EXHIBIT A

FINAL

INFRASTRUCTURE MASTER PLAN
PŪLEHUNUI COMMUNITY DEVELOPMENT PLAN
PŪLEHUNUI, MAUI, HAWAII

PREPARED FOR:

Hawai‘i Community Development Authority
Department of Business, Economic Development & Tourism

PREPARED BY:

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

FEBRUARY 2026

EXHIBIT A

FINAL
INFRASTRUCTURE MASTER PLAN
PŪLEHUNUI COMMUNITY DEVELOPMENT DISTRICT

PŪLEHUNUI, MAUI, HAWAII

TMK: (2) 3-8-008: 001, 007, 037, 038

Prepared For:

Hawaii Community Development Authority
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February 2026

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Appendix B Low Impact Development Details
Appendix C Water Consumption Demand Calculations
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EXECUTIVE SUMMARY

The Pūlehunui Community District Development (CDD) encompasses approximately 1,142 acres of largely undeveloped public land in Central Maui. The district includes parcels owned by several agencies - including the Department of Land and Natural Resources (DLNR) and Department of Accounting and General Services (DAGS) - as well as one privately owned parcel.

The purpose of the Pūlehunui CDD is to guide the transformation of state lands into a district that reflects sustainable land use practices, supports critical public facilities, and respects the region's cultural and environmental context. Key priorities for the district include enabling light industrial and public/quasi-public uses, expanding infrastructure capacity, fostering interagency coordination, and preserving cultural and archaeological resources.

The Infrastructure Master Plan (IMP) presents a detailed evaluation of the site infrastructure and utility systems for the development of the Pūlehunui CDD. This includes an assessment of existing site infrastructure improvements, and identifies project requirements related to roadway facilities, site grading, storm water systems, electrical and communication facilities, sanitary sewer systems, and potable water systems. These findings are summarized in this IMP.

1.0 INTRODUCTION

1.1 Purpose

The Infrastructure Master Plan (IMP) is being prepared in support of the project planning effort to provide an evaluation of the site infrastructure and utility systems presently surrounding the project site. This evaluation will include the following:

a. Review of the existing site infrastructure improvements,

b. Determine the project requirements related to the roadway and access, site grading and flooding, storm drainage, sanitary sewer system, water supply system, and project requirements for electrical and telecommunication systems,

c. Identify the opportunities and constraints for the above-mentioned requirements, and

d. Based on the anticipated project requirements extrapolated from the final program, determine the required improvements.

The assessment of existing site conditions, land characteristics, and utilities for the project site will be based on available data obtained from the County of Maui's GIS system, record information, as-built plans, and from aerial and street level photography from the Google Earth database. Inquiry letters were submitted to appropriate County and other service agencies, with the project requirements for each parcel development to determine adequacy and agency's ability to serve the development requirements.

The proposed improvements are conceptual and subject to change based on further development of plans and availability of additional information. The conceptual layouts and density distribution that are being analyzed for the EIS do not constitute any final locations or pre-specified zones for any phases of the project, but instead serve to create a case study for analysis.

1.2 Location & Surrounding Uses

The Pūlehunui Community Development District, herein referred to as the "Pūlehunui CDD" is located in the central region of Maui (see Figure 1-1). The project encompasses 988.14 acres of mixed-use parcels and is further identified as Tax Map Key(s) (2)3-8-008:001, 007, 037, and 038 (see Figure 1-2). The parcels are privately owned or owned/managed by various state agencies.

The entire Pūlehunui CDD project area is undeveloped lands with limited to no available infrastructure on-site. The Puunene National Guard Armory and Maui Raceway Park are located within the Pūlehunui CDD (see Figure 1-3). The area surrounding Pūlehunui CDD includes a mix of industrial, agricultural, and commercial uses. Kealia Pond National Wildlife Refuge is located to the south and industrial uses located to the east.

Currently, the entire Pūlehunui CDD is within the State Land Use Agricultural" District and the County of Maui's Agricultural District (see Figure 1-4).

1.3 Proposed Project

According to the Draft South Maui Community Development Plan (May 2025), the project site will be divided into the following land use designations (see Table 1-1):

- Agricultural Zone: Agricultural land conservation, agricultural parks, agroforestry, animal and livestock raising, solar energy facilities, minor utilities, and accessory farm dwellings tied to bona fide agricultural use. Also supports historical and archaeological preservation.
- Employment Center Zone: Light industrial uses (warehousing, light assembly, service and craft-type operations), business incubators, live-work spaces, and retail/commercial uses that support the workforce. May also include parks and civic spaces integrated within employment-focused areas.
- Public/Quasi-Public Zone: Government, non-profit, or educational uses including churches, parks, schools, libraries, fire and police stations, government buildings, public utilities, hospitals, cemeteries, and community centers.

The Agricultural Zone comprises 460.44 acres and is identified by TMK's (2) 3-8-008: 001, 007, 038. TMK (2) 3-8-008:001 is bounded by Hawaiian Cement to the south and South Firebreak Road to the west. TMK (2) 3-8-008:007 is bounded by Kamaaina Road to the north and Maui Veterans Highway to the west. TMK (2) 3-8-008:038 is bounded by Maui Veterans Highway to the west and Maui Raceway Park to the north and east.

The Employment Center Zone comprises 305.07 acres and is identified by apportion of TMK (2) 3-8-008: 001. The Employment Center Parcels are bound by Maui Veterans Highway to the west, Kamaaina and South Firebreak Roads to the north and east, and the Puunene Army National Guard Armory and Maui Raceway Park to the south.

