer end for northbound travel at Olohena Road.

2. ***Person-throughput*** – The number of people crossing a specific location within the study area during an identified timeframe, regardless of mode of travel. For example, although a Kauai Bus full of passengers crossing the Wailua Bridge is just one vehicle, it carries a greater person-throughput than one automobile or bicycle crossing the same location at the same time. Person-throughput will be measured at key locations entering and exiting the study area.

PERFORMANCE RESULTS

The groups of projects were compared both to existing conditions, and projected future conditions in year 2020 without infrastructure improvements (the “No Action” scenario). For purposes of this analysis, the “No Action” scenario did not include the contraflow lane because it is not considered a sustainable solution due to the expense associated over time.

By the year 2020, growth in households and population is expected within the study area. Traffic operations within and through Kapaa and Wailua will worsen without roadway improvements. In the morning, southbound travel times into Lihue can be expected to

increase by approximately 75 percent (on Kuhio Highway) from just over 16 minutes today to nearly 29 minutes in 2020. Taking the Temporary Kapaa Bypass Road, a southbound trip during the morning peak will take over 35 minutes in the year 2020. The existing roundabout at Olohena Road and the Temporary Kapaa Bypass Road will be over capacity with high delay on both the eastbound and southbound approaches.

During the afternoon peak, northbound travel times on Kuhio Highway will increase by nearly 4 minutes between Kapule Highway and Mailihuna Road – from just over 24 minutes today to approximately 28 minutes in year 2020.

To alleviate travel times, the Group A package of improvement projects address current congestion in the peak direction near the Wailua River Bridge. Southbound travel times during the morning peak are expected to improve by over 5 minutes (driving on Kuhio Highway) and by over 10 minutes (driving on the Temporary Kapaa Bypass Road). The additional southbound lane, which is expected to begin at the southern Terminus of the Temporary Kapaa Bypass Road, will allow a free right-turn movement onto Kuhio Highway. This additional southbound lane will provide increased capacity through Haleilio Road and Kuamoo Road. Northbound travel times on Kuhio Highway during the afternoon peak are expected to improve by approximately 3 minutes.

Further improvements included in the Group B package of projects include the widening of Kuhio Highway to a 4-lane cross section between Kuamoo Road and Kapule Highway. This additional capacity will eliminate the current southbound bottleneck south of the Wailua River, thereby improving congestion and reducing travel time by nearly 8 minutes, compared to just the Group A projects. In addition, the annual funding (\$1,165,000) for the temporary contraflow lane will no longer be needed and can be used for much needed highway maintenance projects.

Some of the travel time results show a slight increase in travel time when looking at Group B (unconstrained) compared to Group B (constrained). While this may seem counterintuitive, the reason for the increase is because of the inclusion in Group B (unconstrained) of Project 3, which would create a new direct connection from Hauaala Road to the Temporary Kapaa Bypass Road. This attractive new roadway connection would improve access to and from the Kapaa Homesteads neighborhoods, and would increase the number of vehicles using the Temporary Kapaa Bypass Road (therefore increasing opportunities for delay at the Olohena Road roundabout).

Exhibit 5-1 shows a map of the locations described for travel time and person-throughput calculations.

EXHIBIT 5-1. Travel Time and Person-Throughput Measurement Locations



Exhibit 5-2 shows the anticipated year 2020 AM and PM travel times between Mailihuna Road and Kapule Highway, using either Kuhio Highway or the Temporary Kapaa Bypass Road, for Group A, Group B (constrained), and Group B (unconstrained), as well as if no projects were to be implemented.

Exhibit 5-3 shows the anticipated year 2020 person through-put at key points of congestion (the Wailua River Bridge and Kapaa Roundabout) for Group A, Group B (constrained), and Group B (unconstrained), as well as if no projects were to be implemented.

EXHIBIT 5-2. Year 2020 AM and PM Travel Times in minutes *(Between Mailihuna Road and Kapule Highway)*

		No Action	Group A	Group B (constrained)	Group B
AM PEAK HOUR	Southbound - via Kuhio Highway	28.6	23.0	15.1	14.9
	Southbound - via Temporary Kapaa Bypass Road	35.4	24.7	16.3	22.7
	Northbound - via Kuhio Highway	15.6	14.9	14.7	14.5
	Northbound - via Temporary Kapaa Bypass Road	N/A	20.0	19.9	16.3
		No Action	Group A	Group B (constrained)	Group B
PM PEAK HOUR	Southbound - via Kuhio Highway	22.7	18.3	17.2	17.5
	Southbound - via Temporary Kapaa Bypass Road	20.0	18.7	18.2	20.7
	Northbound - via Kuhio Highway	27.7	24.1	23.6	24.2
	Northbound - via Temporary Kapaa Bypass Road	N/A	25.4	25.3	26.6

Note: Travel times are measured between study area limits via two different paths (Kuhio Highway or Temporary Kapaa Bypass Road).

EXHIBIT 5-3. Year 2020 Person Through-Put % Served *(Kuhio Highway at Wailua River Bridge and Temporary Kapaa Bypass Road at Kapaa Roundabout)*

		No Action	Group A	Group B (constrained)	Group B
AM PEAK HOUR	Kuhio Highway: Southbound at Wailua River Bridge	2013/2832 (71%)	2312/2832 (82%)	2502/2832 (88%)	2457/2832 (87%)
	Kuhio Highway: Northbound at Wailua River Bridge	1046/1049 (100%)	1049/1049 (100%)	1049/1049 (100%)	1049/1049 (100%)
	Temporary Kapaa Bypass Road: Southbound at Roundabout	854/1076 (79%)	1001/1356 (74%)	1006/1356 (74%)	1121/1596 (70%)
	Temporary Kapaa Bypass Road: Northbound at Roundabout	N/A	100/105 (95%)	100/105 (95%)	315/335 (94%)
		No Action	Group A	Group B (constrained)	Group B
AM PEAK HOUR	Kuhio Highway: Southbound at Wailua River Bridge	1352/1589 (85%)	1494/1589 (94%)	1539/1589 (97%)	1544/1589 (97%)
	Kuhio Highway: Northbound at Wailua River Bridge	2638/2815 (94%)	2815/2815 (100%)	2805/2815 (100%)	2785/2815 (99%)
	Temporary Kapaa Bypass Road: Southbound at Roundabout	540/705 (77%)	810/940 (86%)	835/940 (89%)	840/950 (88%)
	Temporary Kapaa Bypass Road: Northbound at Roundabout	n/a	230/250 (92%)	240/250 (96%)	270/285 (95%)

Note: Person-throughput is measured at sample locations where existing congestion/bottlenecks occur (Wailua River Bridge and Kapaa Roundabout).

Priority Project Recommendations

Chapter 4 discussed a wide range of potential projects and how well they individually met the goals, objectives, and evaluation criteria. This chapter provides further analysis by grouping those projects to assess their collective benefits and results. Based on this transportation systems analysis, the Kapaa Transportation Solutions effort recommends for implementation the priority projects listed in **Exhibit 5-4** and shown on **Exhibit 5-5**. These are the projects that best meet the purpose, goals, and objectives of this effort in a financially constrained manner.

As stated earlier, while other projects included in Chapter 4 did not make the list of priority projects for this study based on study purpose, goals, and objectives, other projects included in Chapter 4 may be important for achieving other goals.

The priority list in this study does not imply that other projects in Chapter 4 should not be pursued. The County of Kauai, the State of Hawaii, or both may choose to pursue other projects listed in Chapter 4 to achieve other goals, such as implementing Safe Routes to School.

To establish a constrained list of projects, it is important to understand trade-offs and consider the needs of different users of the transportation system.

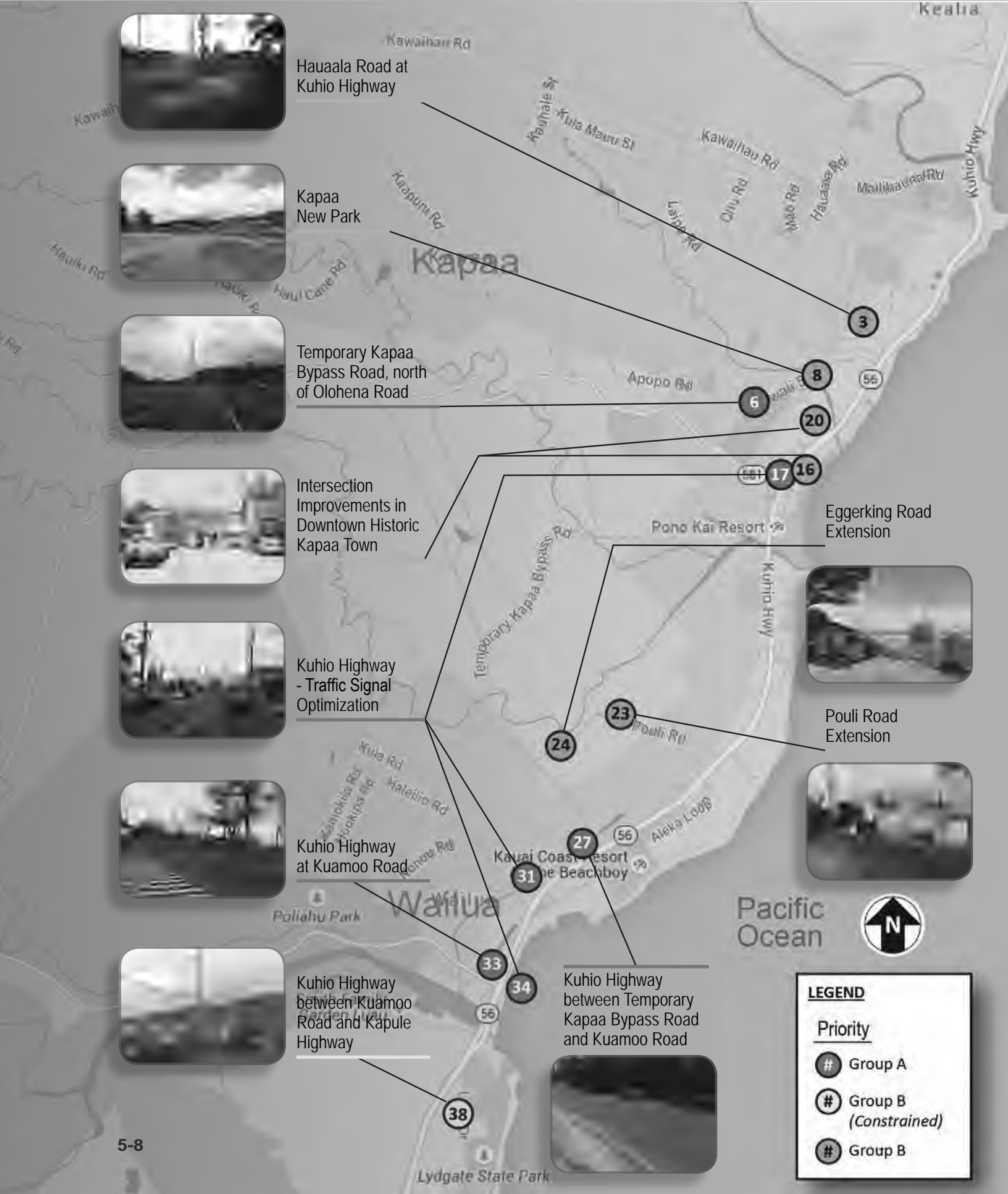
The projects are categorized by the following sets of transportation system users:

- » **Commuter** – Projects that primarily benefit commuters. These projects also often benefit freight movement.
- » **Local** – Projects that primarily benefit local users.
- » **Business** – Projects that primarily benefit the local business community.

EXHIBIT 5-4. Priority Project Recommendations

Project Number	Project Type	Project Location	Project Description	Cost Estimate
6 (Group A)	Commuter Local	Temporary Kapaa Bypass Road, north of Olohena Road	Add one lane in the northbound direction, including pedestrian and bicycle facilities. Improve the intersection at Kuhio Highway and the Temporary Kapaa Bypass Road (northern terminus).	\$22,560,000
27 (Group A)	Commuter Local	Kuhio Highway between Temporary Kapaa Bypass Road and Kuamoo Road	Add one southbound lane along Kuhio Highway with improvements at major intersections.	\$30,000,000*
33 (Group A)	Commuter Local	Kuhio Highway at Kuamoo Road	Provide shared left/right and right-only turn movements from Kuamoo Road approach during contraflow operations to improve queue/delay. Provide adequate right turn storage length.	\$613,000
17, 31, 34 (Group A)	Local	Kuhio Highway – Traffic Signal Optimization	Modify existing signal timing to optimize signal operation and reduce queueing length along Kuhio Highway at Kukui Street, Halelilo Road, and Kuamoo Road.	\$1,124,000
38 (Group B constrained)	Commuter	Kuhio Highway between Kuamoo Road and Kapule Highway	Add one southbound lane.	\$43,458,000
SUBTOTAL COST (fiscally constrained):				\$67,750,000
8 (Group B)	Local	Kapaa New Park	Create a direct access from Kapaa New Park to the Temporary Kapaa Bypass Road, including bicycle/pedestrian access between the existing park and proposed soccer park.	\$4,102,000
16, 20 (Group B)	Business	Intersection improvements in downtown/historic Kapaa Town	Improving the Niu Street intersection with Kuhio Highway would relieve traffic at Lehua Street and at Kukui Street by giving vehicles another option to access the highway. Closing the east leg of Kukui Street would allow the intersection to shrink, making it easier for pedestrians to cross.	\$642,000
3 (Group B)	Commuter Local	Hauaala Road at Kuhio Highway	Terminate the eastern end of Hauaala Road with a cul-de-sac. Create a new connection from Hauaala Road to the Temporary Kapaa Bypass Road. (This project should be complete after (or with) the Temporary Kapaa Bypass Road is widened for two-way travel – Project 6).	\$3,924,000
24 (Group B)	Business Local	Eggerking Road Extension	Extend Eggerking Road to connect with the Temporary Kapaa Bypass Road (combine with Project 23, if feasible).	\$6,453,000
23 (Group B)	Business Local	Pouli Road Extension	Improve Pouli Road and extend mauka to connect with the Temporary Kapaa Bypass Road (combined with Project 24, if feasible).	\$24,406,000

* The funds for this project have already been obligated and are not included in the subtotal and total costs.

[illegible]

Transit Recommendations

In addition to the recommended priority projects, it is important to recognize that transit is important to achieving several project goals. Specific project goals that would benefit from transit solutions include the following:

- » Developing transportation system projects that support the land use
- » Reducing congestion within Wailua and Kapaa
- » Promoting transit use
- » Preserving and enhancing Kauai's natural environment

Chapter 4 (**Exhibit 4-4**) includes a list of prioritized potential solutions related to transit and shuttle services, ranging from increases in service frequency to additional shuttle service. The priority list in this study does not imply that other projects in Chapter 4 should not be pursued. The County of Kauai, the State of Hawaii, or both may choose to pursue other projects listed in Chapter 4 to achieve other important goals.

Project Delivery Process

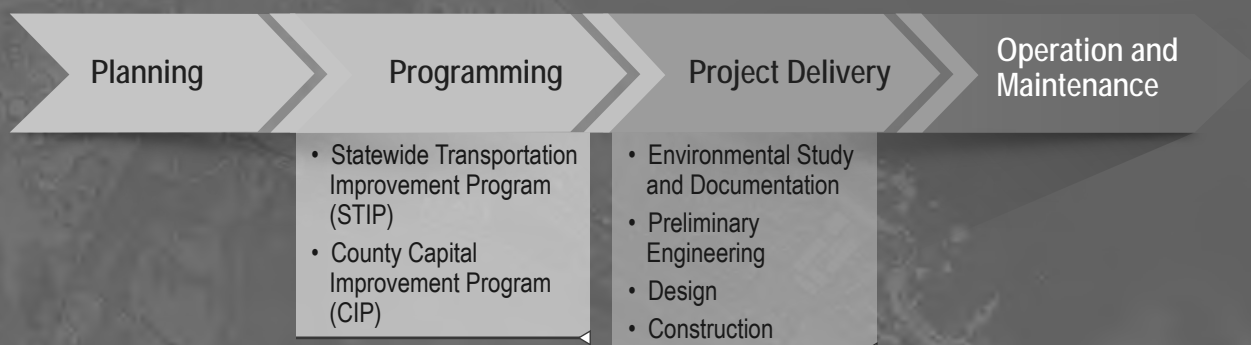
The project delivery process is a key piece of the project life cycle. Project delivery occurs after planning and programming. Planning includes studies like this one. Programming includes identifying funding sources for a project and adding the project into the Statewide Transportation Improvement Program (STIP) or local budget. The STIP connects projects with specific funding programs and allocates funds to implement project solutions over a 4 year period. As projects are programmed and budgeted, they move into the project delivery stage.

Project delivery includes preliminary engineering (environmental and early project design), design and plan development (final engineering), and bidding for construction. **Exhibit 5-6** illustrates the life cycle of a project. During the project delivery stage, a more thorough engineering analysis is conducted on a project's feasibility. During this time, the project will further evolve and may change or be refined from the initial higher-level analysis conducted in the planning stages.

The Kapaa Transportation Solutions are fiscally constrained, acknowledge the limited amount of transportation funds, and responsibly allocate or assign funds to priority projects. However, projects can get stuck moving from planning to project delivery or through project delivery, for a variety of reasons. Sometimes funding is not available. Sometimes the project has not been described clearly, and requires work to gain consensus or understanding. Sometimes a project requires environmental clearance. Sometimes a project requires right-of-way.

As discussed in Chapter 2, Goals and Objectives, the recommendations in the Kapaa Transportation Solutions were derived through application of evaluation criteria consistent with the purpose, goals, and objectives. Many of these criteria are related to mitigating project-delivery stumbling blocks, such as selecting projects that minimize right-of-way needs. The analysis required to apply the criteria also provides information that will simplify the environmental-review process

EXHIBIT 5-6. Project Life Cycle



(such as inventorying wetlands, threatened and endangered species, cultural resources, and historic resources).

This environmental-resource information was mentioned in Chapter 3. By better connecting planning, environmental review, and project delivery for the recommendations of this effort, potential stumbling blocks and delays will be reduced.

Context Sensitive Solutions

The Kapaa Transportation Solutions recommendations were developed using a context sensitive solutions (CSS) framework. According to FHWA, CSS is defined as:

“a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions.” (AASHTO/FHWA, 2007)

The Kapaa Transportation Solutions project incorporated goals and objectives beyond traditional transportation-oriented goals and objectives to reflect the context of the Kapaa area, such as:

- » **Goal 12:** Maintain the rural character of the project area
- » **Goal 13:** Preserve and enhance Kauai’s natural environment.

Goals 12 and 13 include objectives that relate to important values for Kauai, including limiting residential growth on agricultural lands in Wailua and Kapaa, providing transportation facilities that complement the rural character, minimizing impacts to the environment, and providing transportation facilities that complement the natural environment and enhance quality of life.

Goals 12 and 13 and their objectives – along with the other goals and objectives discussed in Chapter 2 - guided the development of Kapaa Transportation Solutions recommendations and provided a foundation for the performance measures and targets developed as part of

the process.

An important component of CSS is context sensitive design, or ensuring that design and construction of projects incorporate understanding of the natural and built environment as well as community and cultural aspects. FHWA identifies the following characteristics for context sensitive designs:

- » The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic, and natural resource values of the area.
- » The project is a safe facility for all users and the community.
- » The project solves problems and satisfies the purpose and needs identified by a full range of stakeholders.
- » The project exceeds the expectations of both designers and stakeholders and is perceived as adding lasting value to the community as a whole.
- » The project involves efficient and effective use of resources (time, budget) of all involved parties.

As the Kapaa Transportation Solutions recommendations are implemented, the work will be done with a context-sensitive approach.

Projected Funding Sources

This section discusses potential federal, state, and local (County of Kauai) funding sources for implementation of Kapaa Transportation Solutions recommendations. This section is consistent with information included in the *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai* (HDOT, 2014).

Transportation funding in the State of Hawaii comes from a combination of federal, state, and local funds, and Hawaii, like many other states, does not have unlimited transportation funding to meet all the transportation needs.

Per HDOT policy (Memorandum 2.6453, dated December 8, 2007), an inflation rate must be used when developing financial plans that include projects funded by federal dollars in the STIP. The HDOT has developed a methodology that uses the average inflation rate as reported by Consumer Price Index data to estimate a constant inflation rate for all financial planning. Based on inflation data from 2003 to 2006, a constant inflation rate of 4 percent per year was calculated. The Highways Division Staff Services Office is responsible for validating and updating the inflation rate each budget cycle.

When adjusted for inflation, federal and state revenues available for all transportation projects – including operations and maintenance – between FY 2011 and FY 2035 would total approximately \$7.01 billion. However, this is for all transportation projects statewide. A specific breakdown for Kauai is discussed in the next sections along with more information on federal, state, and local funding sources.

FEDERAL FUNDING

To present a conservative estimate of available federal funds, one can assume a constant average amount of approximately \$152 million annually for the State of Hawaii.

Federal funds come from the Highway Trust Fund and are raised primarily through the federal gas tax. Federal funding primarily is intended for the maintenance and construction of the federal highway system and for major arterials and collectors that feed into the highway system.

The adoption of MAP-21 in July 2012 changed federal funding methods for future fiscal years. MAP-21 changed the way program funding is distributed to individual states. Previously, core federal highway programs distributed funds to states using individual formulas. With new legislation, a proportional lump sum is distributed to states (based on 2012 distributions received under SAFETEA-LU), and states are able to distribute funds internally to their core programs, with flexibility to transfer funds from one program to another.

While investing in the transportation system could involve new facilities, MAP-21 guidance is largely focused on improving or enhancing current assets, and preserving and maintaining the condition of existing infrastructure.

The Highway Trust Fund, dependent upon the gas tax, has been decreasing for all states over the past few years as the vehicle fleet becomes more fuel efficient and per capita Vehicle Miles Traveled (VMT) continues to decrease nationwide. The Congressional Budget Office estimates that the Highway Trust Fund will not be able to sustain current levels of expenditure without additional funds.

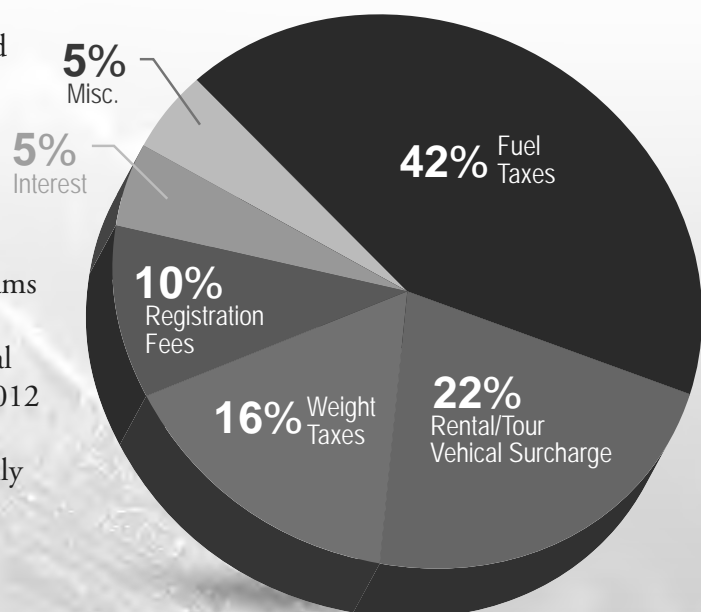
STATE FUNDING

State funds come from the following six primary sources:

- » Highway fuel license tax
- » Vehicle registration fees
- » Weight taxes
- » Rental/tour vehicle surcharge
- » Interest
- » Miscellaneous

Over the past decade of transportation funding, more than 60 percent of all state revenues have been generated from fuel taxes and rental/tour vehicle surcharges. **Exhibit 5-7** represents the breakdown of revenues by sources (FY 2011).

EXHIBIT 5-7. Fiscal Year 2011 Breakdown of Revenues by Source



While federal funding is projected to remain constant, state funding revenues are expected to grow on an annual basis of approximately 1 percent per year.

KAUAI DISTRICT FUNDING

According to the *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai*, historically Kauai has received approximately 8 to 10 percent of the federal and state highway funds. Based on historical distributions, Kauai could expect to receive approximately \$630 million dollars for transportation projects between FY 2011 and FY 2035. The HDOT's goal is to program approximately \$40 million over the next 10 years to implement priority projects identified in this planning effort. This will be dependent on the priorities that emerge over the next 10 years as emergencies or other critical issues may arise.

STIP programming focuses on a short-term timeframe, and contributes to implementing the long-term vision for the transportation system identified in the *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai*. The projects recommended in the Kapaa Transportation Solutions project must support the priorities and available funding identified in the *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai*.

Based on historic spending, stakeholder values, needs, and plan goals, the *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai* provides the future funding distribution by program for Kauai. This is also consistent with MAP-21 and is shown in **Exhibit 5-8**.

EXHIBIT 5-8. Future Funding Distribution by Program

Funding Program	Distribution Percentages
System Preservation	45%
Safety	18%
Capacity	25%
Congestion	10%
Other	2%
TOTAL: 100%	

COUNTY FUNDING

The County of Kauai also has limited funding availability. The County has a 6-year Capital Improvement Program (CIP) in which it lists future capital investments. The County can use General Fund dollars and Highway Fund dollars for transportation projects. According to the County of Kauai, the funds outlined in **Exhibit 5-9** are allocated for FY 2013-2014 for the entire county – for ALL projects island-wide, not just transportation. This provides a basis of understanding of the level of funding available for potential Kapaa projects.

EXHIBIT 5-9. County of Kauai FY 2013-14 Funding Allocation

Name of Fund	Allocation Amount
Bikeway Fund	\$42,577
Bond Fund	\$40,481,351
Development Fund	\$35,568
General Fund (CIP)	\$2,634,945
Highway Fund (CIP)	\$739,592
Sewer Trust Fund	\$614,030
Special Trust Fund – Parks & Playgrounds	\$5,387,278
TOTAL ALL FUNDS: \$49,935,341	

Historically, the County of Kauai has spent approximately \$1 million to \$3 million in local funds each year for transportation-related projects island-wide. If this continues, approximately \$10 million to \$30 million could be anticipated for transportation improvements over the next 10 years. However, this is for all transportation projects (e.g., system preservation, new improvements, and bus infrastructure) island-wide, and not specifically for East Kauai. In addition, other critical priorities could emerge such as emergency repairs.

Funding Strategies for Priority Projects

The total list of priority projects identified during the Kapaa Transportation Solutions effort will outstrip the availability of federal, state, and local funding. Federal, state, and local funding sources have not kept up with the demands for the transportation system.

The fuel tax, which is the largest contributor to the state's transportation budget, is levied based on fuel consumption and is subject to volatility in usage patterns. Consumption patterns can be impacted by improved vehicle efficiency and overall economic conditions. Other tax-based revenue streams are subject to legislative approval and are not modified on a regular basis to keep pace with increasing needs and costs.

Implementation of certain Kapaa projects may require a variety of methods and potential alternative revenue sources, such as the following:

Mileage-based user fees

- » Drivers pay a fee based on the number of miles traveled on public roadways (private roadways would be excluded).
- » Mileage could be tracked through various methods, and prices set based on congestion, location of travel, type of road, or a flat fee per mile.
- » A number of states are implementing pilot programs to study this as a viable alternative to the gas tax.

Special general excise tax on automotive parts and services

- » Taxes would be collected through the performance of specific services (such as vehicle inspections or repairs) and the sale of equipment related to motorized vehicles.

General excise tax increase

- » A portion of revenue from an increase in the general sales tax could be allocated to transportation improvements and projects.
- » Needs to be approved by the legislature or appropriate council.

Public/private partnerships

- » An agreement between a private entity and a public agency to deliver transportation projects may be made, typically with greater involvement and risk taken by the private entity.

Impact fees on new development/right of way donations

- » Private developers pay a pre-determined fee per development unit. This fee is based on the number of vehicle trips expected to be generated by the potential development.

Bicycle registration

- » A bicycle-licensing system could be developed, and user fees could be collected based on the type of bicycle registered. Fees could support maintenance and upkeep of bicycle lanes and shared roadways.

Carbon tax/cap

- » A fee or tax could be imposed on producers of large amounts of carbon. These producers would pay a fee to offset their carbon production.

Increase current funding sources

- » Because new sources of funding are difficult to identify, increasing the existing mechanisms – such as raising the rental/tour vehicle surcharge or vehicle weight tax – could generate additional revenue.

Tolls

- » Drivers pay a fee each time a specific public roadway is used or a certain bridge is crossed. Toll fees may change based on the time of day. Tolling in Hawaii would require the legislature to change the current laws that prohibit toll charges.

Grant anticipation borrowing

- » This strategy allows public agencies to borrow against anticipated future federal and/or state revenues to fund capital projects that require large upfront expenditures. Existing programs include Grant Anticipation Revenue Vehicle (GARVEE) bonds for highways and Grant Anticipation Note (GAN) bonds for transit.

State infrastructure banks and other revolving loan funds

- » These are lending organizations initially funded with federal grants, state funds, or both, and operated at the state level. These funds leverage federal and state resources by lending rather than granting federal-aid funds, and can attract nonfederal public and private investment.

Bonds

- » Bonds are issued by the state or other agency to finance assets with long useful lives (such as transportation projects). The administering entity issues bonds with a set return on investment, and investors purchase the bonds to help fund transportation projects. Bonds help smooth the impact of large expensive projects by providing upfront capital, and allowing the state or county to repay over a set amount of time.

Land swaps and donated lands

- » This strategy recognizes that right-of-way costs can be a large portion of total transportation project costs. Working with land owners to either swap land for right-of-way or to donate land for a project could be a way to reduce project costs. Donated land could also be used as a local match to leverage federal funds.

Transportation Investment Generating Economic Recovery (TIGER) grants

- » These are nationally competitive federal discretionary grants for investment in road, rail, transit, and ports to achieve national objectives. Since 2009, Congress has dedicated more than \$4.1 billion through this program.

Community Development Block Grants

- » This program is administered through the U.S. Department of Housing and Urban Development (HUD), and provides annual grants on a formula basis to promote affordable housing, provide services to community members, and create jobs through the expansion and retention of businesses. This could be an option for the Lihue area.

Safe Routes to School Grants

- » Since the passage of MAP-21, funding of

safe routes to school has been administered differently, depending on the state. The HDOT administers a program called SafeRoutes, which includes education and small grant awards for both infrastructure and non-infrastructure projects.

U.S. Department of Defense and Federal Emergency Management Agency funding

- » Some projects may be eligible for U.S. Department of Defense (DOD) or Federal Emergency Management Agency (FEMA) funding, depending on the project's ability to meet DOD or FEMA objectives (for example, preparedness grants).

Transit Grants

- » Transit projects may be eligible for a variety of programs/grants funded through the Federal Transit Administration (both Formula and Discretionary funds).

Performance Measures and Targets

DEFINING PERFORMANCE MEASURES AND TARGETS

Performance Measures are metrics used to assess progress toward meeting goals and objectives. Chapter 2 includes detailed information about the goals, objectives, and evaluation criteria used for this project. For the Kapaa Transportation Solutions project, the performance measures are a subset of the evaluation criteria, and will be used to evaluate the effectiveness of the Kapaa Transportation Solutions recommendations over time. The performance measures are consistent with the purpose of the project, the goals, and the objectives.

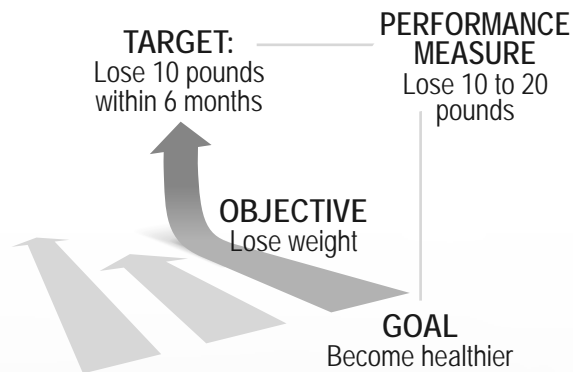
According to FHWA's Performance-Based Planning and Programming guidance, performance measures have five critical purposes:

1. ***To clarify the definition of goals -***
Performance measures are a tool that is used in converting broad goals into measurable objectives.
2. ***To monitor or track performance over time -***
Metrics are used to track performance on regular basis (such as yearly).

3. *As a reference for target setting* - Metrics are used as the basis for selecting a target that is intended to be achieved.
4. *As a basis for supporting policy and investment decisions by comparing alternative options* - Metrics are used as a basis for comparing alternative investments or policies in order to make decisions.
5. *To assess the effectiveness of projects and strategies* - Metrics are what enable measurement to assess whether projects and strategies have worked to further goals.

Targets are specific levels of performance desired to be achieved within a specific timeframe. A target is an expression of a desired outcome. To understand the difference between a performance measure and a target, the following graphic shows how each is defined.

Targets are assessed over time, and can be altered to fit changes over time. For example, say a health professional checks in at 6 months with



the hypothetical person trying to lose weight. If the person has lost 5 pounds, not 10, it may be that the weight-loss method the person is using needs to be re-assessed, or perhaps that the target needs to be changed because it is unrealistic. If at 6 months the person has lost 10 pounds, the target can be changed to losing more weight, or perhaps to stabilizing weight loss. Targets work best when they are clear and specific, straightforward to measure, and monitored regularly.

KAPAA TRANSPORTATION SOLUTIONS - PERFORMANCE MEASURES AND TARGETS

The foundation for the performance measures and targets selected as part of the Kapaa Transportation Solutions project includes the project purpose and the goals and objectives. The purpose of the Kapaa Transportation Solutions project is to develop nearer-term transportation solutions to address mobility and congestion needs for all modes of transportation in the Kapaa Area.