The Public/Quasi-Public Zone comprises 222.63 acres and is identified by TMK (2) 3-8-008: 037. The Public/Quasi-Public Parcel is bound by the Puunene Army National Guard Armory to the west, Airport Village to the east, TMK (2) 3-8-008:038 to the south, and Employment Center zoning to the north. See Figure 1-5 for South Maui Community Land Use Designation Map.

Table 1-1
South Maui Community Plan Designations & Parcel Information

Land Use Designation	Tax Map Key	Area (acre)	Total Area (acre)
Agricultural Zone	3-8-008:001 (por.)	93.03	460.44
	3-8-008:007	73.97	
	3-8-008:038	293.44	
Employment Center Zone	3-8-008:001 (por.)	305.07	305.07
Public/Quasi-Public Zone	3-8-008:037	222.63	222.63
		988.14	988.14

Table 1-2 below provides the baseline conditions of the project site. The proposed DLNR Industrial and Business Park, DOFAW Baseyard, Maui Correctional Center, and VA Facility, as well as the existing Puunene Army National Guard Armory and Maui Raceway Park are all identified projects that were found to be in the Pūlehunui CDD prior to the establishment of the Pūlehunui CDD project boundary.

Table 1-2
Identified Proposed Projects and Existing Uses
(Baseline Conditions)

Land Use Designation	Acres	Use	Acres	% of District (988.14 ac)
Employment Center Zone	305.07	DLNR Industrial and Business Park (Proposed)	280.00	28.34%
		Puunene Army National Guard Armory (Existing)	25.07	2.54%
		DOFAW Baseyard (Proposed)	20.30[1]	2.05%[1]
Public/Quasi-Public Zone	222.63	Maui Raceway Park (Existing)	182.33	18.45%
		Maui Correctional Center (Proposed)	40.30	4.08%
Agricultural Zone	460.44	Fallow Lands (Undeveloped/Open Space)	450.44	45.59%
		VA Facility (Proposed)	10.00	1.01%
Total Pūlehunui CDD	988.14		988.14	100.00%

[1]*The acreage for the proposed DOFAW Baseyard is included in the overall DLNR Industrial and Business Park acreage.*

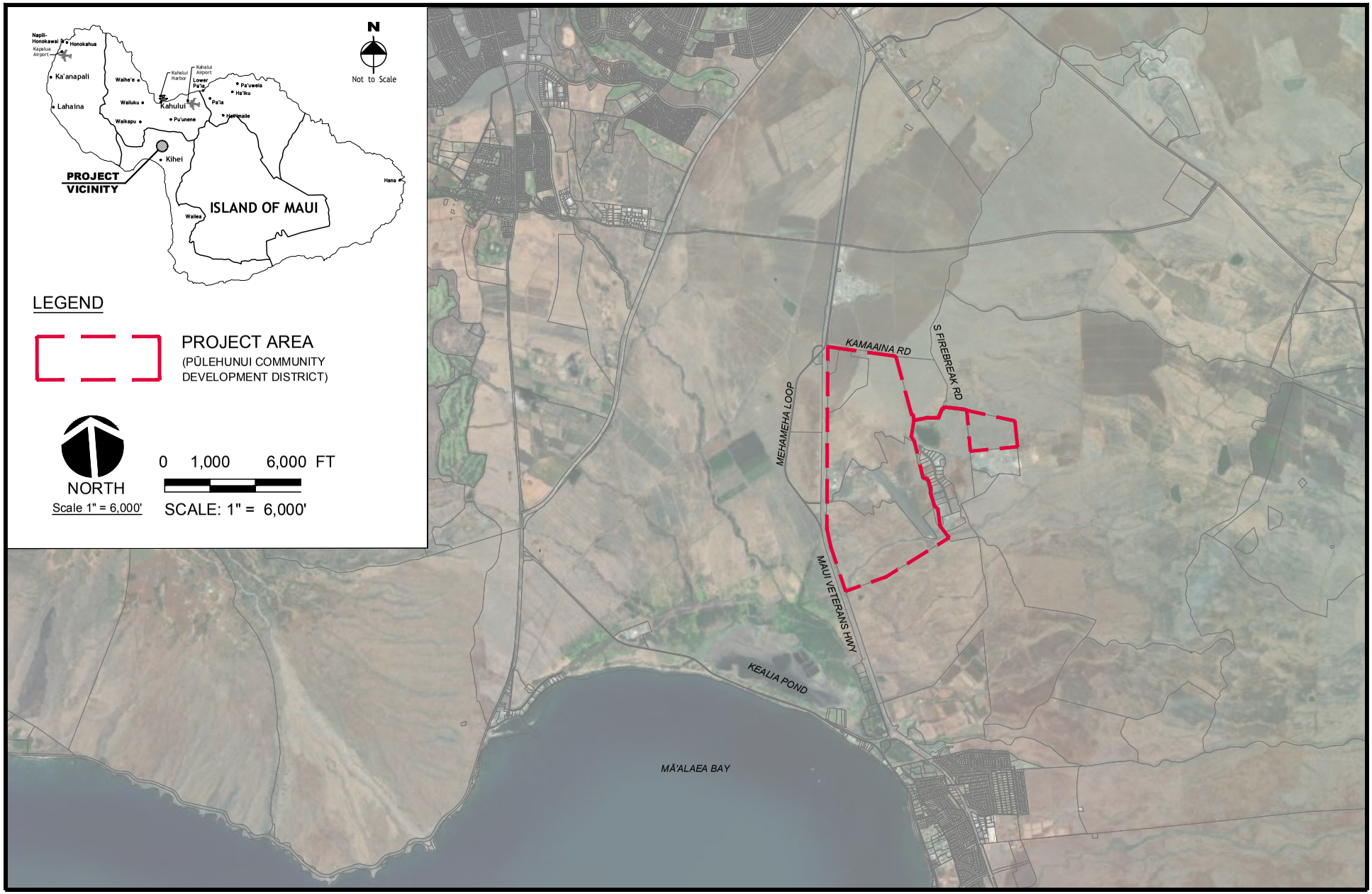

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FIGURE 1-1
PROJECT LOCATION MAP