Past experience with other plans has shown that establishing too many performance measures and targets means they will not be monitored, because they are too data-intensive or time-intensive and staff has limited time and resources. Therefore, for the Kapaa Transportation Solutions project, the project team selected a small number of performance measures and targets that will be realistic to monitor over time and are most meaningful to understanding the effectiveness of implementation. The listed performance measures and targets are specifically for measuring the effectiveness of the study and the projects recommended in this study, consistent with the project purpose, goals, and objectives. Other performance measures and targets, such as those identified in County of Kauai Complete Streets reporting, can and should still be used for projects in the area as appropriate. **Exhibit 5-10** presents information on the performance measures and targets for the Kapaa Transportation Solutions project.

EXHIBIT 5-10. Kapaa Transportation Solutions Performance Measures and Targets

Goals	Performance Measures	Targets	Discussion
Improve regional and local vehicular/freight capacity and reduce congestion through Wailua and Kapaa.	» Person-throughput	» Increase person-throughput by 5 to 10 percent in 5 years	The TAC and KAC recognized that person through-put is a key success factor for implementation of projects in the Kapaa Area.
Efficiently plan and implement effective mobility solutions within a short time frame (5 to 10 years).	» Number of solutions implemented within 5 years » Number of solutions implemented within 10 years	» 4 to 5 solutions in 5 years » 8 to 10 solutions in 10 years	This performance measure will help track and help ensure that the plan is actively being implemented in the short-term. The collective recommendations from the plan are meant to represent the most effective way of meeting the project goals and objectives regarding mobility.
Create a balanced, multimodal Complete Streets transportation network that provides options for and access for bicycles and pedestrians. Promote transit use.	» Number of projects implemented that have bicycle and pedestrian facilities within 5 years » Weekday transit ridership	» 4 to 5 solutions in 5 years » Increase weekday transit ridership by 5 percent in 2 years	Increasing transportation choices and providing the necessary infrastructure will encourage the progress toward promotion of multimodal or non-infrastructure options for travel.
Improve safety of the community and maintain safe operations for all transportation modes.	» Number of traffic collisions involving serious injuries and fatalities.	» Zero fatalities	Although safety is a secondary goal for the project, it is important to monitor.
Maintain the rural character of the project area. Preserve and enhance Kauai's natural environment.	» Address in East Kauai Community Plan 2035 » Projects implemented are consistent with the rural character of the project area and preserve and enhance Kauai's natural environment. » Annual gallons of motor fuel consumed in Kapaa-Wailua region	» Upon Plan completion » All projects recommended in this study are designed in ways that minimize environmental and community impacts » Reduce motor fuel consumption each year	Land use is an important component of the overall approach to managing congestion in the Kapaa Area. The East Kauai Community Plan 2035 should be consistent with the Kapaa Transportation Solutions project. Project design of recommendations should minimize impacts on the environment and rural character. Consumption of motor fuel is a way to measure impacts on the natural environment.

MONITORING

Monitoring and reporting on the effectiveness of this plan will help the HDOT, the County of Kauai, and the public understand how the Kapaa Transportation Solutions project is progressing toward the purpose, goals, and objectives put forth in the Plan. The HDOT and County of Kauai are responsible for monitoring and reporting on the performance measures and targets identified in this plan, as shown in **Exhibit 5-11**.

Reporting is not meant to be arduous, but it is meant to provide information that can inform future actions. The report should include the following information:

- » Executive summary
- » Description of the projects or program implemented since the last report
- » Description of other external changes (for example, political, environmental, or socio-economic) since the last report
- » Performance measurement and results, including whether or not the transportation or land use system is meeting the targets
- » Recommendations regarding next steps (such as describing what was accomplished, what was learned, and what might need to be changed)

EXHIBIT 5-11. Performance Measures/Targets Monitoring and Recommended Reporting Schedule

Performance Measure	Responsible Agency	Recommended Reporting Schedule
Person-throughput	HDOT	» Every 5 years » Safety and transit ridership every 2 years » Gallons of motor fuel consumed every year
Number of solutions implemented within 5 years	HDOT County of Kauai	
Number of solutions implemented within 10 years	HDOT County of Kauai	
Number of projects with bicycle and pedestrian facilities implemented within 5 years	HDOT County of Kauai	
Weekday transit ridership	County of Kauai	
Reduce the number of traffic collisions involving serious injuries and fatalities	HDOT County of Kauai	
Complete East Kauai Community Plan 2035	County of Kauai	
Projects implemented are consistent with the rural character of the project area and preserve and enhance Kauai's natural environment	HDOT County of Kauai	
Annual gallons of motor fuel consumed in Kapaa-Wailua region	County of Kauai	

CONCLUSION

Collectively, the priority projects for implementation, transit recommendations, and monitoring of performance measures and targets will help the Kapaa area - along with the Hawaii Department of Transportation and the County of Kauai - to meet the goals and objectives for Kapaa Transportation Solutions:

- » Developing transportation system projects that support the land use (businesses, parks, schools, etc.);
- » Improving regional vehicular/freight capacity and reducing congestion through Wailua and Kapaa;
- » Improving local vehicular/freight capacity and reducing congestion through Wailua and Kapaa;
- » Improving access and connectivity between the communities of Wailua, Waipouli, and Kapaa;
- » Efficiently planning and implementing effective mobility solutions within a short time frame (5 to 10 years);
- » Minimizing project costs;
- » Creating a balanced, multimodal "Complete Streets" transportation network that provides options for and access for bicyclists and pedestrians;
- » Improving safety of the community and maintaining safe operations for all transportation modes;

- » Promoting transit use;
 - » Promoting the expansion of historic Kapaa's economy through efficient and effective use of transportation facilities and amenities;
 - » Minimizing impacts to right-of-way;
 - » Maintaining the rural character of the project area; and
 - » Preserving and enhancing Kauai's natural environment.
- » The recommendations included in this study build upon a foundation of previous work to lay out a roadmap for implementation opportunities. Implementation of solutions will enhance the transportation system in the Kapaa area while remaining respectful of the people, the planet, and the place.

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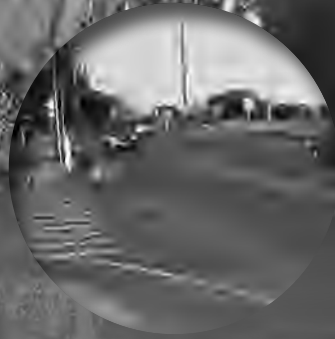
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Appendix A

Kapaa Transportation Solutions

Summary of Previous Studies, Plans, and Policies

TO: State of Hawaii, Department of Transportation (HDOT)
FROM: CH2M HILL
DATE: March 9, 2015

Introduction

The project management team reviewed previous studies, plans, and policies relevant to the Kapaa Transportation Solutions project (Project). This memorandum summarizes the findings, which include transportation resources and multimodal needs within the project area, and deficiencies related to safety, system management of Kuhio Highway, local and regional connectivity, and access.

This summary of previous studies, plans, and policies is an important first step to ensure that the Project will build effectively on previously adopted plans and policies and will be compliant with regional and local requirements. This summary will also help to shape the goals and objectives for the Project and the definition of mid-range potential solutions. The following plans and policies were reviewed:

- Federal-Aid Highways 2035 Transportation Plan for the District of Kauai (HDOT, 2014)
- Kauai County General Plan (County of Kauai, 2000)
- County of Kauai Multi-Hazard Mitigation Plan (County of Kauai, 2009)
- Bike Plan Hawaii (HDOT, 2003)
- Complete Streets Policies, HDOT and Kauai County (HDOT, 2010; County of Kauai, 2010a)
- County of Kauai Operations Sustainability and Climate Action Plan (2014a)
- Kauai Multimodal Land Transportation Plan (County of Kauai, 2013a)
- Statewide Pedestrian Master Plan (HDOT, 2013a)
- Draft Kauai Parks and Recreation Master Plan (County of Kauai, 2013b)
- Draft East Kauai Community Plan 2035 (County of Kauai, 2010b)
- Kapaa Relief Route, Hanamaulu to Kapaa, Pre-Draft Environmental Impact Statement (Federal Highways Administration, 2010)
- Kuhio Highway Short-Term Improvements, Kuamoo Road to Temporary Bypass Road, FEA (HDOT, 2009)

- Kuhio Highway Widening Traffic Assessment Report (Wilson Okamoto, 2009)
- Traffic Analysis Report for Kapaa Relief Route TSM Alternatives (HDOT, 2008a)
- Kuhio Highway Traffic Operations Review, Wailua to Kapaa (Kimley-Horn, 2005)
- Kapaa Traffic Circulation Study (HDOT, 2002)
- County of Kauai Capital Budget FY 2015 (2014b)
- Hawaii State Historic Bridge Inventory and Evaluation (HDOT, 2013b)

Federal-Aid Highways 2035 Transportation Plan for the District of Kauai, HDOT, Highways Division, July 2014

Purpose and Content

The Federal-Aid Highways 2035 Transportation Plan for the District of Kauai (Federal-Aid Plan) is a long-range plan that provides a foundation for addressing Kauai's transportation needs and achieving its future transportation goals. The Federal-Aid Plan provides guidance on land transportation decisions for the federal-aid highways on Kauai through 2035, and sets the direction for prioritizing land transportation system improvements.

With recent federal legislation placing an emphasis on highway system preservation and infrastructure maintenance, the Federal-Aid Plan draws upon community input and extensive public involvement to sensibly allocate limited available funding to appropriately address future anticipated transportation needs comprehensively.

Findings Related to the Project

The following Federal-Aid Plan goals and objectives are relevant to the Project :

- Goal 1.1, Preserve and enhance the natural environment, including biological and aesthetic resources.
- Goal 1.2, Preserve and enhance Hawaii's cultural resources environment, including archaeological and historical sites.
- Goal 1.5, Promote long-term resiliency relative to all hazards mitigation, namely global climate change, with considerations to reducing contributions to climate change from transportation facilities, and reducing the future impacts of climate change on the transportation system.
- Goal 2.1, Provide a Complete Streets transportation system of motorized and nonmotorized options.
- Goal 2.2, Promote efficient travel between modes by creating connections and removing barriers.
- Goal 2.3, Promote safe connections between modal alternatives.
- Goal 3.1, Manage transportation assets and optimize investments.

- Goal 4.1, Plan, maintain, and operate a transportation system that supports evacuation, response, and recovery for incidents.
- Goal 4.2, Improve resiliency of the state through the transportation system.
- Goal 5.1, Promote the expansion and diversification of Hawaii’s economy through the efficient and effective use of transportation facilities including movement of people, goods, and services in a safe, energy efficient, and environmentally sound manner.
- Goal 6.1, Improve capacity and efficiency, and reduce congestion within the existing transportation system for long-term benefit.
- Goal 7.1, Provide appropriate and reliable transportation access options statewide to all users.
- Goal 8.1, Maintain a safe transportation system for all land transportation modes.
- Goal 8.2, Improve safety of the community through connectivity of the transportation infrastructure.

In addition, during the development of the Federal-Aid Plan, the project stakeholders and the planning team developed potential solutions to address the recognized needs and issues on Kauai. The potential solutions identified within the Kapaa Transportation Solutions project area will be included.

Potential Use in Developing

Project Goals and Objectives:

The goals and objectives of the Project will be aligned with the goals of the Federal-Aid Plan, and will build upon Federal-Aid Plan discussions with stakeholders and the community. These discussions revealed important goals for Kauai’s transportation system include those related to safety, modal integration, system efficiency and congestion relief, and the environment and sustainability.

Potential Project Solutions:

The development of project alternatives and solutions will take the Federal-Aid Plan project list into consideration, so as to not duplicate efforts. Potential solutions will also be developed and prioritized consistent with the important goals and objectives of the Federal-Aid Plan.

Kauai County General Plan, County of Kauai, November 2000

Purpose and Content

The Kauai General Plan (General Plan) provides guidance for land use regulations and the location and character of new developments and facilities on the island. It also provides planning guidance for county and state facilities and services. The General Plan sets the direction for the 20-year vision for the County of Kauai and sets policies to achieve the vision.

The vision for Kauai in 2020 is:

A “garden island” of unsurpassed natural beauty;

A rural environment of towns separated by broad open spaces;

A vital modern society formed by the people and traditions of many cultures;

An island of distinctly individual towns and communities, each with its own unique history and character;

A community which values its historic places and where people practice and draw strength from ancient languages and cultural traditions.

A rural place whose population size and economy have been shaped to sustain Kauai's natural beauty, rural environment and lifestyle.

A community which cares for its land and waters, leading the way with best management practices in the development of roads and other public facilities and in its land development and environmental regulations.

An agricultural center, producing a wide range of crops, food, and forest products for local consumption and export.

A resort destination where visitors are welcomed, supported with adequate facilities, and provided with a variety of cultural and recreational opportunities.

A resort destination whose government and industry leaders respect the island's residents and their need to have a community life where visitors are not always present and who find effective ways to protect residents' customary use of special places for religious and cultural observances, fishing, gathering, hunting and recreation.

An island whose government supports the labor force and small business owners, firmly holding to essential policies and regulations while eliminating unnecessary red tape.

Findings Related to the Project

The General Plan, Appendix A-1 lists construction of a new four-lane Kapaa Bypass as a future highway infrastructure improvement necessary to accommodate growth by the year 2020. Appendix A-1 also identifies widening Kuamoo Road to four lanes between Kuhio Highway and Kamalu Road, and widening Olohena Road to four lanes between the Kapaa Bypass and Kuhio Highway, as projects to accommodate future growth.

Policy related to the highway system includes the following:

- Use General Plan policies concerning rural character, preservation of historic and scenic resources, and scenic roadway corridors as part of the criteria for long-range highway planning and design. The goal of efficient movement of through traffic should be weighed against community goals and policies relating to community character, livability, and natural beauty.
- Consider transportation alternatives to increasing the size and capacity of roadways. Alternatives include increased use of public transit.
- Planning for the Kapaa Bypass should incorporate connector roads between the Bypass and Kuhio Highway and between the Bypass and local roads.
- The state and the county should jointly undertake a study of the existing roadway network and the future transportation needs within the Kapaa-Wailua homesteads area.

- Reserve corridors for future roadways as shown on the General Plan land use map. The corridors are conceptual only and are subject to environmental assessment and evaluation of alternative alignments.

Policy related to Kauai's transit system includes the following:

- Continue to operate The Kauai Bus; seek to increase ridership and expand service, subject to the availability of funds.
- Improve bus stops to increase safety and convenience of service.

The General Plan lists the transit improvements necessary to serve the projected population by 2020. Improvements include increased paratransit service and enhanced pullover areas along roadways to create safe and accessible bus stops.

Policy related to Kauai's bicycle system includes supporting funding to develop Kauai's bikeway system to provide for alternative means of transportation, recreation, and visitor activities (economic development).

The Kapaa Transportation Solutions project will take into consideration recommendations made by the General Plan. The Project will examine travel demand models, land use, and anticipated developments within the Kapaa Transportation Solutions project area and address the appropriateness of the recommendations.

Potential Use in Developing

Project Goals and Objectives:

The goals and objectives of the Project will be consistent with the guidance and policies described in the Kauai General Plan. Evaluation criteria developed for the Project will consider the policies, implementing actions, and strategies identified in the Kauai General Plan to achieve the County's 20-year vision.

Potential Project Solutions:

Project solutions will be developed and prioritized with consideration of *Kauai General Plan* policy direction and as well as direction regarding land use, development, and character of the island.

County of Kauai Multi-Hazard Mitigation Plan, Kauai County Civil Defense Agency and County of Kauai, 2009

Purpose and Content

The purpose of the County of Kauai Multi-Hazard Mitigation Plan is to identify potential natural hazards, assess the vulnerabilities of the island, and develop mitigation measures to reduce the risks of these hazards. The mitigation plan can also be used as an educational tool to inform the public of hazards, and to help public agencies identify and improve resource sharing (such as mapping).

This document identifies risks and hazards that could potentially cost the community in terms of funds, productivity, and personal hardship. Hurricanes and high winds have been identified as the greatest risks for the island of Kauai, with landslides, erosion, and stream flooding also posing serious hazards. Potential mitigation strategies to address these risks are consistent with hazard mitigation guidance in the Kauai General Plan and include improving land use development policies

in high-risk areas, improving coastal management, reviewing building codes and infrastructure development standards, and increasing public awareness of risks and recovery resources. Identified mitigation measures also focus on critical facilities and infrastructure that could result in the protection of life, property, and resources.

Findings Related to the Project

Hazard mitigation goals related to the Project include the following:

- Goal 5 - Secure and maintain lifelines and access for medical assistance and transport of materials and fuel.
 - Objective 1: Identify roadways and ports of entry used during emergencies in disaster response plans and make agreements with debris removal operations to clear roadways during disaster situations to maintain access to pumping stations and fuel storage to operate facilities.
 - Objective 2: Harden hospital facilities and maintain access to the facilities and their utilities.
- Goal 7 - Harden essential and governmental facilities to maintain operations during a disaster and recovery operations.
 - Objective 1: Identify essential facilities and governmental facilities that must maintain operations. Inventory hardening and retrofit requirements.
 - Objective 2: Develop proposals to harden and retrofit facilities and seek funding from the Federal Emergency Management Administration and other federal, state, and county agencies and organizations.