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PŪLEHUNUI, MAUI, HAWAII

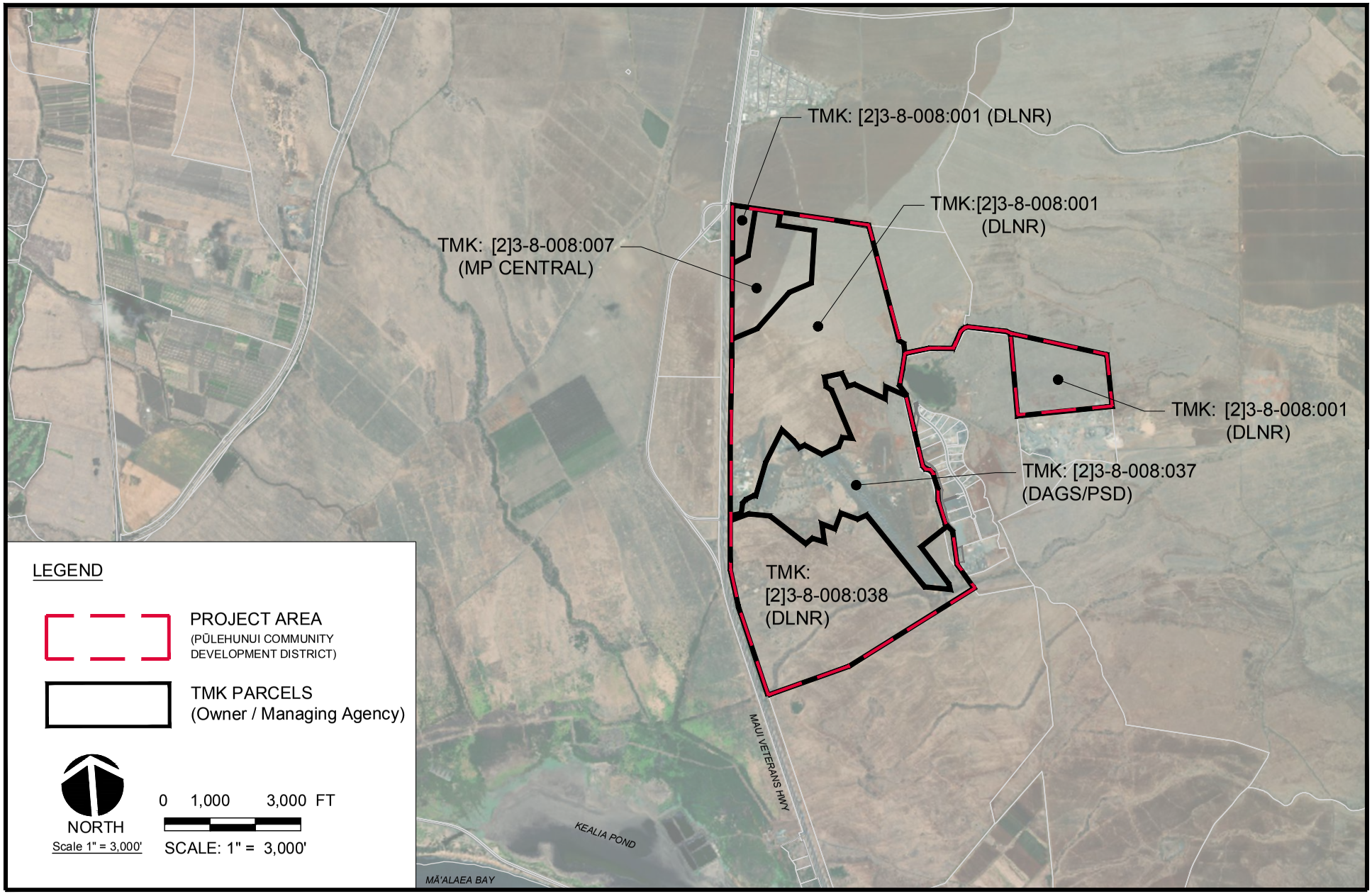