Critical facilities and infrastructure projects that are identified by the multi-hazard mitigation strategy that are applicable to the Project include the following:

- **Alternate routes around major highway bridges** – Acquire land to create alternative routes or by-pass roads around these bridges to assist in evacuation or aid emergency vehicles.

Identifying an alternate route across the Kapaa Stream and an alternate (more *mauka*) route across the Wailua River could be considered during the Project analysis.

Potential Use in Developing

Project Goals and Objectives:

The Project's goals and objectives will consider the hazard mitigation goals described in the County of Kauai Multi-Hazard Mitigation Plan.

Potential Project Solutions:

Project solutions may include alternate, lifeline routes across rivers and streams within the Kapaa and Wailua areas.

Bike Plan Hawaii, HDOT, Highways Division 2003

Purpose and Content

Bike Plan Hawaii is a tool to integrate bicycling into the state's transportation system. It outlines how the state intends to accommodate and promote bicycling, and draws on a combination of existing and future bicycle facilities, policies, and programs to ensure a successful bicycle network. The purpose of Bike Plan Hawaii is to establish a long-term strategy for bicycle facility improvements, enable better coordination between transportation and land-use planning, increase the ability to leverage funds for bicycle facilities, and provide a mechanism to achieve community consensus.

Findings Related to the Project

The goal of Bike Plan Hawaii is to “establish bicycling as a safe and convenient mode of transportation for residents and visitors throughout the state,” through engineering and planning objectives such as new roadway facilities that accommodate bicycles and land use plans/regulations that promote bicycle use. Bike Plan Hawaii defines four different types of bicycle facilities, as follows:

- Shared Roadways – any street or highway that is open to both bicycle and motor vehicle travel, but has no special signage for bicyclists.
- Signed Shared Roadways – any street or highway that is open to both bicycle and motor vehicle travel, and has special signage designating it as a preferred route for bicycle use.
- Bike Lane – a section of road that is designated by striping, signing, or pavement markings for the preferential or exclusive use by bicyclists.
- Shared Use Path – a bikeway that is physically separated from motor vehicle traffic by an open space or barrier, and may be used by pedestrians and other non-motorized users.

Existing facilities within Kapaa and Wailua include the Kauai Multiuse Path (Ke Ala Hele Makalae) along the coast between Waikaea Canal and Kapaa Stream, and a path on Kawaihau Road between Kaapuni Road and Mailihuna Road.

Future proposed facilities noted in Appendix G of Bike Plan Hawaii include improving the existing path on Kawaihau Road and extending that facility into Kapaa Homesteads as well as implementing signed shared roadways on the Kapaa Bypass, Mailihuna Road, Kaapuni Road, Olohena Road, Kuamoo Road, and Kamalu Road. Kuhio Highway through Kapaa and Wailua is also proposed as a signed shared roadway. A future Kauai Commuter Bikeway is proposed along agricultural roads between Waikaea Canal and the Wailua River.

Potential Use in Developing

Project Goals and Objectives:

The goals of the Project will align with the purpose of Bike Plan Hawaii and will consider providing bicycle and non-motorized accommodations on existing and potential new roadways.

Potential Project Solutions:

The potential solutions will consider the proposed facilities included in Appendix G of Bike Plan Hawaii. Analyses will be conducted to confirm the bicycle facility inventory and assess the need and

feasibility for future facilities on state and county roadways within the Kapaa Transportation Solutions project area.

Complete Streets Policy, HDOT, 2009 and County of Kauai Resolution No. 2010-48, 2010

Purpose and Content

The Complete Streets Policy serves as a framework for implementing complete streets throughout Hawaii to better serve all transportation users. This policy is based on direction from local task force efforts, guidance from complete streets best practices across the country, and the provisions of Act 54 and Hawaii Revised Statutes (HRS) §264-20.5. Act 54 requires that the HDOT and the counties within the state adopt a Complete Streets Policy. As a result, the Kauai County Council adopted a county-level Complete Street Policy to promote safe access, encourage multiple travel modes, integrate travel modes, encourage healthy lifestyles, and provide a complete and connected network for pedestrians, bicyclists, motorists, and public transportation.

Adoption of a Complete Streets Policy is intended to provide a comprehensive approach to planning and design of roadway facilities, and to improve the quality of life, roadway safety, and mobility for all travelers.

Findings Related to the Project

Relevant principles of the state's Complete Streets Policy are as follows:

- **Safety** – Plan, design, and construct transportation facilities and land developments to create an environment that reduces risk and supports the safe movement of people and goods by all modes.
- **Flexible design (Context Sensitive Solutions [CSS])** – Design transportation facilities using best practices that integrate community values and recognize the importance of the surrounding context and environment.
- **Accessibility and mobility for all** – Plan and design transportation facilities for ease of use and access to destinations by providing an appropriate path of travel for all users, and enhance the ability to move people and goods throughout the state and its counties.
- **Use and Comfort of all users** – Ensure all users of all abilities including bicyclists, pedestrians, transit riders, and drivers feel comfortable and safe using the transportation system.
- **Appropriate funding** – Support a jurisdiction's ability to secure funding for multimodal facilities and provide a framework to consider and pursue funding sources and opportunities.

At the county-level, the Complete Streets Policy resolution states that all roadway projects be balanced and equitable in accommodating all modes of travel including non-motorized users of all ages and abilities in accordance with Complete Streets principles. Priority shall also be given to pedestrian travel in town centers and other densely populated areas for any new County transportation improvement projects.

Potential Use in Developing

Project Goals and Objectives:

The Project goals and objectives will align with the Complete Streets Policy and be consistent with the relevant principles.

Potential Project Solutions:

Potential Project solutions will be consistent with the Complete Streets Policy and principles.

County of Kauai Operations Sustainability and Climate Action Plan (April 2013-June 2016), County of Kauai, 2014

Purpose and Content

The Operations Sustainability and Climate Action Plan is a working document that identifies strategies for improving resource efficiency while reducing carbon emissions and energy-related expenditures. The Climate Action Plan is guided by a 20-year vision that “the County of Kauai is a responsible steward of the island’s natural environment while meeting the needs of its citizens and providing a healthy and satisfying workplace for its employees,” and is framed around a set of three core principles of sustainability: social responsibility, environmental stewardship, and economic vitality.

Findings Related to the Project

Kauai County’s overall sustainability goal is an 80 percent reduction (compared to 2007 baseline levels) of carbon emissions from County operations by the year 2035. The individual transportation goals and strategies relevant to the Project listed in the Operations Sustainability and Climate Action Plan to achieve the County’s overall sustainability goal include the following:

- Goal 2 - Reduce County fossil fuel transportation energy use by 50 percent by 2023, using 2012 as a baseline.
 - Strategy 2.2 – Encourage County employees to carpool or take the bus to work.
 - Strategy 2.3 – Provide employees with and create awareness of information on how to drive more efficiently.
 - Strategy 2.4 – Establish fuel management protocols and policies to make the County’s fleet more accountable for fuel efficiency.
 - Strategy 2.7 – Explore the replacement or conversion of all buses that use diesel/gas over the next ten years so the County’s entire fleet of buses runs on compressed natural gas, bio-diesel, and/or electricity.
 - Strategy 2.8 – Reduce expenditure of resources (fuel, non-revenue miles, staffing hours, vehicle maintenance requirements, etc.) by 5 to 10 percent through having satellite base yards on the north shore and the western side of the island to use for satellite bus storage and wash facilities.

- Goal 8 – Monitor and prepare for impacts of climate change and sea level rise on County facilities and operations.
 - Strategy 8.1 – Determine long-range impact from climate change (e.g., drought, flood, and sea-level rise) and develop adaptations or mitigations related to County facilities and operations.

Potential Use in Developing

Project Goals and Objectives:

The Project goals and objectives will consider Kauai’s sustainability goals and the direction of the Operations Sustainability and Climate Action Plan. Project goals could be consistent with energy efficiency and fossil fuel emissions reduction.

Potential Project Solutions:

The potential solutions will be aligned with the intent and guiding vision of the Operations Sustainability and Climate Action Plan to provide an efficient transportation system that recognizes the environmental and economic priorities of the island and meets the needs of Kauai’s residents.

Kauai Multimodal Land Transportation Plan, County of Kauai Planning Department, 2013

Purpose and Content

The Kauai Multimodal Land Transportation Plan is guided by the 2000 Kauai General Plan and outlines steps the County should take to achieve a balanced multimodal transportation system by the year 2035. The multimodal plan provides an evaluation and assessment of existing operations, determination of current and future needs, and descriptions of potential solutions and recommendations to address identified needs.

The plan compares two future potential scenarios: a baseline scenario that shows where Kauai’s multimodal system would be in 2035, given current growth trends, and a preferred scenario that assumes growth in vehicular traffic has been controlled to remain at 2010 levels by 2035. This is proposed to be accomplished through “mode shift,” or shifting trips from single occupancy vehicle to walking, bicycling, and transit. The preferred scenario achieves objectives outlined in the *Kauai General Plan*. The multimodal plan includes six programs (transit, bicycle, pedestrian, county roads, agriculture transportation, and land use) by which the multimodal plan will be implemented. The programs include transportation infrastructure recommendations to encourage the mode shift required to achieve the preferred scenario.

Findings Related to the Project

The following goals of the Kauai Multimodal Land Transportation Plan relate to development of the Project:

- **Goal 1:** A balanced, multimodal transportation system that provides choice, flexibility and resiliency in personal access and circulation for all.

- **Goal 2:** A freight transport system that supports the island’s economic sectors, including food and agriculture, health and wellness, sports and recreation, arts and culture, science and technology, and sustainable technologies and practices.
- **Goal 3:** A transportation system that supports economic vitality and provides affordable access to jobs and economic opportunity.
- **Goal 4:** A transportation system that supports and enhances public health.
- **Goal 5:** A transportation system that will be planned and designed to protect and enhance the island’s natural landscapes and environmental quality.
- **Goal 6:** A transportation system that makes efficient use of energy and is less dependent on imported petroleum.
- **Goal 7:** A transportation system that is maintained in a state of good repair.
- **Goal 8:** A transportation system that protects and enhances the cultural values of Kauai, the rural character of the island, and a high quality of life.

The Kauai Multimodal Land Transportation Plan also provides guidelines for prioritizing program and projects, as well as priorities for public investment. The Project will consider the implementation strategies in Chapter 7:

1. Investing resources in the most important things first.
2. Avoiding programs, projects, and actions that are unnecessary and that lead to unintended consequences.
3. Performance measurement and reporting.

Potential Use in Developing

Project Goals and Objectives:

The goals of the Project will align with the purpose of the Kauai Multimodal Land Transportation Plan and will include elements to achieve a balanced, multimodal transportation system.

Potential Project Solutions:

The potential solutions will consider integration of modes as well as new or improved multimodal facilities, and could be guided by the priorities for transportation projects outlined in Chapter 7 of the Kauai Multimodal Land Transportation Plan. Needs and recommendations in the Kauai Multimodal Land Transportation Plan will also be reviewed and coordinated with the Project.

Statewide Pedestrian Master Plan, HDOT, Highways Division, 2013

Purpose and Content

The Statewide Pedestrian Master Plan is a comprehensive effort that focuses on improving pedestrian safety statewide and evaluates ways to enhance pedestrian mobility and accessibility. It identifies the most critical needs of the statewide pedestrian system, including safety improvements or repairs, prioritizes projects and programs to address the needs, and provides strategies to implement the recommendations.

Findings Related to the Project

The following Master Plan goals and objectives are relevant to the Project:

- Goal 1 – Improve pedestrian mobility and accessibility.

Objectives: Increase pedestrian activity, implement projects along state highways to enhance mobility and accessibility, improve maintenance of pedestrian facilities.

- Goal 2 – Improve pedestrian safety.

Objectives: Reduce the number of crashes and fatalities involving pedestrians.

- Goal 3 – Improve connectivity of the pedestrian network.

Objectives: Support development of seamless and continuous pedestrian networks along state highways with connections to paths, walkways, trails, and other pedestrian facilities, encourage pedestrian connectivity across jurisdictions, and support Safe Routes to School programs to encourage more students to walk to and from school.

- Goal 4 – Promote environmental benefits of walking.

Objectives: Reduce overall vehicle miles traveled through increased pedestrian trips, increase the use of other modes of transportation that reduce the use of fossil fuels, integrate pedestrian facility design with the natural environment to the greatest extent possible.

- Goal 7 – Promote and support walking as an important transportation mode that reduces overall energy use.

Objectives: Increase the use of other modes of transportation that reduce the use of fossil fuels, reduce resident and visitor motor vehicle fuel demand to help meet 2030 targets for energy efficiency.

Potential Use in Developing

Project Goals and Objectives:

The goals and objectives of the Project will be consistent with the goals of the Statewide Pedestrian Master Plan.

Potential Project Solutions:

The potential solutions will be developed and prioritized with consideration given to pedestrian needs and the goals of the Statewide Pedestrian Master Plan. The proposed recommendations of the Statewide Pedestrian Master will also be reviewed and considered for the Project.

Draft Kauai Parks and Recreation Master Plan, County of Kauai Department of Parks and Recreation, 2013

Purpose and Content

Building upon policies outlined in the Kauai General Plan to develop and maintain safe and secure public parks and recreation facilities for residents and visitors, the Kauai Parks and Recreation Master Plan is a conceptual, long-range 20-year vision for Kauai's parks and recreation facilities. The

planning process involved community outreach and participation, and resulted in a set of recommendations for future parks and recreation facility improvements by district (Hanalei, Kawaihau, Lihue, Koloa, and Waimea).

The Master Plan will serve as a guide for parks department decisions and will assist in optimization and management of resources and prioritization of improvements to be implemented.

Findings Related to the Project

The Kauai Parks and Recreation Master Plan includes proposed improvements for existing parks and recreation facilities, as well as new facilities, in the Kawaihau district (which includes Kapaa and Wailua).

Recommendations include the following:

- Developing Kapaa New Park into a district park with improved sports fields, a new gym, and a new neighborhood center. Potential impacts to roadways could include extending Kahau Road across Moikeha Canal (via a new bridge) to connect existing park uses to future soccer fields, and improving access from existing roadways to support the anticipated increase in park users.
- Developing Kapaa Town Park into a passive park that could serve as a public connection between the historic downtown/shopping district and the beach. The improved park would likely attract new users, and potential impacts to surrounding roadways could include changes in traffic circulation patterns and increases in parking demand.
- Completing the 2.1-mile section of Ke Ala Hele Makalae between Lydgate Park and Lihi Park (at Waikaea Canal). This section would include a shared-use path suitable for nonmotorized modes.

Potential Use in Developing

Project Goals and Objectives:

The goals and objectives of the Project take into consideration the vision and intent of the Kauai Parks and Recreation Master Plan.

Potential Project Solutions:

The potential solutions will be developed with consideration given to the recommended improvements described for the Kawaihau district in the Kauai Parks and Recreation Master Plan. Potential solutions will consider adequate access, for both vehicular and non-motorized modes to parks and recreation facilities.

Draft East Kauai Community Plan 2035, County of Kauai, Planning Department

Purpose and Content

Chapter 6 of the Draft East Kauai Community Plan 2035 (CP) focuses on transportation and circulation issues, and presents short- and long-range improvements and objectives aimed at alleviating local and regional traffic congestion.

Chapter 13 of the CP describes Kapaa as an important historic town, and includes goals and objectives for development to accommodate growth and progress while maintaining this rural, small-town character.

Findings Related to the Project

A summary of proposed improvements from Chapter 6 and Chapter 13 of the CP is included in the following table.

DRAFT East Kauai Community Plan 2035 Findings

Potential Improvement
Create a roundabout at Mailihuna Road, Hauaala Road, and Kawaihau Road to improve mobility near schools.
Create a roundabout (elongated) on Kuhio Highway to facilitate traffic from Kawaihau Road, Hauaala Road, and Kapaa Bypass. Create dedicated auxiliary right-turn lane to direct traffic from Kawaihau Road to southbound Kapaa Bypass (rather than Kuhio Highway).
Add northbound lane to Kapaa Bypass north of Olohena Road. Terminate Hauaala Road at Kuhio Highway with cul-de-sac. Create new connection from Hauaala Road to Kapaa Bypass north of stream.
Widen the Temporary Bypass Road north of the roundabout to Kuhio Highway. Add one lane in the northbound direction, include pedestrian and bicycle facilities. Install traffic signal at Kuhio Highway and Kapaa Bypass (north intersection).
Upgrade/improve Kaapuni Road to major collector with bicycle lanes.
Extend Kaapuni Road (from intersection with Olohena Road/Kaehulua Road) south to connect with the Kapaa Bypass.
Create roundabout at intersection of Kaapuni Road, Olohena Road, and Kaehulua Road.
Improve the intersection of Kahau Road, Lehua Road, and Olohena Road by creating a roundabout, adding separate turn lanes, or restricting turn movements.
Create a direct access from Kapaa New Park to the Kapaa Bypass.
Develop secondary access through industrial area to Kapaa New Park from Lehua Street/Niu Street intersection. Access would follow Niu Street alignment.
Consider shared parking stalls for businesses at United Church of Christ, along Kahau Road, Pumping Station, Library, and industrial zoned lands.
Improve Pouli Road and extend mauka from shopping center to the Kapaa Bypass. Pouli Road approach to be stop-controlled.
Improve non-motorized facilities on Kukui Road and Olohena Road and create non-motorized connections between Kapaa Middle School and the shoreline multi-use path.
Improve existing roundabout at Olohena Road/Kapaa Bypass to allow for increased non-motorized use, aesthetics, and functionality.
Complete all remaining phases (Phase III and Phase V) of Ke Ala Hele Makalae multiuse path.
Provide alternate routes around major highway bridges (Wailua Bridge).
Create a shuttle between major Kapaa hotels and a designated location in historic Kapaa town to reduce visitor vehicle trips.
Construct bus pull-out areas, crosswalks, bus shelters, and park and ride facilities to encourage ridership.