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FIGURE 1-2
TMK MAP KEY

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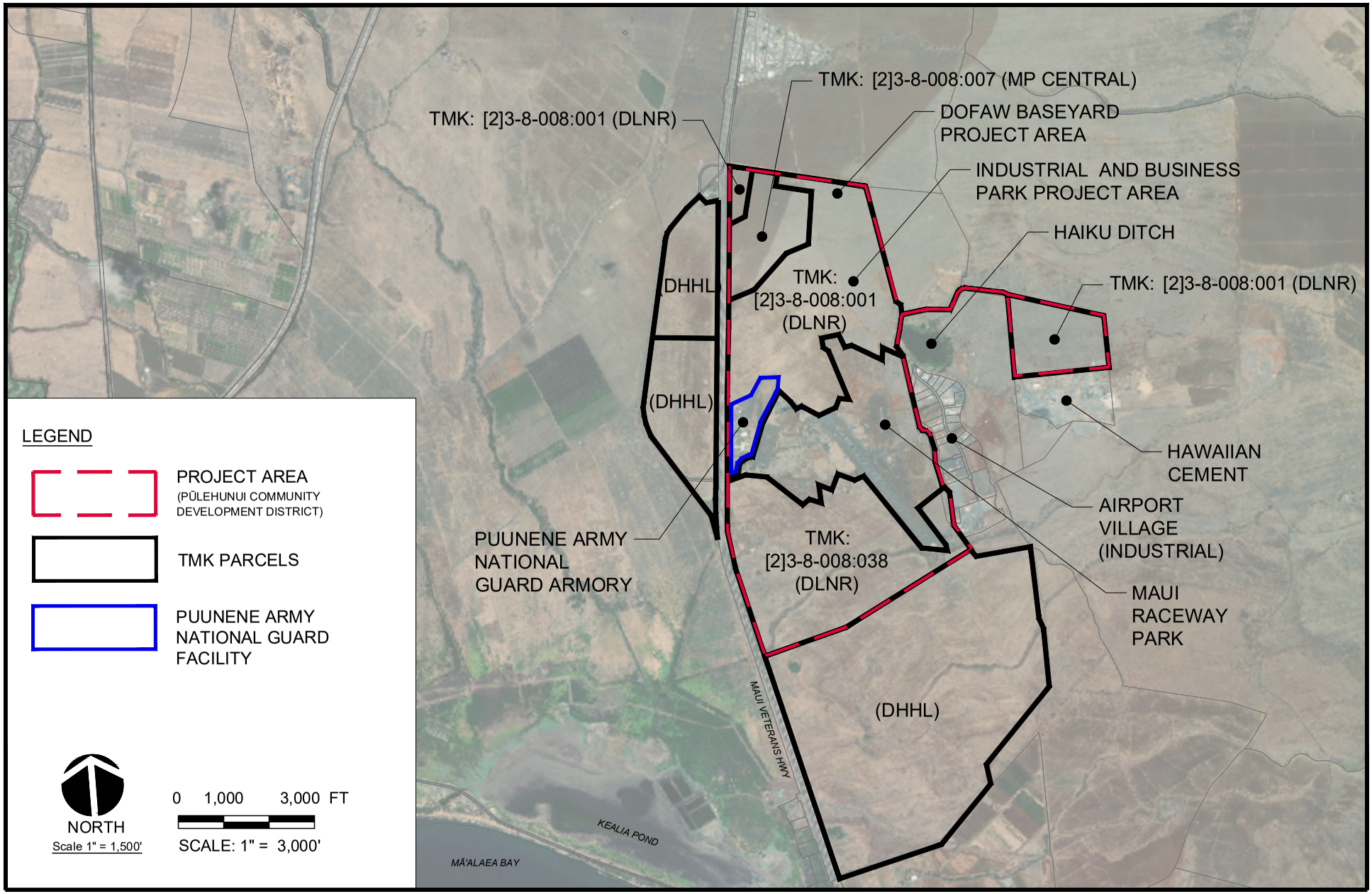