Potential Use in Developing

Project Goals and Objectives:

The Project's goals and objectives will consider the intent and direction of Chapter 6 and Chapter 13 of the Draft East Kauai Community Plan 2035.

Potential Project Solutions:

The potential solutions developed for the Project will consider the proposed improvements described in the Draft East Kauai Community Plan. Traffic analyses will be conducted to confirm existing conditions and estimate future anticipated traffic operations in relation to the proposed CP improvements.

Kapaa Relief Route, Hanamaulu to Kapaa, Pre-Draft Environmental Impact Statement, State of Hawaii Department of Transportation, 2010

Purpose and Content

This document includes preliminary analyses for four different alignments for the Kapaa Relief Route. The route alternatives include combinations of segments that follow the existing Kuhio Highway, unpaved agricultural roads, and new roadways through agricultural or undeveloped urban lands. The draft Environmental Impact Statement (EIS) includes conceptual drawings of intersection improvements to show how the relief route would connect to the existing roadway network, or where new access to the relief route would be located.

In addition to the new route infrastructure alternatives, the draft EIS also includes a transportation system management (TSM) alternative. This TSM alternative is intended to reduce congestion and improve the efficiency of the existing roadway network with relatively low-cost investments.

Findings Related to the Project

The four new relief route alternative alignments are summarized as follows:

- **Alternative 1, Wailua River Crossing** – This route generally follows existing agricultural roads, mauka of Kuhio Highway, between the southern end of Wailua Golf Course and the Wailua River. It then follows Kuhio Highway to the southern terminus of the Kapaa Bypass, where it generally follows the current Kapaa Bypass alignment north back to Kuhio Highway.
- **Alternative 2, Widen Existing and Bypass Town** – Alternative 2 follows the existing Kuhio Highway alignment from the Wailua River to Papaloa Road, where it begins to run north through agricultural land (*makai* of the Kapaa Bypass). The route meets the existing Kapaa Bypass road near Waikaea Canal, where it generally follows the current Kapaa Bypass alignment north back to Kuhio Highway.
- **Alternative 3, Widen Existing, Second Bridge, and Bypass Town** – This route includes a new bridge crossing of the Wailua River approximately 0.5 mile mauka of the existing Kuhio Highway bridge. The route crosses through residential areas before connecting with the existing Kapaa Bypass and following the Kapaa Bypass alignment north.

- Alternative 4, Mauka Second Bridge – Alternative 4 follows a new route through agricultural and residential areas, *mauka* of Kuhio Highway, from the southern end of Wailua Golf Course to the existing Kapaa Bypass near Waikaea Canal. From Waikaea Canal, Alternative 4 aligns with the Kapaa Bypass north to Kuhio Highway.

The TSM alternatives proposed by the draft EIS and their estimated costs are included in the following table.

Proposed Improvement	Estimated Cost
Extend the north end of Eggerking Road so that it connects to Kapaa Bypass.	\$860,000
Extend the mauka end of Pouli Road so that it connects to Kapaa Bypass.	\$3,630,000
Add a northbound lane to the portion of the Kapaa Bypass from Olohena Road north to Kuhio Highway.	\$2,830,000
Make improvements to the Kapaa Bypass from Olohena Road south to Kuhio Highway.	\$1,640,000
Create a cul-de-sac on Hauaala Road at Kuhio Highway and construct a new collector from Hauaala Road to the Kapaa Bypass.	\$120,000
Install a left-turn pocket on Kuhio Highway northbound for vehicles turning onto Mailihuna Road.	\$340,000

Potential Use in Developing

Project Goals and Objectives:

The goals of the Project will consider the purpose and intent of the draft EIS, to reduce congestion and provide capacity through and within Kapaa and Wailua.

Potential Project Solutions:

The potential solutions will consider the proposed TSM improvements listed in the draft EIS. The proposed intersection configurations for the various Relief Route alternatives, as well as some segments, could also be considered.

Kuhio Highway Short-Term Improvements, Kuamoo Road to Temporary Bypass Road FEA, State of Hawaii Department of Transportation, 2009

Purpose and Content

This final environmental assessment (FEA) describes the environmental impacts of potential highway widening and utility relocation improvements along a 1.7-mile segment of Kuhio Highway between Aleka Loop and Leho Drive. Relocation of overhead utilities is proposed for the entire study length, while highway widening is proposed along 0.64 mile of Kuhio Highway between Kuamoo Road and the southern terminus of the Kapaa Bypass.

Findings Related to the Project

Future increased congestion along Kuhio Highway is anticipated because of growth through Kapaa and Wailua. Population, employment, and the number of visitors is expected to increase in the

future, and without capacity enhancements, traffic conditions along Kuhio Highway would deteriorate. Traffic would become more congested, resulting in longer queues and traffic delays.

Capacity improvements proposed in the FEA include the following:

- Widen Kuhio Highway to include a second southbound lane between the Kapaa Bypass and Wailua River so that there are two travel lanes in each direction at all times of the day.
- Extend the northbound left-turn pocket on Kuhio Highway at the Kapaa Bypass to provide more storage for queued vehicles.
- Signalize the intersection of Kuhio Highway and Lanikai Street. Eliminate the short southbound storage pocket and allow left turns to Lanikai Street via a permissive plus protected phase.
- Remove the existing northbound left-turn pocket at Kuhio Highway and Haleilio Road. Allow left turns to Haleilio Street via a permissive plus protected phase.
- Provide a 300-foot southbound right-turn deceleration lane from Kuhio Highway to Kuamoo Road. Maintain two southbound through-only lanes.
- Coordinate traffic signals at Kuamoo Road, Haleilio Road, and Lanikai Road to optimize traffic flow.
- Extend the *makai*-bound right-turn lane on Kuamoo Road. The right-turn storage lane should be paved to accommodate approximately 650 feet of storage for queued vehicles making turns onto the southbound highway. Related improvements include drainage enhancements, guardrail and signage relocation, and driveway modifications.

Potential Use in Developing

Project Goals and Objectives:

The goals of the Project will be aligned with the purpose and intent of the final environmental assessment to improve congestion through and within Kapaa and Wailua.

Potential Project Solutions:

The potential solutions will consider the proposed capacity improvements listed in the final environmental assessment.

Kuhio Highway Widening Traffic Assessment Report, State of Hawaii Department of Transportation, 2009

Purpose and Content

The purpose of the *Kuhio Highway Widening Traffic Assessment Report* is to summarize and present traffic conditions associated with the proposed widening of Kuhio Highway (to include a second southbound travel lane) between Kuamoo Road and the southern terminus of the Kapaa Bypass. The report contains intersection operations results for the existing condition (single southbound lane) in 2012 and the future anticipated conditions in 2032 with the proposed widening. Based on the operating conditions, recommendations for infrastructure improvements to alleviate congestion are also provided.

Findings Related to the Project

Adding a second southbound lane on Kuhio Highway from the southern terminus of the Kapaa Bypass to Kuamoo Road would provide additional capacity and result in improved operating conditions. Additional recommended improvements include the following:

- Installing a traffic signal at the intersection of Kuhio Highway and Lanikai Street. Left turns into and out of the southern end of Papaloa Road are currently restricted, so traffic destined for Papaloa Road typically must re-route via Lanikai Street. A traffic signal would improve safety for turning vehicles and reduce traffic delay and queues.
- Optimizing and coordinating signal timing and phasing at the intersections of Kuamoo Road, Haleilio Road, and the new traffic signal at Lanikai Street. Optimizing traffic signals to accommodate the second southbound lane would improve traffic flow on Kuhio Highway.

Potential Use in Developing

Project Goals and Objectives:

The Project goals and objectives will be aligned with the intent of traffic assessment, to reduce congestion and provide capacity on Kuhio Highway approaching the Wailua River Bridge.

Potential Project Solutions:

The potential Project solutions will include the highway widening improvement based on the expected traffic operating conditions presented in the traffic assessment report. Traffic analysis using current year volumes and conditions will be conducted to assess whether the highway widening is necessary, appropriate, and anticipated to result in improved conditions.

Traffic Analysis Report for Kapaa Relief Route TSM Alternatives, State of Hawaii Department of Transportation, 2008

Purpose and Content

This traffic report summarizes the analysis of two TSM alternatives that were considered as part of the Kapaa Relief Route draft EIS. The first proposed improvement is adding a northbound lane to the Kapaa Bypass north of Olohena Road to Kuhio Highway. The existing intersection on Kuhio Highway with the Kapaa Bypass would be upgraded to facilitate traffic in all directions. Hauaala Road would be terminated with a cul-de-sac before Kuhio Highway, and a new access road from Hauaala Road would connect to the two-way Kapaa Bypass near Moikeha Canal.

The second proposed alternative is improving Eggerking Road and Pouli Road, and extending both roads so they meet at the Kapaa Bypass.

Findings Related to the Project

The proposed improvement to Kapaa Bypass would allow two-way traffic for the entire length of the Kapaa Bypass. By providing additional capacity and a complete connection for northbound traffic wishing to bypass Kapaa town, highway conditions would be expected to improve. Traffic anticipated to use the two-way bypass would increase turning movements at the Kuhio Highway

(northern terminus) intersection and a traffic signal would be warranted to maintain acceptable operations.

The Eggerking Road and Pouli Road extensions would create a new, four-leg intersection on the bypass road, and would provide local access from the Wailua Houselots to retail/shopping without having to use Kuhio Highway. The new intersection would require stop control on Eggerking Road and Pouli Road, while traffic on Kapaa Bypass would be free flowing. This new intersection would operate with adequate capacity through the year 2018.

Potential Use in Developing

Project Goals and Objectives:

The goals of the Project will consider the intent of the traffic analysis report to reduce congestion and provide capacity through and within Kapaa and Wailua.

Potential Project Solutions:

The potential Project solutions will include the two specific alternatives analyzed in the traffic analysis report. The analysis results presented in the traffic analysis report will also be considered but traffic analysis using current traffic volumes will be conducted to verify and confirm conditions.

Kuhio Highway Traffic Operations Review, Wailua to Kapaa, Kimley-Horn and Associates, 2005

Purpose and Content

This review discusses projects that were being studied/considered (in 2005) through Wailua and Kapaa along Kuhio Highway, summarizes traffic observations along the highway (at the time), and provides short-term recommendations to improve traffic operations and the pedestrian environment along Kuhio Highway.

Observations of traffic conditions reveal that Kuhio Highway does not have adequate capacity during the morning or afternoon peak hour. At most of the signalized locations on the highway, excessive queueing and long delays occurred. Capacity constraints were observed at the bridge crossings through the towns.

Findings Related to the Project

Recommended short-term improvements and traffic management strategies include the following:

Kuhio Highway Traffic Operations Review, Wailua to Kapaa, Findings

Potential Improvement
Add northbound lane to Kapaa Bypass north of Olohena Road. Terminate Hauaala Road at Kuhio Highway with cul-de-sac. Create new connection from Hauaala Road to Kapaa Bypass north of stream.
Widen the Temporary Bypass Road north of the roundabout to Kuhio Highway. Add one lane in the northbound direction, include pedestrian and bicycle facilities. Install traffic signal at Kuhio Highway and Kapaa Bypass (north intersection).
Close east leg of Kukui Street and convert Kukui Street between Kuhio Highway and Inia Street to business parking. Reallocate traffic signal green time to Kuhio Highway movements. Relocate stop bar on

Kuhio Highway Traffic Operations Review, Wailua to Kapaa, Findings

Potential Improvement
southbound Kuhio Highway to closer to Huluili Street. Route traffic from closed Kukui Street to north (Niu Street) or south (Kauwila Street).
Add one southbound lane along Kuhio Highway between Kapaa Bypass and Kuamoo Road with improvements at major intersections.
Install curb/raised median from Haleilio Road north past commercial driveways (approximately 400'). Redirect left-turning traffic from commercial lots to traffic signal at Haleilio Road or Lanikai Street.
Realign the south terminus of the Kapaa Bypass to Aleka Loop. Create 4-leg, signalized intersection. Extend southbound left-turn storage lane to Papaloa Road (receiving lane from Aleka Loop would no longer be necessary with traffic signal).
Provide double left-turn movements from Haleilio Road to northbound Kuhio Highway during non-contraflow operations. This reduces green time necessary for Haleilio Road movement and increases green time given to Kuhio Highway operations.
Improve Pouli Road and extend mauka from shopping center to the Kapaa Bypass. Pouli Road approach to be stop-controlled.
Provide vehicular and pedestrian access between Waipouli Town Center Plaza and Kauai Village Shopping Center so that customers can visit both centers without using Kuhio Highway.

Potential Use in Developing**Project Goals and Objectives:**

The Project's goals and objectives will consider the findings related to traffic congestion and capacity constraints described in the Kuhio Highway Traffic Operations Review.

Potential Project Solutions:

The potential solutions developed for the Project will consider the recommended improvements described in the Kuhio Highway Traffic Operations Review. Traffic analyses will be conducted to confirm current conditions and estimate future anticipated traffic operations in relation to the Kuhio Highway Traffic Operations Review-recommended improvements.

Kapaa Traffic Circulation Study, State of Hawaii Department of Transportation, 2002**Purpose and Content**

The Kapaa Traffic Circulation Study includes traffic analysis results for intersections along Kuhio Highway between the Wailua River and Kapaa Stream. The study analyzed typical weekday morning and evening peak hour traffic conditions, as well peak Saturday operations, for the year 2001.

Projected traffic conditions are included in the study for the year 2010. Projected volumes are based on average annual growth rates (calculated from 1999 Kauai General Plan Update forecasts) applied to existing (2001) conditions. Based on the forecasted 2010 traffic conditions, the study provides recommendations for capacity improvements to improve operations.

Findings Related to the Project

Similar to other plans and policies conducted in the study area, short-term improvements and traffic management strategies recommended in the Kapaa Traffic Circulation Study include highway widening, new connector roadways, and access management treatments.

Kapaa Traffic Circulation Study, Findings

Potential Improvement
Kuhio Highway at Mailihuna Road – Install northbound left-turn pocket on Kuhio Highway. Traffic volumes warrant installation of a traffic signal.
Kuhio Highway at Kapaa Bypass (north terminus) – Install additional directional signage for motorists alerting them to the bypass route. Provide clearer understanding for choosing an appropriate route through Kapaa town.
Kuhio Highway at Kuamoo Road – Provide shared left/right and right-only turn movements from Kuamoo Road approach during contraflow operations on Kuhio Highway to improve queue/delay on Kuamoo Road.
Pouli Road Connector – Improve Pouli Road and extend mauka from shopping center to the Kapaa Bypass. Pouli Road approach to be stop-controlled.
Ulu Street Extension – Extend Ulu Street to the north and connect to Lehua Street.
Kuhio Highway Widening – Widen Kuhio Highway between Wailua River and Kawaihau Road.
Kapaa Town Couplet – Provide a couplet through Kapaa town via Lehua Street/Ulu Street.
Kapaa Relief Route – Construct a permanent bypass road.

Potential Use in Developing

Project Goals and Objectives:

The Project's goals and objectives will consider the findings related to traffic congestion and capacity constraints described in the Kapaa Traffic Circulation Study.

Potential Project Solutions:

The potential solutions developed for the Project will consider the recommended improvements described in the Kapaa Traffic Circulation Study. Traffic analyses will be performed using current and projected volumes to ensure that the Project solutions are necessary and appropriate.

Capital Budget, County of Kauai, Fiscal Year July 1, 2010 to June 30, 2011

Purpose and Content

The capital budget provides a listing of projects and services for the County of Kauai for fiscal year 2015. It includes estimated costs and identified sources of funds.

Findings Related to the Project

Review of the capital budget and programs will be important to understand planned improvements for roadway, bicycle, pedestrian, transit, and parks and recreation facilities in the Kawaihau district.

Potential Use in Developing

Project Goals and Objectives:

The Project's goals and objectives may be somewhat aligned with the budget allocations shown in the capital budget.

Potential Project Solutions:

The potential solutions developed for the Project may consider the capital budget allocations but will be based primarily on the ability to meet the Project goals and objectives.

Hawaii State Historic Bridge Inventory and Evaluation, State of Hawaii Department of Transportation, Highways Division, 2013

Purpose and Content

The purpose of this study is to identify which of the 708 bridges built before 1968 in the State of Hawaii are eligible for listing on the Hawaii State Register of Historic Places (HSRHP) or National Register of Historic Places (NRHP). It should be noted that this bridge inventory does not identify any archaeological or cultural issues and does not propose treatment for each bridge.

The goal for the HDOT will be to use this inventory to develop a Programmatic Agreement with the State Historic Preservation Division (SHPD), the Advisory Council on Historic Preservation (ACHP), and the Federal Highways Administration to aid in future consultation with respect to facilitating and/or stream-lining the approval process for various construction projects.

A number of bridges were excluded from evaluation in this report for one or more of the following reasons:

- The structure did not meet the standard definition of a bridge.
- The bridge's date of construction occurred less than 45 years ago (i.e., later than 1968).
- It is privately owned with no access and is thus unavailable for evaluation.
- It is located along Hawaii Interstate Freeway H-1 and is excluded because of the ACHP adoption of the Section 106 Exemption Regarding Effects to the Interstate Highway System. It should be noted that bridges or tunnels crossing the H-1 that were constructed before 1968 were included in the inventory.

Findings Related to the Project

Within the Project's study area, the following bridges are eligible for listing on the HSRHP or NRHP:

Bridge Name	Feature Crossed	Feature Carried	Construction Date	Bridge Type	Parapet/Railing Type	Listed on National / Hawaii Register	Eligibility Status
Kapaa Temporary Bypass Road - Kainahola Stream	Kainahola Stream	Temporary Kapaa Temporary By-pass Road	1937	Concrete Slab	Metal Thrie Beam	No	Eligible
Opaekaa Stream Bridge	Opaekaa Stream	Kuamoo Road	1936	Concrete Tee Beam	Concrete Open Arched	No	High Preservation Value
Railroad Overpass	Maalo Road	Plantation Road	1946	Steel Stringer	Metal Chain Link	No	High Preservation Value
Wailua River Bridge	Wailua River	Kuhio Highway	1945	Concrete Tee Beam	Concrete and Metal	No	High Preservation
Kainahola Bridge	Kainahola Stream	Kainahola Road	1950	Steel Stringer	No Parapet/Railing	No	Eligible
Kapahi Bridge	Kapaa Stream	Kawaihau Road	1937	Steel Stringer	Wood	No	Eligible
Opaekaa Bridge	Opaekaa Stream	Opaekaa Road	1900	Steel Truss	No Parapet/Railing	Yes	High Preservation Value
Puuopae Bridge	Kalama Stream	Puuopae Road	1915	Steel Stringer	Metal Thrie Beam	Yes	High Preservation Value

Potential Use in Developing

Project Goals and Objectives:

The Project's goals and objectives will consider the preservation of the rural and historic character of East Kauai.

Potential Project Solutions:

The potential solutions developed for the Project will consider the historic and preservation values of those bridges if identified as a potential solution.

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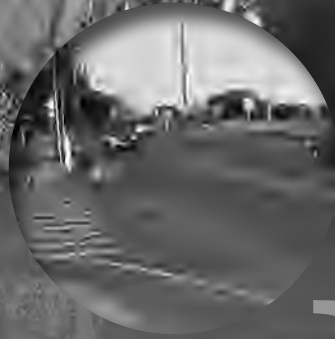
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State of Hawaii Department of Transportation (HDOT). 2013a. *Statewide Pedestrian Master Plan*.

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State of Hawaii Department of Transportation (HDOT). 2014. Federal-Aid Highways 2035 Transportation Plan for the District of Kauai. June.

Appendix B



Terminate Hauaala Road at Kuhio Highway**Background and Needs**

Kuhio Highway intersects with Kawaihau Road, Hauaala Road, and the north terminus of the Temporary Kapaa Bypass Road within a 250-foot stretch. Kawaihau Road and Hauaala Road have full access with Kuhio Highway, while the Temporary Kapaa Bypass Road is a one-way southbound bypass road. The intersections at Kawaihau Road and Hauaala Road operate at LOS 'F' during peak hours. Vehicles coming from Kawaihau Road and Hauaala Road have a difficult time turning onto Kuhio Highway. Northbound left-turns from Kuhio Highway to these roads often exceed the turn lane storage length and queue back onto the highway, affecting overall corridor operations.

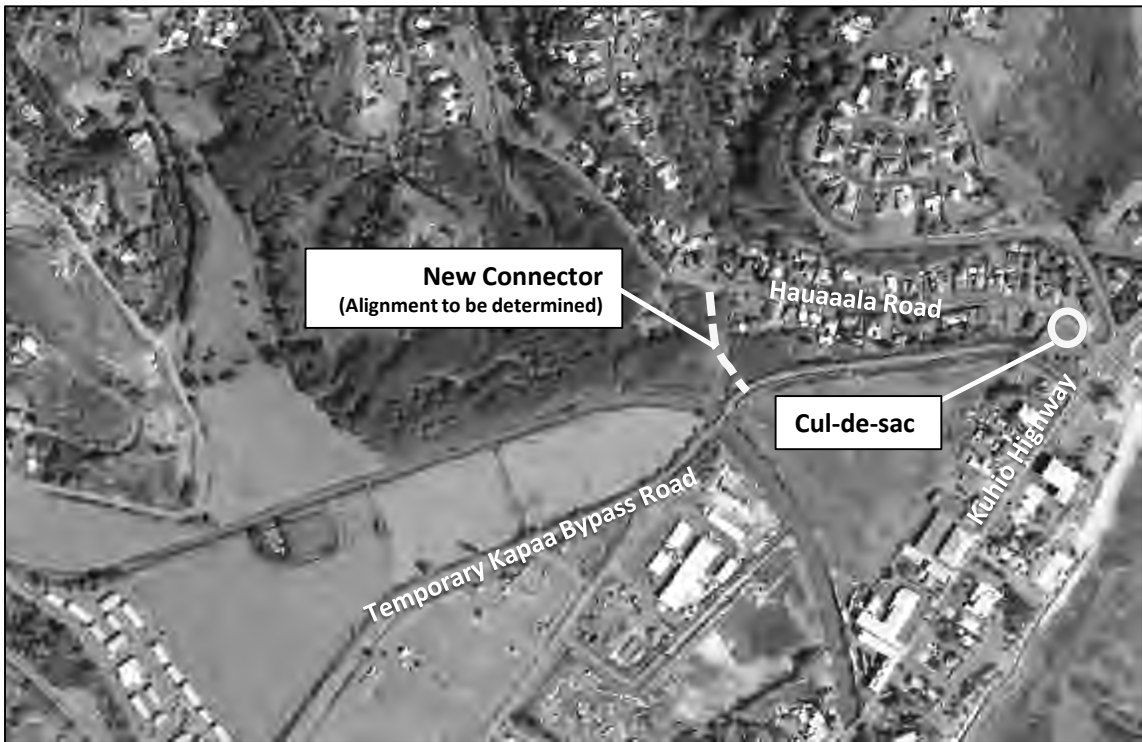
Also identified in the *Statewide Pedestrian Master Plan* (HDOT, 2013), this is an area of concern for pedestrians. Pedestrians from the residential neighborhoods in the area cross Kuhio Highway to access the multi-use path on the makai side of the highway. There are no marked crosswalks across Kuhio Highway. Adding to the challenge is the closely spaced intersecting roads. The combination of these factors creates challenging conditions for pedestrians intending to cross Kuhio Highway.

Another priority project, Project #6 proposes to widen the Temporary Kapaa Bypass Road, north of Oloheua Road, to provide a northbound lane and pedestrian and bicycle facilities.

Potential Solution

This area would benefit from a reduction in the number of access points to Kuhio Highway. One approach would be to convert Hauaala Road into a cul-de-sac and construct a new collector road to connect to the Temporary Kapaa Bypass Road, after the Temporary Kapaa Bypass Road has been widened to accommodate two-way traffic. This potential solution would reduce overlapping turn movements and provide more queue storage for northbound left-turn traffic from the highway to Kawaihau Road so that waiting vehicles do not block the mainline of Kuhio Highway. This potential solution could also divert trips from Kuhio Highway to the new two-way Temporary Kapaa Bypass Road and directly back to the neighborhoods without having to access Kuhio Highway.

Pedestrian safety can be enhanced by installing a marked crosswalk and/or other pedestrian related features.



Cost Estimate

\$3,924,000

Readiness for Implementation

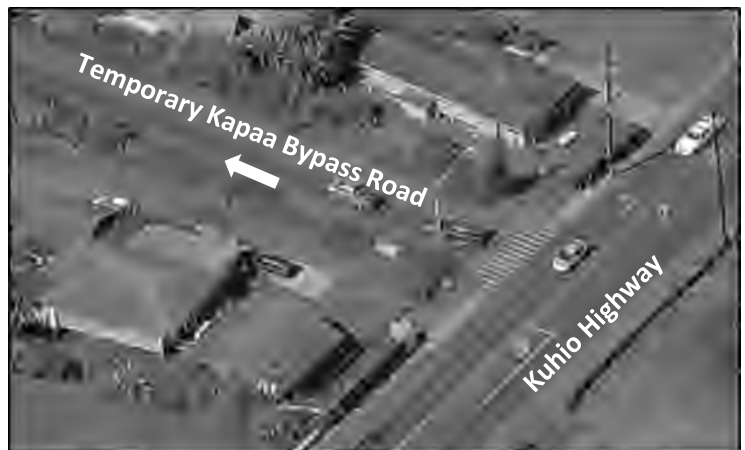
The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis into project delivery. This project performed well when compared to other projects. Safety and congestion relief are the primary benefits. This project assumes that the widening of the Temporary Kapaa Bypass Road (Project #6) has been completed. It has strong support from the community. There are no wetlands, waterways, or known historic or archaeological sites in the project area. In 2020 during the PM peak hour, delay for vehicles from Hauaala Road heading south would improve by more than 5 minutes via the Temporary Kapaa Bypass Road as they no longer have to wait to turn onto Kuhio Highway. Other future traffic results are not as significant. There would be some right-of-way and environmental impacts due to the construction of the connector road.

Temporary Kapaa Bypass Road, north of Olohena Road



Background and Needs

In December 2006, the State of Hawaii Department of Transportation completed a one-lane extension of the Temporary Kapaa Bypass Road, from Olohena Road to Kuhio Highway. The extension allows vehicles heading south to bypass Kuhio Highway through Kapaa downtown. Despite this, the vehicle demand continues to exceed the capacity of Kuhio Highway and the corridor remains congested during peak traffic hours. Due to the density of adjacent roadside developments and other issues, widening of Kuhio Highway is not expected to be feasible.



Kuhio Highway and north terminus of the Temporary Kapaa Bypass Road intersection

Potential Solution

Additional capacity could be provided by widening the Temporary Kapaa Bypass Road north of Olohena Road and providing a northbound lane to this segment. This will allow vehicular traffic to travel in both directions to bypass Kapaa downtown during peak traffic hours and help ease congestion along Kuhio Highway. Widening of the Temporary Kapaa Bypass Road will require improvements at the north terminus intersection with Kuhio Highway. Improvements to accommodate pedestrians and bicyclists should also be considered. The project is anticipated to improve capacity and relieve congestion.

A separate project, Project #3, can be included to address some of the issues that may rise related to a series of closely spaced intersection by the northern terminus.



Cost Estimate

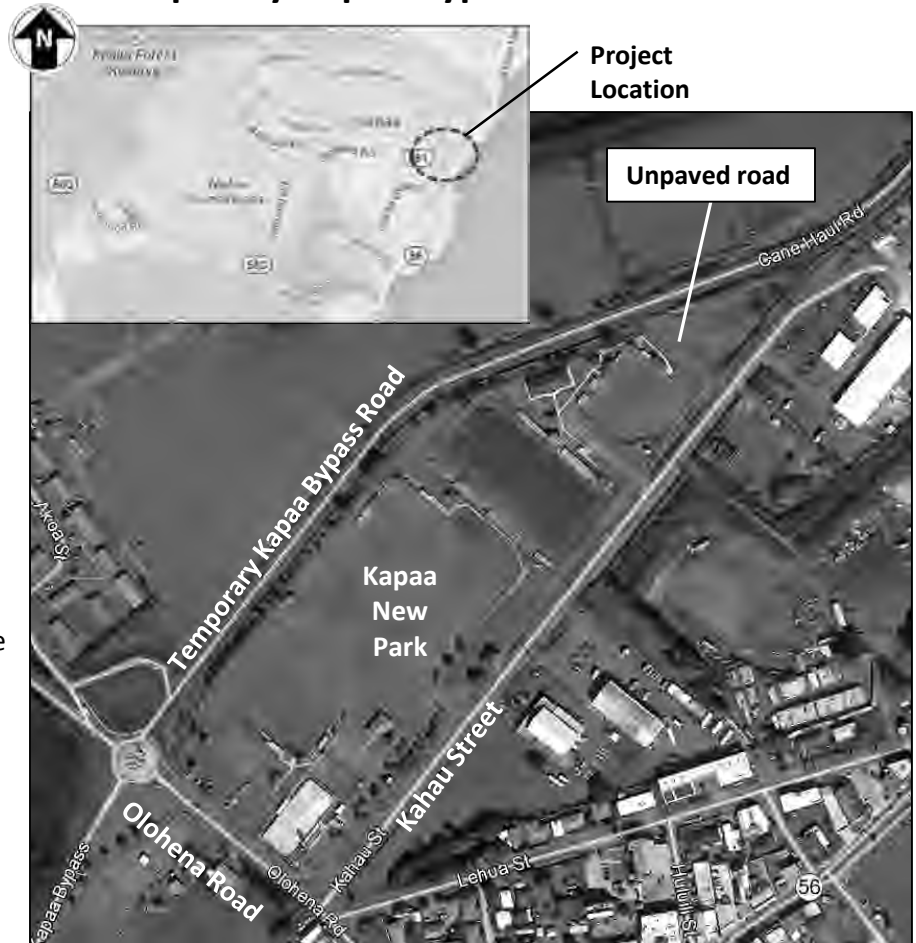
\$22,560,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis into project delivery. This project performed well when evaluated and compared to other projects trying to achieve the purpose of the study. This project is one of the community's top priorities. There are no known historic or archaeological sites within the project area. The route crosses the Mo'ikeha Canal, but there are no other waterways or wetlands in the project area. Although the project by itself is not anticipated to significantly improve travel time on Kuhio Highway in year 2020 (due to wait time at the intersection with the Temporary Kapaa Bypass Road and Kuhio Highway), it is expected to shift both northbound and southbound vehicles to the Temporary Kapaa Bypass Road. This project combined with other priority projects (e.g. Project #3 – Terminate Hauaala Road at Kuhio Highway) will have a cumulative improvement in travel delay. Roadway widening may require right-of-way acquisition.

Background and Needs

Currently, park users access the park via Olohena Road and Kahau Street. On special occasions such as graduations, the unpaved dirt road near the recycling plant is opened and allows people to exit onto Temporary Kapaa Bypass Road so that Kahau Road does not back up.



Kapaa New Park Concept Site Plan (*Kauai Parks & Recreation Master Plan, 2013*)

Potential Solution

This area would benefit from a permanent direct access from Kapaa New Park to the Temporary Kapaa Bypass Road (after it has been widened to accommodate two-way traffic – Project #6). Providing an alternative new access would relieve congestion on Kahau Road. People coming from the north could also access the park via the Temporary Kapaa Bypass Road without going onto Kuhio Highway through downtown Kapaa.

The new direct access could be created along the existing unpaved road. Consultation and coordination with County of Kauai, Department of Parks and Recreation is needed. Bicycle and pedestrian access between the park and the proposed soccer fields should also be considered.



Cost Estimate

\$4,102,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis or documentation (if needed) into project delivery. This project performed well when compared to other projects evaluated for meeting the purpose of the study. The project is expected to improve congestion relief and access. The community generally supports this project. There are no wetlands, waterways, or known historic or archaeological sites in the project area. Little to no right-of-way is required because of the existing unpaved road. The project would help to carry the additional vehicular, pedestrian and bicycle trips to/from the park.

Intersection Improvements in Downtown/Historic Kapaa Town



Background and Needs

The intersection of Kuhio Highway at Kukui Street and Hululi Street is a signalized intersection with five approaches. It experiences heavy congestion and long queues along Kuhio Highway during the morning and afternoon peak hours. Due to the geometry of the intersection, the distance between the northbound and southbound stop bars on Kuhio Highway is approximately 120 feet. In addition, the crosswalk on the north approach of Kuhio Highway is skewed to align with Kukui Street. This skew increases the pedestrian crossing distance. The width of the intersection and the skew of the crosswalk require longer clearance intervals and decrease the available green time for northbound and



Close up of the intersection

southbound movements. However, because the signal's cycle length is long, pedestrians need to wait for a long time for the pedestrian signal and many of them get impatient and jaywalk.

The intersection of Kuhio Highway and Lehua Street is two-way stop-controlled and vehicles coming from Lehua Street experience long delays while waiting to turn onto Kuhio Highway. The majority of the vehicles want to turn left onto Kuhio Highway northbound.