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FIGURE 1-3

EXISTING AND SURROUNDING USES

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PŪLEHUNUI, MAUI, HAWAII

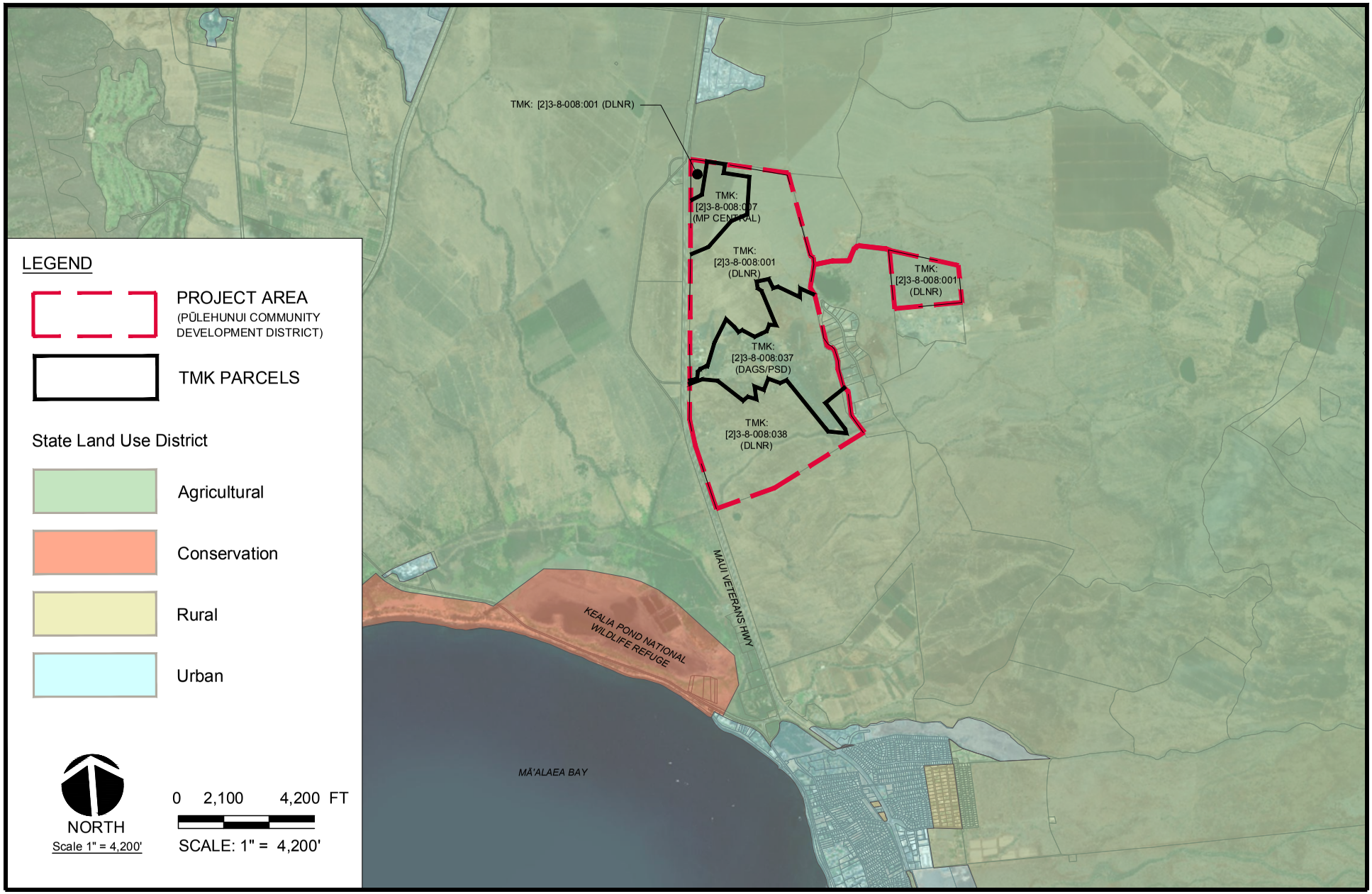

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FIGURE 1-4

STATE LAND USE DISTRICT BOUNDARY

PŪLEHUNUI, MAUI, HAWAII

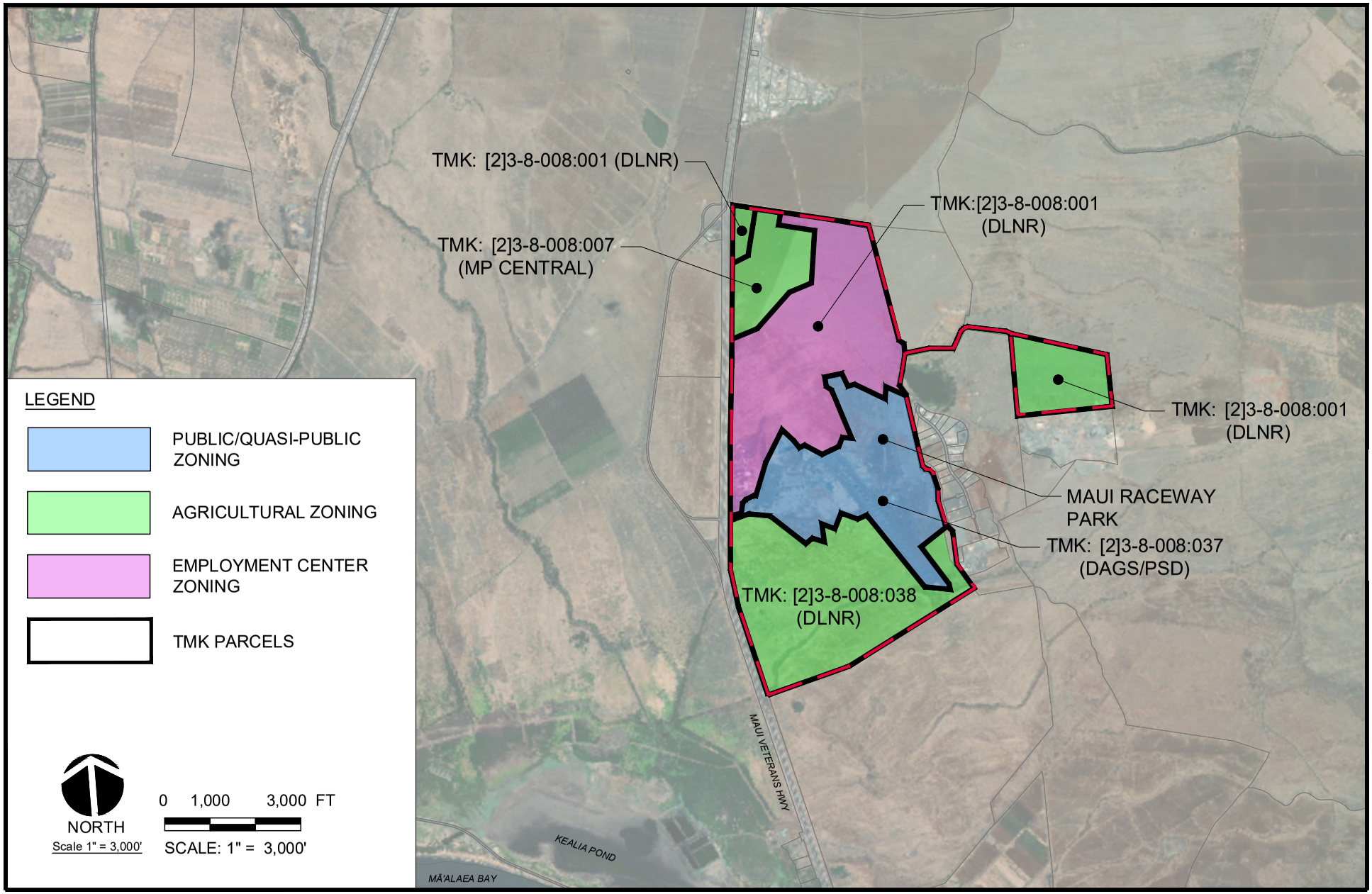

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FIGURE 1-5

SOUTH MAUI COMMUNITY LAND USE DESIGNATION

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PŪLEHUNUI, MAUI, HAWAII

2.0 EXISTING SITE CONDITIONS

2.1 Topography

The topography of each site plays a crucial role in determining the placement, layout, and design of the facility, as well as the associated costs of site preparation and construction. Sites with a relatively flat topography, having a slope ranging from 0 to 8 percent, are preferred over sites with significant variations in elevation (See Figure 5). Sites with slopes between 8 to 14 percent are less desirable, but construction practices can be used to mitigate potential issues. Generally, areas with significant slopes (greater than 14 percent) are to be avoided.

Within the Pūlehunui CDD, the only areas with this level of slope are located around the southern edge of the district near the Kolaloa Gulch drainage. Based on the review of record information, the parcels have minimally steep slopes from mauka to makai with site elevations ranging from approximately 33 to 226 feet mean sea level for the project area (See Figure 2-1).

2.2 Soils

Soil series and mapping units for the island of Maui are found in maps on the United States Department of Agriculture online web soil survey and soil physical properties are found in the "Soil Survey of islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii" report. The soil has characteristics described below (see Figure 2-2):