Potential Solution

The current geometry of the Kuhio Highway and Kukui Street intersection limits efficient signal operations. Operations on Kuhio Highway could be improved by reconfiguring the intersection. The *Kuhio Highway Traffic Operation Review* study done by Kimley-Horn in December 2005 recommended that the east leg of Kukui Street could be closed and potentially converted to additional parking for surrounding businesses. In this case, the crosswalk on the north leg of Kuhio Highway would be relocated and the stop bar would be relocated south to the curb return of Huliuli Street/Kukui Street. These modifications would essentially create a signalized “T” intersection that could allocate the majority of the signal green time to the northbound and southbound through movements while improving safety. The east leg of Kukui Street is currently closed on the first Saturday of the month for the Kapaa Art Walk event.

The area could also benefit from improvements at the Niu Street and Kuhio Street intersection. Improving the southbound Niu Street approach could attract vehicles and relieve congestion at Lehua Street by providing motorists another option to access Kuhio Highway.



Cost Estimate

\$642,000

Currently, the east leg of the intersection (Kukui Street) operates with right-in/right-out only movements.

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis (if needed; these two projects are likely to have little impacts) into project delivery. These two projects performed well when evaluated and compared to other projects trying to achieve the purpose of the study. Main benefits include economic vitality, congestion relief, and safety.

The projects are supported by surrounding businesses because of its potential to improve safety and the increase in available parking. There are no waterways, wetlands, or known historic or archaeological sites in the project area. The project requires no additional right-of-way, and has limited environmental impacts.

Although the projects are not anticipated to significantly improve north/south travel time on Kuhio Highway in year 2020, it will reduce local street vehicle queues. It will also improve sight-distance for a complicated intersection, which is expected to enhance vehicle, pedestrian, and bicycle safety.

Kuhio Highway – Traffic Signal Optimization



Background and Needs

The intersection of Kuhio Highway at Kukui Street and Huluili Street is a signalized intersection with five approaches. The signal system is a three-phase pre-timed system with a cycle length of 240 seconds. The intersection accommodates high through-traffic volumes, and northbound and southbound queues often affect overall corridor operations by causing delays and restricting upstream vehicle movements.

The intersections of Kuhio Highway at Haleililo Road and Kuamoo Road are approximately 1,700 feet apart. Both intersections are signalized 'T' intersections. The signal system at Haleililo Road is a pre-timed signal system with three phases, while the signal system at Kuamoo Road is a three-phase semi pre-timed system. Both signal systems have cycle lengths of 240 seconds. These two intersections experience long delays and operate at LOS E or F during the morning and afternoon peak hours. Queues at Haleililo Road exceed the available storage length on all approaches. At both intersections, makai-bound left-turning vehicles approaching Kuhio Highway experience long delays as they wait to turn onto the highway.

Potential Solution

Existing signal cycle lengths and timings should be reviewed against current traffic volumes and existing phases should be optimized to improve operations and reduce queue lengths along Kuhio Highway. Additional intersection channelization improvements, such as reconfiguration of lane approaches or modification of turn lanes (see Project #33 for example of shared left- and right-turns from Kuamoo Road during the peak morning commute), may be needed to further enhance intersection operations.



Example of phase movements at signalized intersections, along with associated green, yellow, and red times.

Cost Estimate

\$1,124,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used in this study should set the stage for implementation of these projects. It is not expected that environmental analysis will be required, due to no known environmental, land use, or societal impacts.

These projects performed well when evaluated and compared to other projects trying to achieve the purpose of the study. The cumulative benefits mostly include congestion relief.

These projects may not be enough to significantly reduce congestion on Kuhio Highway, since mid-block crosswalks, parallel parking maneuvers, driveways and turn movements also affect traffic flow. The project could be combined with other intersection improvement projects (e.g. Projects #16 and #20 – Intersection Improvements in Downtown/Historic Kapaa Town) to show more congestion relief benefit.

There are no waterways, wetlands, or known historic or archaeological sites in the project area. The projects require no additional right-of-way, and have no known environmental impacts.

Group B: Project #23

Pouli Road Extension

August 17, 2015



Project
Location



Background and Needs

The Waipouli Town Center and the Kauai Village Shopping Center are the primary commercial and shopping centers in East Kauai. The two centers are located on either side of the Uhelekawawa Canal and are connected by a pedestrian bridge. The two shopping centers generate a high volume of traffic throughout the day, with many vehicles coming from nearby homes or visitor accommodations. Currently, the Waipouli Town Center can be accessed via Pouli Road and Kuhio Highway, while the Kauai Village Shopping Center can only be accessed from Kuhio Highway. Pouli Road is a dead end road that leads to a private access. Vehicles headed to and from these shopping centers must use Kuhio Highway for a portion of their local trips, which can have a noticeable effect on regional highway operations.

Potential Solution

Improving and extending Pouli Road to connect with the Temporary Kapaa Bypass Road would create a direct access to the Waipouli Town Center from north of Kapaa Town and the mauka communities. The connection would provide an alternate route for the highway and would help reduce traffic volumes on Kuhio Highway between downtown Kapaa and the Waipouli Area. The alignment of the extension could potentially follow the existing cane haul road. If feasible, it could connect with the potential Eggerking Road extension (Project #24) to create a four-leg intersection with the Temporary Kapaa Bypass Road.



Cost Estimate

\$24,406,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis into project delivery. This project performed well when compared to other projects. Main benefits include capacity and congestion relief by providing an alternate route to Kuhio Highway. The community believes the project has benefits. There are no known historic or archaeological sites in the project area. The project would cross the Waipouli Canal, and would require analysis for impact to excavated wetlands mauka of the canal. In year 2020, the project would improve travel time between the Temporary Kapaa Bypass Road and Waipouli Town Center because vehicles could avoid the southbound left turn from the Temporary Kapaa Bypass Road to northbound Kuhio Highway. There would be right-of-way and environmental impacts due to the construction of the extension, including potential impacts to a house and undeveloped land.



Background and Needs

There is no other access for the Wailua Home Lots community south of the intersection of Kuhio Highway and the Temporary Kapaa Bypass Road, except via Haleilio Road from Kuhio Highway. An alternate access route from this community to the highway is needed for emergency access and evacuation. In addition, an alternate access route would help to improve traffic circulation by diverting a portion of trips from Kuhio Highway and Haleilio Road to the new connection. For instance, residents that currently make local trips to the nearby Waipouli Town Center and the Kauai Village Shopping Center, which are the primary commercial and shopping centers in East Kauai, via the Kuhio Highway/Haleilio Road intersection would have the option of using an alternate route.

Potential Solution

Improving and extending Eggerking Road to connect with the Temporary Kapaa Bypass Road would create an alternate access for the community. The connection would help to reduce traffic volumes on Kuhio Highway between Wailua and the Waipouli Area. The alignment of the extension is still to be determined but it could potentially follow the existing cane haul road. If feasible, it could connect with the potential Pouli Road extension (Project #23) to create a four-leg intersection with the Temporary Kapaa Bypass Road. This connection would provide the community a direct access to the Waipouli Town Center without accessing Kuhio Highway.



Cost Estimate

\$6,453,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis into project delivery. This project performed well when compared to other projects. Main benefits include capacity, congestion relief, and emergency access. The community believes the project has significant local benefit. There are no wetlands, waterways, or known historic or archaeological sites in the project area. In year 2020, the project is expected to improve local travel time between the Temporary Kapaa Bypass Road and Wailua homesteads, because vehicles from Wailua can avoid the Halei intersection to head north on the temporary bypass. There would be right-of-way and environmental impacts due to the construction of the extension in undeveloped land.

Kuhio Highway Widening between Temporary Kapaa Bypass Road and Kuamoo Road



Project
Location



South
terminus of
Temporary
Kapaa Bypass
Road



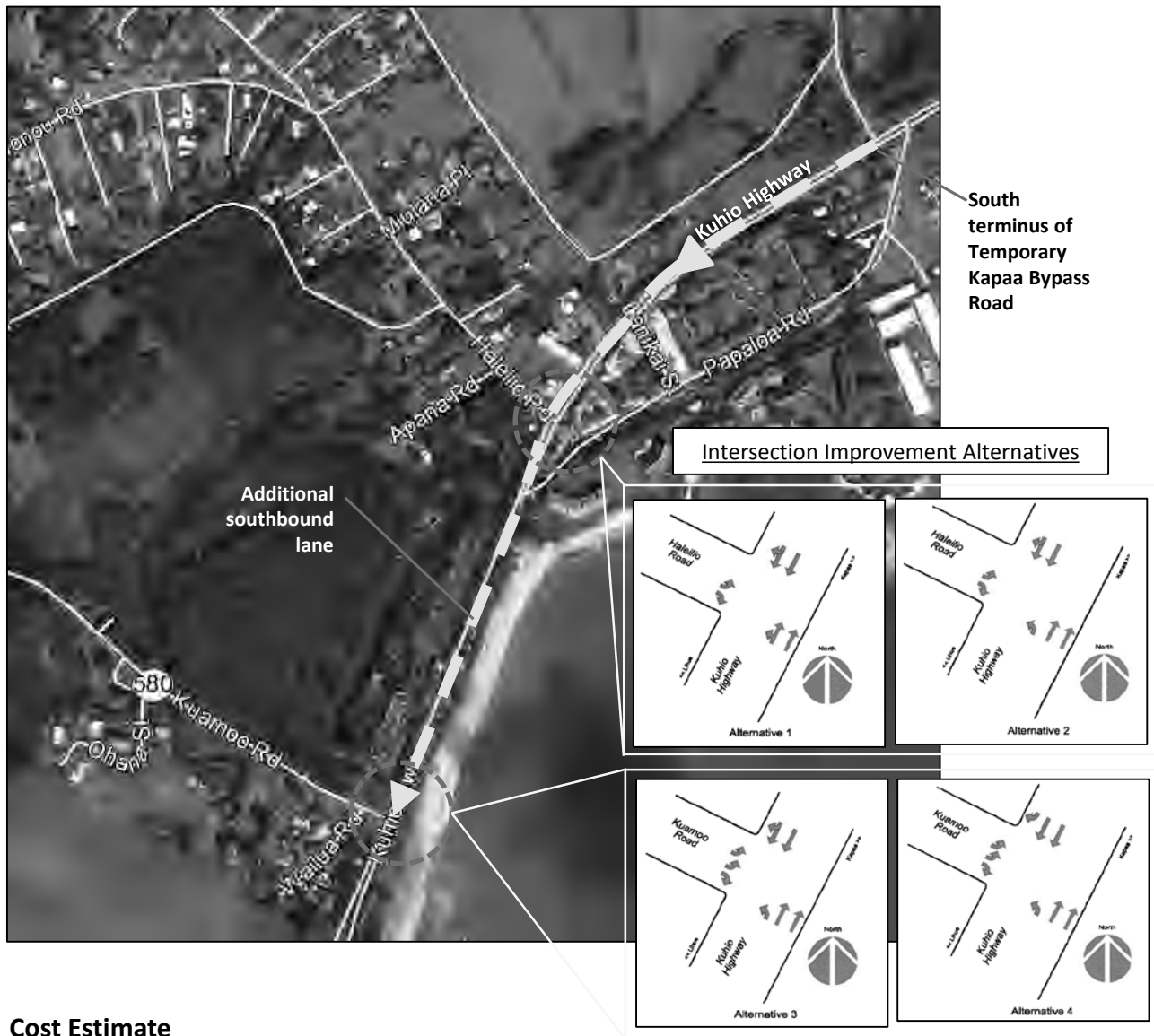
*The current contraflow lane starts just south of the
Temporary Kapaa Bypass Road south terminus.*

Background and Needs

Traffic along Kuhio Highway is heavily congested through Kapaa and Wailua. Within the study area, Kuhio Highway is a three-lane, two-way highway with two northbound lanes and one southbound lane. A contraflow lane is currently used to facilitate morning peak hour traffic headed toward Lihue. Beginning at the south terminus of the Temporary Kapaa Bypass Road, one of the two northbound lanes is separated by traffic cones and converted to carry southbound traffic. The contraflow lane adds capacity to the southbound direction, but reduces capacity in the northbound direction. Tourists and some drivers may not be familiar with the contraflow operation and navigating intersections with turn lanes. The contraflow operation requires daily manual set-up and break-down and it costs over \$1 million a year.

Potential Solution

The potential solution is to provide an additional southbound lane along Kuhio Highway between the south terminus of the Temporary Kapaa Bypass Road and Kuamoo Road. Improvements will be needed at the intersections with Haleililo Road and Kuamoo Road.



Cost Estimate

\$30,000,000 (already obligated)

Readiness for Implementation

It's been identified that the proposed improvements are part of the ongoing Kuhio Highway Short-term Improvements project. The Kuhio Highway Short-term Improvement project has already been funded and is currently in design. The project will improve capacity by adding one southbound lane to the highway, and will improve intersection operations at Haleilio Road and Kuamoo Road. The project is a high priority for the community. The project is anticipated to have regional traffic and queuing benefits – the southbound travel time on Kuhio Highway between the Temporary Kapaa Bypass Road and Kuamoo Road would improve by two minutes.

Kuhio Highway at Kuamoo Road

**Project
Location**



**Existing
Traffic Signal**

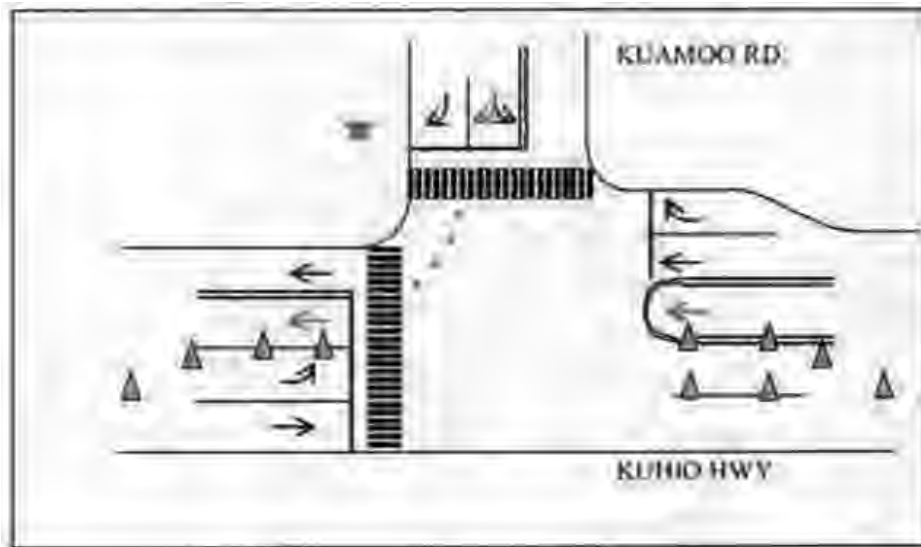
Background and Needs

The T-intersection of Kuhio Highway and Kuamoo Road is over its capacity and motorists experience long delays and queues during peak traffic hours. The intersection operates at LOS 'F' during AM peak hours and at LOS 'E' during PM peak hours. The northbound Kuhio Highway approach consists of two through lanes and a left-turn pocket. The southbound approach consists of a single through lane and a right-turn pocket. The eastbound Kuamoo Road approach consists of a right-turn pocket and a left-turn lane. During the morning contraflow operations, one of the northbound Kuhio Highway through lanes is utilized for southbound traffic to accommodate commuters heading toward Lihue.

Kuamoo Road is the primary access route for Wailua Homesteads, one of the most densely populated census blocks in East Kauai. Heavy turning movement volumes associated with commuter traffic are a factor creating delays at the intersection. During the AM peak hour, right-turn volume onto southbound Kuhio Highway is high while makai-bound left-turning vehicles also experience long delays as they wait to turn onto Kuhio Highway northbound.

Potential Solution

The intersection operation can be improved by providing shared left/right and right-only turn movements from the Kuamoo Road approach during contraflow operations. Allowing right-turn vehicles to utilize two lanes would increase the movement capacity through the intersection. Implementation of the lane use change can be achieved by installation of proper signage to instruct motorists to utilize two lanes to turn right during the morning peak hours when the contraflow lane is in effect. Other options could be extending the existing right-turn storage or constructing a new separate right-turn lane.



Cost Estimate

\$613,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used in this study will help to ease the transition of this project through environmental analysis into project delivery. This project performed well when evaluated and compared to other projects in trying to achieve the purpose of the study. The primary benefit is congestion relief. With this project, AM peak hour local traffic from Kuamoo will have shorter delays and reduced queues (from over 1,100' to 750'). PM local traffic from Kuamoo will also have shorter delays. Traffic operations on Kuhio Highway are not expected to be adversely impacted by this project.

It's been identified that this improvements could be part of the ongoing Kuhio Highway Short-term Improvements project.