- Alae sandy loam, 3 to 7 percent slopes, MLRA 158 (KNXD): This soil occurs in alluvial fans, stream terraces, mountain slopes, and ash fields. It has a material of volcanic ash derived from basalt over alluvium derived from basalt. Runoff is low, and it is excessively drained. The Hydrologic Soil Group is A.
- Alae cobbly sandy loam, 0 to 3 percent slopes, MLRA 158 (MXC): This soil occurs in ash fields, mountain slopes, stream terraces, and alluvial fans. It has a material of volcanic ash derived from basalt over alluvium derived from basalt. Runoff is very low, and it is excessively drained. The Hydrologic Soil Group is A.
- Alae cobbly sandy loam, 3 to 7 percent slopes, MLRA 158 (AcB): This soil occurs in alluvial fans, stream terraces, mountain slopes, and ash fields. It has a material of volcanic ash derived from basalt over alluvium derived from basalt. Runoff is low, and it is excessively drained. The Hydrologic Soil Group is A.
- Ewa silty clay loam, 0 to 3 percent slopes, MLRA 158 (EaA): This soil occurs in alluvial fans, stream terraces, and mountain slopes. It has a material of alluvium derived from basalt. Runoff is very low, and it is well drained. The Hydrologic Soil Group is B.
- Ewa cobbly silty clay loam, 0 to 3 percent slopes, MLRA 158 (EcA): This soil occurs in alluvial fans, stream terraces, mountain slopes, and ash fields. It has a material of basic igneous rocks. Runoff is low, and it is well drained. The Hydrologic Soil Group is B.
- Ewa cobbly silty clay loam, 3 to 7 percent slopes, MLRA 163 (EcB): This soil occurs in alluvial fans. It has a material of basic igneous rocks. Runoff is medium, and it is well drained. The Hydrologic Soil Group is B.

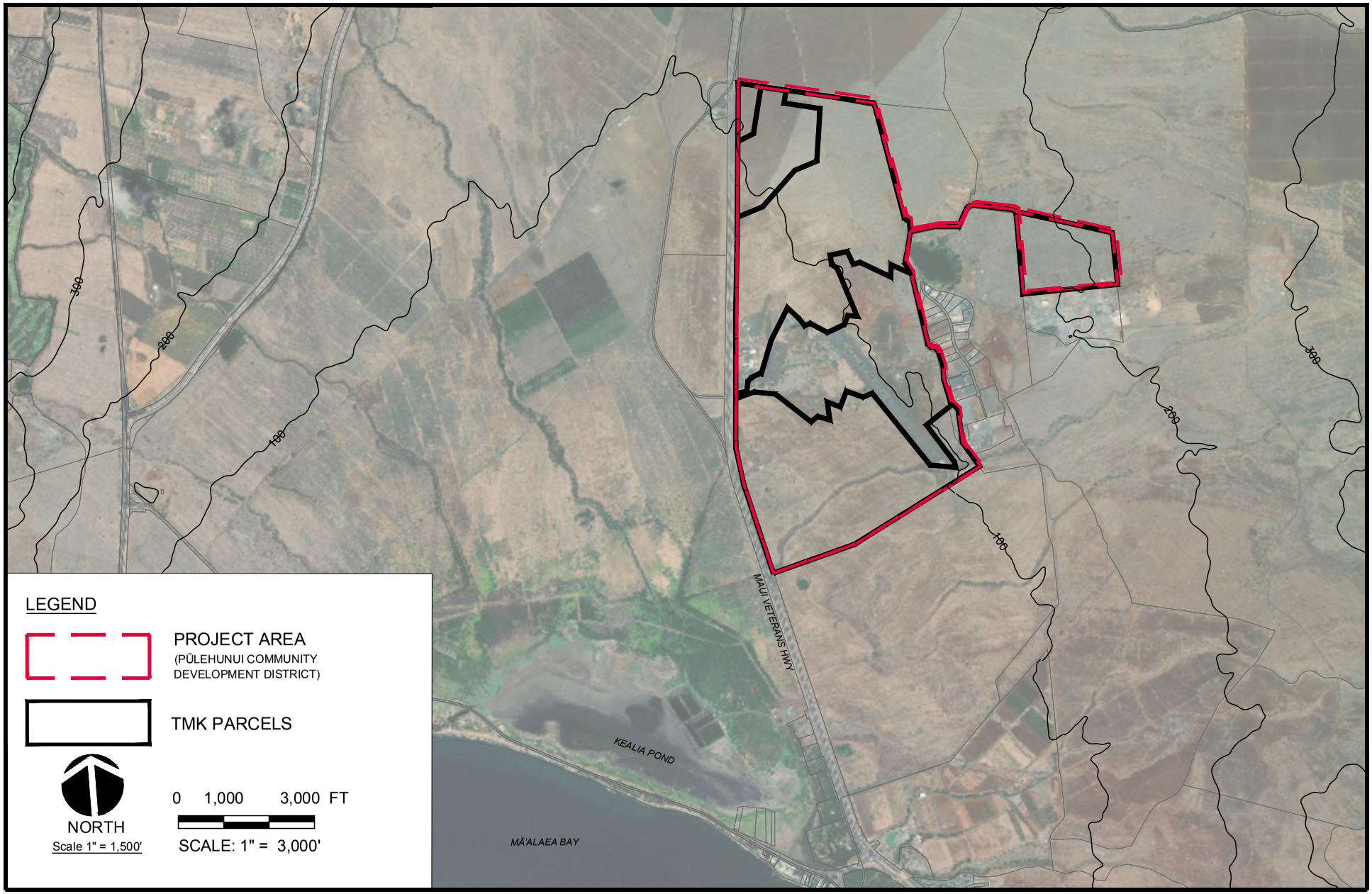

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FIGURE 2-1
TOPOGRAPHIC MAP

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PŪLEHUNUI, MAUI, HAWAII

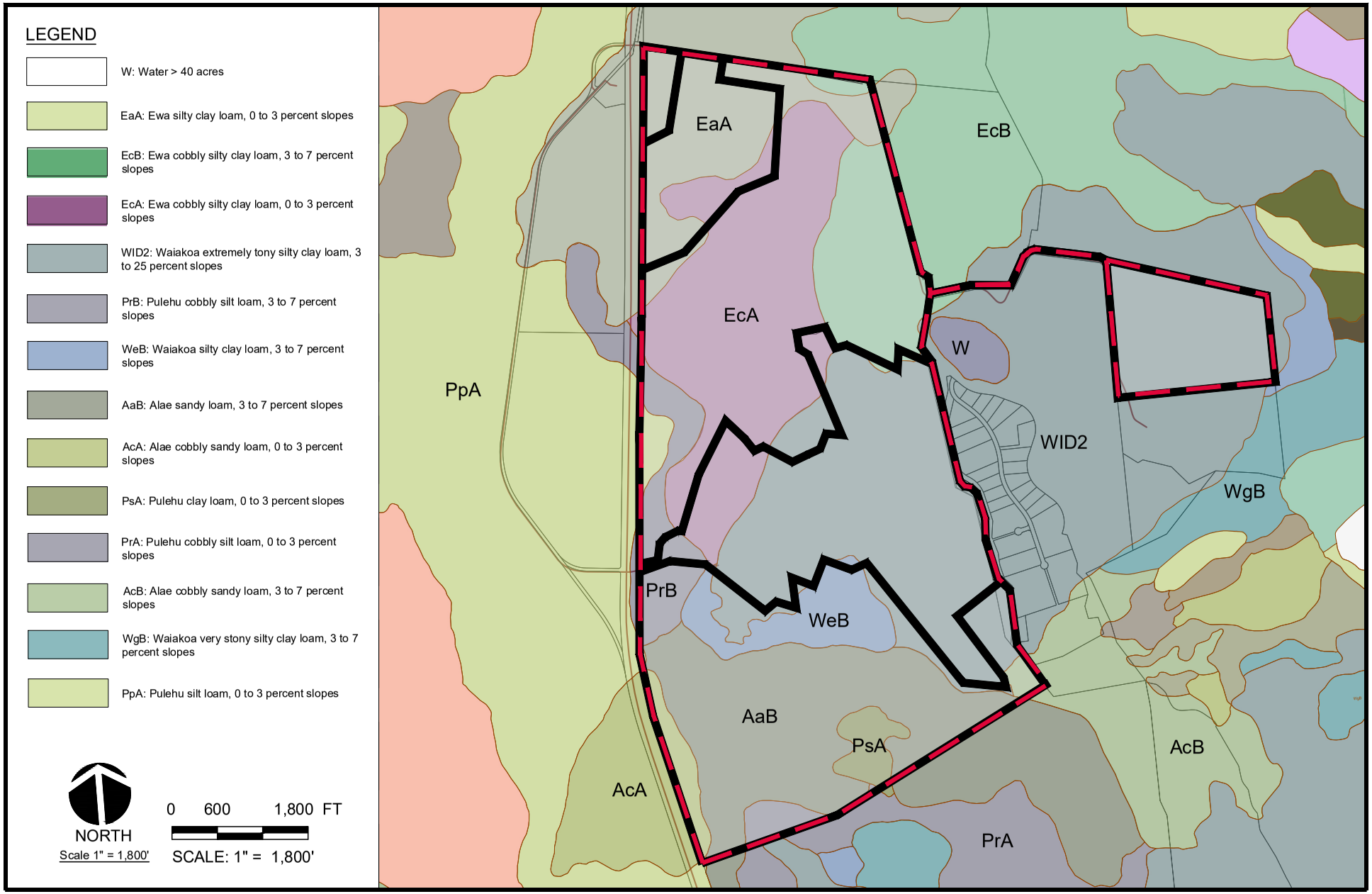

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FIGURE 2-2

SOIL CLASSIFICATION MAP

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PŪLEHUNUI, MAUI, HAWAII

- Pulehu silt loam, 0 to 3 percent slopes (PpA): This soil occurs in alluvial fans. It has a material of alluvium. Runoff is low, and it is well drained. The Hydrologic Soil Class is B.
- Pulehu cobbly silt loam, 0 to 3 percent slopes (PrA): This soil occurs in alluvial fans. It has a material of alluvium. Runoff is low, and it is well drained. The Hydrologic Soil Group is B.
- Pulehu clay loam, 0 to 3 percent slopes, MLRA 163 (PsA): This soil occurs in flood plains, stream terraces, and alluvial fans. It has a material of alluvium derived from igneous rock. Runoff is low, and it is well drained. The Hydrologic Soil Group is B.
- Waiakoa silty clay loam, 3 to 7 percent slopes (WeB): This soil occurs in summits. It has a material of basic igneous rock. Runoff is medium, and it is well drained. The Hydrologic Soil Group is C.
- Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded, MLRA 157 (WID2): This soil occurs in ash fields. It has a material of volcanic ash and/or residuum weathered from basalt. Runoff is high, and it is well drained. The Hydrologic Soil Group is C.

2.3 Flood Hazard

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) #150003 shows that all project sites, except for parts of the DHHL Pūlehunui South and TJG/CMBY parcels, are located within "Zone X". These project sites are in a low-to-moderate risk flood zone and are identified as areas determined to be outside the 0.2% annual chance floodplain. The parts not located in "Zone X" are located in "Zone A", which are "areas where base flood elevations have not been determined" (See Figure 2-3).

The parcels are not located in the tsunami evacuation zone as established by the Maui Emergency Management Agency, nor are the parcels located in the 3.2 feet Sea Level Rise Exposure area.

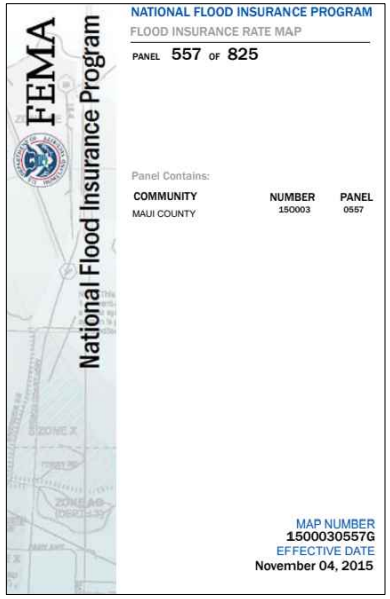
2.4 Preliminary Project Requirements