Kuhio Highway between Kuamoo Road and Kapule Highway



Background and Needs

Traffic along Kuhio Highway is heavily congested through Kapaa and Wailua. Within the study area, Kuhio Highway is a three-lane, two-way highway with two northbound lanes and one southbound lane. A contraflow lane is currently used to facilitate morning peak traffic headed toward Lihue. Beginning at the south terminus of the Temporary Kapaa Bypass Road, one of the two northbound lanes is separated by traffic cones and converted to carry southbound traffic. This southbound contraflow lane is continuous through Wailua and terminates at Kuamoo Road, where two permanent southbound lanes are provided over the Wailua River Bridge. The southbound contraflow lane begins again just south of the Wailua River Bridge, where southbound Kuhio Highway becomes one lane, and ends at the intersection of Kuhio Highway and Kapule Highway. The contraflow lane adds capacity to the southbound direction, but reduces capacity in the northbound direction. Tourists and some drivers may not be familiar with the contraflow operation and navigating intersections with turn lanes. The contraflow operation requires daily manual set-up and break-down and it costs over \$1 million a year.

Potential Solution

The potential solution is to provide an additional southbound lane along Kuhio Highway between south of Wailua River Bridge and Kapule Highway. The additional southbound lane could be provided by widening existing Kuhio Highway or using an existing cane haul road mauka of Kuhio Highway. The existing cane haul road is currently owned by the Department of Hawaiian Home Lands.

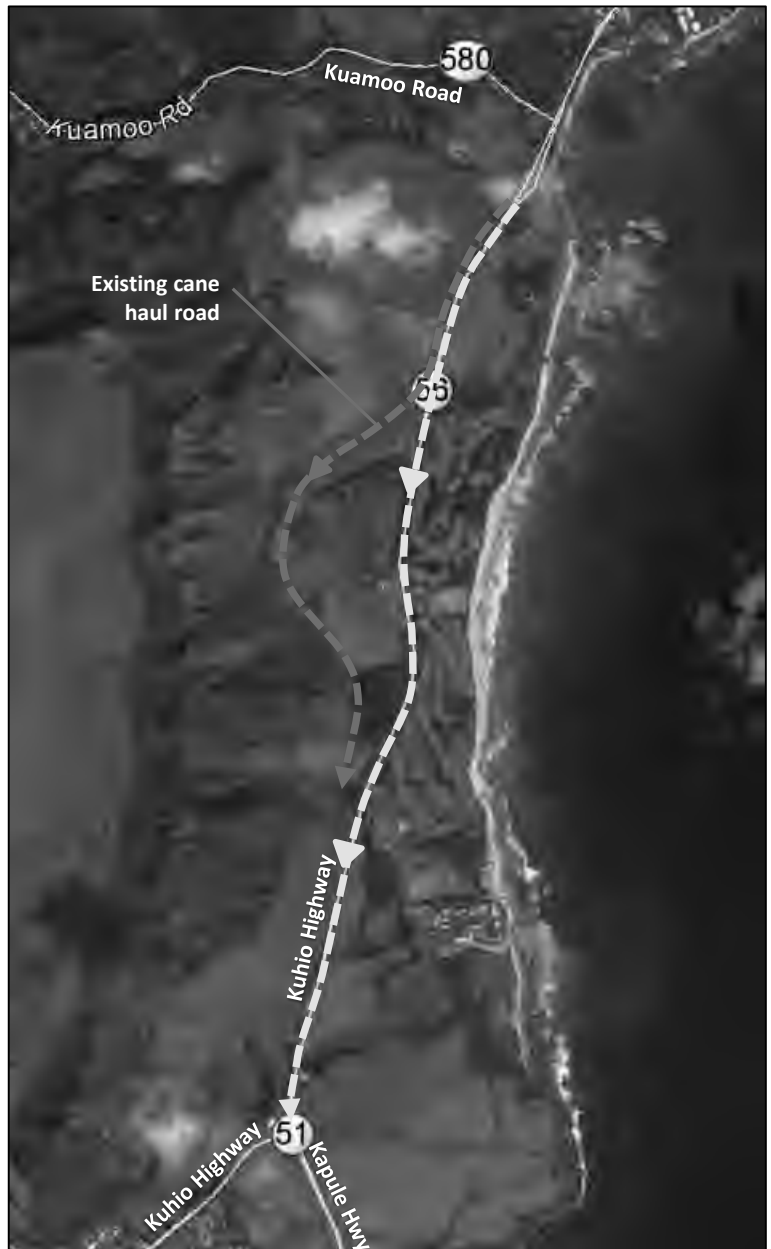
Cost Estimate

\$43,458,000

Readiness for Implementation

The Kapaa Transportation Solutions study used a range of environmental, community, and economic **goals, objectives, and evaluation criteria** to select and evaluate projects. This helps to ensure that the recommendations best meet the purpose and need for the study. The analysis and information used will help to ease the transition of this project through environmental analysis into project delivery. This project performed well when evaluated and compared to other projects trying to achieve the purpose of the study. Benefits include enhanced capacity and reduced congestion. The project would eliminate the need for contraflow lanes between Wailua and Lihue and would have significant regional benefit for traffic operations and travel time. The project area contains the Wailua River. Depending on the route (widening the existing Kuhio Highway or using the cane haul road) the route is adjacent to the Wailua Golf Course or the Kalepa Mountain Forest Reserve. The route passes over a stream close to the Kuhio Highway/Kapule Highway intersection.

The option of using the existing cane haul road could be a more feasible option than the other because it would not involve widening the highway between the ditch and the golf course, moving utilities, and overcoming the environmental clearances for moving the ditch.



Witness Statement of JoAnn Yukimura

February 10, 2021

Q. Please state your name and place of residence.

A. My name is JoAnn Yukimura. I am a resident of Kaua'i County.

Q. Please discuss your background and training relevant to development issues on Kauai.

A. I was born on Kaua'i and graduated from Kaua'i High School. I obtained a BA in Psychology from Stanford and a Juris Doctor degree from the University of Washington School of Law. I returned to Kaua'i and worked for Legal Aid Society for Hawai'i. I also worked with fellow citizens to preserve the 4-story height limit on Kaua'i and to stop unplanned and inappropriate resort development on the island. I was first elected to the Kaua'i County Council in 1976. I served as Mayor of Kaua'i from 1988 to 1994. I served on the County Council for a total of 22 years, before and after serving as mayor. I have also worked in the private sector as Vice President of Trenchless Engineering and was on the organizing board of Kaua'i Island Utility Corporation (KIUC), the first and only ratepayer-owned utility in Hawai'i. I have been involved in the development of 1761 affordable units on Kaua'i: from introducing a bill to fund the first self-help housing project on Kaua'i in 1988, to securing, and setting the strategic framework for the leveraging of, \$43 million in federal post-Iniki funds that produced some 500 affordable units, to negotiating the win-win public-private arrangement resulting in the building of 133 long-term affordable units in Po'ipu at Ko'ae in 2018.

Q. Will the proposed district boundary amendment (DBA) for the HoKua Place development in Kapa'a positively impact the provision of housing opportunities for all income groups, particularly the low, low-moderate, and gap groups?

A. No, unless the following are established:

1. HG Kauai Joint Venture, LLC (Petitioner) has sufficient resources to build the infrastructure needed for the envisioned community to function efficiently and safely without causing negative impacts to its residents, the environment, or to the community-at-large; and,
2. The HG Kauai Joint Venture, LLC can meet its investors' expectations for profit while sufficiently providing:
3. (a) its fair share of subsidized housing for households with income equal to or less than 120% AMI households assuming they will pay no more than 30% of household income for rent or mortgage; and
4. (b) gap group housing or market housing (140%-180% AMI) with enough safeguards against speculation and outside investors to ensure that those who live and work on Kaua'i will be

EXHIBIT "I-25"

able to purchase or rent said homes as their primary home and pay no more than 30% of their household income.

The first question above is the overarching question that the Land Use Commission (“LUC”) will determine in reviewing all relevant evidence and deciding whether to approve or disapprove the requested DBA.

While that overall question is much bigger than the focus of this testimony, it is appropriate to say two things about that question.

1. If Petitioner does not have the financial capacity to build all of its needed infrastructure, it goes without saying that housing won’t be built.
2. It gets more complicated when the Petitioner’s ability to build his development without negative impacts to the community is dependent on the provision of offsite public infrastructure by public agencies. If the public infrastructure, whether roads, transit, sewers, etc., is not guaranteed to be built in time to meet the developer’s timetable, it will be necessary for the LUC to require Petitioner to pay for and build the public offsite infrastructure thereby ensuring its timely provision. Given the financial burden Petitioner would incur, it is unlikely that development could be successfully done. It will either fail, or will be done without sufficiently meeting housing needs or addressing impacts to the community.

Focusing more narrowly on the second question above relating to the provision of housing opportunities, the subject of this testimony, there are two types of households needing housing that must be addressed:

1. **Low and low-moderate income families** make up the traditional affordable housing group usually addressed by government programs (incomes less than or equal to 120% AMI). These families require government subsidies or developer assessments to bring the housing to fruition. The market cannot provide for those needs because the average cost of building a housing unit (about \$550,000) is far beyond the ability of families to pay. For the rest of this discussion, I will refer to this group as the “Low-Moderate” Group.

2. **The “gap group,”** sometimes also called the “missing middle,” (incomes between 140 AMI and 180 AMI) can afford market prices, but that supply of housing is sometimes lost between the low-income housing built with governmental assistance, such as tax credits, and the wealthy homes that the developers prefer to build because of higher profit margins. Because there are no government monies earmarked for the building of this category of homes, and these homes are attractive to offshore and local investors, they are often not available to the “salt of the earth” families who work and live in the community. The developer is making a lot of promises to and about this group--indeed, it is the provision of this kind of housing that is used as the core justification for the DBA. Hereinafter, this group will be referred to as the “Gap Group”

Q. Will the proposed DBA for the HoKua Place development in Kapa‘a adequately provide housing for low and low-moderate income households as per HRS §205-17(3)(F)?

A. As presently proposed, the proposed DBA does not adequately provide for Low-Moderate Income Housing.

Using the County of Kauaʻi's recently amended housing ordinance as the minimum standard for providing housing for the Low-Moderate Group, it appears at first glance the Petitioner is exceeding the County's requirement of 20% of total housing units proposed to be built. However, the County's ordinance limits the range of households qualifying for housing under the ordinance to families at 120% AMI and lower. Because the range of household incomes Petitioner is proposing to meet includes the 140% AMI households, depending on how many of those 231 units will be priced for 140% AMI households, Petitioner's proposal may not be sufficient to satisfy the county's requirement. Kauaʻi County has decided that it is not good public policy to include households with 140% AMI in the Low-Moderate Group because the 140% AMI group can afford market prices.¹

Although the Petitioner's undated, "updated" market study refers to the potential for 183 multi-family units priced at \$125,000-175,000, the DBA petition does not assure this pricing and rather states the "Petitioner intends to offer approximately 30% of the total number of housing units and lots to be developed on the Petition Area for sale on site at prices intended to satisfy the affordable housing requirement[.]"

The Petitioner has also stated that the affordable housing provided in the Low-Moderate category will be "for sale" housing. According to affordable housing experts, "for sale" housing doesn't usually work for those income groups. It puts too much strain on household budgets and often results in defaults. It is important to establish a setup for success, starting those families first in rentals. The Petitioner does not address whether families in affordable units, or other units, will be charged a Homeowners' Association monthly fee, which will render the housing unaffordable.

Both problems described above can be addressed by a condition that requires the developer to meet, at a minimum, the County of Kauaʻi housing requirements AS APPLIED by the County.

The LUC, however, is obligated to look beyond the County of Kauaʻi's affordable housing requirements and satisfy itself that the proposed DBA conforms to the goals, objectives and policies of the Hawaii State Plan. Otherwise, the only statutory requirement related to housing would have been that the developer satisfy county housing requirements.

The two most relevant State Plan goals (HRS §226-4) are as follows:

1. ***A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations. (emphasis added)***

¹ A 2019 Kauaʻi County workforce housing study recommended:

140% Pricing Level – Units priced at 140% of Area Median Income (AMI) outside of the VDA are too close to market prices. When deed restricted units are priced too close to market, this can create challenges in marketing the units. Consider modifying requirements so units are priced at a level affordable to a lower AMI level. Households earning up to 140% of AMI could remain eligible to purchase the units.

"Workforce Housing Nexus and Financial Feasibility Analysis," prepared for the County of Kauaʻi, Keyser Marston Assoc., Inc., at PDF page 16 (Jun. 2019) *available at*: https://kauai.granicus.com/Viewer.php?view_id=2&clip_id=2110&meta_id=131549.

2. ***Physical, social, and economic well-being, for individuals and families. . . (emphasis added)***

A strong, stable, viable, and growing economy requires that workers have sturdy, stable, affordable housing located close to work. Only a few years ago, businesses couldn't find workers to hire, partly because employees were leaving the island due to a high cost of living, due primarily to a high cost of housing. Employers couldn't bring in new employees to live on Kaua'i because affordable housing was so hard to find. There were also stories about employees living in their cars. A lack of affordable housing restrains and harms the economy and the community.

Affordable housing is also essential to the physical, social and economic well-being of individuals and families. Living in crowded or homeless conditions makes it harder for a child to do his or her homework, affects a person's quality of sleep, and aggravates one's mental health. Paying 50- 60% of household income for shelter means that other basic needs go unmet, often requires the responsible adults to work 2 or 3 jobs each, and children become latchkey kids.

For all the reasons above, the LUC has the responsibility to ensure that any approved DBA results in the provision of affordable housing that is truly affordable, and not only on the first sale.

The County of Kaua'i requires that "for sale" housing provided under the County's housing ordinance be subject to a 50-year buy-back clause. This is not sufficient to address the affordable housing problem.

A 50-year buy-back clause results in a windfall to the buyer whose purchase was enabled either by taxpayer subsidy and/or the exercise of governmental power that is required to ensure that entitlements to land result in benefits to the community. The windfall is gained at the expense of the next qualified family because the unit is no longer affordable. At the same time, the purpose of the taxpayer investment or government assessment lasts only for one generation, while exacerbating the gap between those who have and those who don't. It is not good public policy to allocate scarce public resources to unduly enrich a few at the expense of many.

The LUC could require that the Low-Moderate housing provided to meet the County Housing requirement be affordable in perpetuity. The County and developer would then negotiate to have the Low-Moderate housing provided in one of three ways: as rentals owned by the County or a housing nonprofit, as 99-year leaseholds with the County or a housing land trust owning the fee or as limited equity housing cooperative housing units with the cooperative owning the fee. This would ensure that the units remain affordable for generations. With an ever growing inventory of affordable housing, the goals of the State Plan could be met.

Q. Whether the proposed DBA will adequately provide housing for all income groups, including gap groups per HRS §205-17(3)(F)?

A. As presently proposed, the subject DBA will not adequately provide housing for the gap group. There is no evidence that the housing the Petitioner provides will actually and effectively "alleviate" the unmet community need for housing.

In paragraph 19 of the DBA Petition, "**Assessment of Need for the Reclassification,**" Petitioner states: "The FEIS and the Updated Kapa'a Housing Market Study comprise Petitioner's assessment

of population growth trends and the need for development and construction of the Project to serve Kauai's growing population and to alleviate the unmet need for housing.

Petitioner presents his proposal to meet community housing need as the core justification for the DBA. However, Petitioner does not show how his plan will prevent off-island and on-island demand for second homes and real estate investments described in Petitioners' Updated Kapa'a Housing Market Study ("Market Study") and the 2019 Hawaii Housing Planning Study (Intervenor Exhibit I-56), from scooping up the supply and raising prices, thereby excluding local families that want to live and work in the Kapa'a area from purchasing the units.

Petitioner does not indicate how many housing units will be provided for gap group families--families with household incomes between 140%-180% AMI.² Unless a commitment is made to sell the units at gap group prices, the Petitioner will be tempted to sell units at prices the gap group will not be able to afford, especially if demand is high when the units are being offered. This will be especially so, if on- and off-site infrastructure requirements are costly and if Petitioner's investors have high expectations for their return on investment.

Nor does Petition propose anti-speculation guidelines for the gap group housing, such first-time buyer requirements (buyer shall not own any other property), buy-back clauses (if buyer resells in a specified number of years, the developer or the county buys back the property and sells so another qualified buyer) or priority given to those who work in the Kapa'a-Wailua area.

Too often a developer, in order to secure an entitlement, will make commitments that he cannot ultimately keep, and because the government body giving the entitlement does not ensure that the commitments are doable and enforceable, when the entitlement is granted, the community benefits are not produced but the negative impacts are. It is no wonder that the community becomes "anti-development."

In conclusion, as presently proposed, the proposed DBA does not give assurance that the need for either the Low-Moderate or the Gap Group, will be met. As such, the mandate in HRS §205-17(3)(F) will not be adequately addressed. Nor will the goals of the State Plan, as emphasized in HRS §205-17(1), be met. Because meeting the community's need for housing is at the crux of Petitioner's justification for the DBA, and the proposal does not adequately ensure it will meet this need, the DBA request should be disapproved.

Q. Does this conclude your testimony?

A. Yes.

² For families of four, household income ranges from \$142,550 and \$183,250. Source: Kauai County 2020 Annual Income Limits, [Intervenor Exhibit I-57](#).