Accessible walkway layouts, dimensions, and slopes shall comply with ADA Accessibility Guidelines. Based on existing topography, grade adjustment structures will be required. However, this will be verified during the design phase.

On-site improvements will require earthwork excavation, embankment, fine grading, and controlled rock blasting in certain locations. No layouts for civil site earthwork or grading have been proposed, pending. Earthwork or grading will be proposed to accommodate elevation or finished grade requirements such as building sites, roadways, walkways, driveways, planting areas, landscape areas etc. The design will determine earthwork quantities for excavation and/or embankment for export or import of materials. At that time, geotechnical investigation and recommendations should be available, and site grading will follow the Geotechnical Engineer's recommendations. All grading and construction activities will comply with the County of Maui Standards, to control soil erosion and ensure that the discharge of pollutants from the construction site will be reduced to the maximum extent practicable (MEP), balancing cut and fill to the MEP, suitability of soil material, pavement section, trenching, soil treatment, and other parameters. Storm water runoff in excess of the existing conditions will need to be retained, harvested/reused, or disposed of by percolation onsite. A National Pollutant Discharge Elimination System (NPDES)

permit for runoff associated with construction activities is expected to be required as the overall disturbed area of the project will be greater than one acre of land area.

Temporary erosion control measures will need to be installed prior to any demolition and/or construction activities. Structural Best Management Practices (BMPs) including silt fence, filter sock, stabilized construction ingress/egress, concrete washout area, and sediment control filters at drain inlets and catch basins will also need to be installed, as required.



LEGEND

- PROJECT AREA (PŪLEHUNUI COMMUNITY DEVELOPMENT DISTRICT)
- TMK PARCELS
- ZONE 'VE': COASTAL FLOOD ZONE WITH VELOCITY HAZARD (WAVE ACTION); BASE FLOOD ELEVATIONS DETERMINED
- ZONE 'AE': BASE FLOOD ELEVATIONS DETERMINED
- ZONE 'A': BASE FLOOD ELEVATIONS NOT DETERMINED
- ZONE 'X': AREAS DETERMINED TO BE OUTSIDE THE O.2% ANNUAL CHANCE FLOODPLAIN

NORTH

Scale 1" = 3,000'

0 1,000 3,000 FT

SCALE: 1" = 3,000'

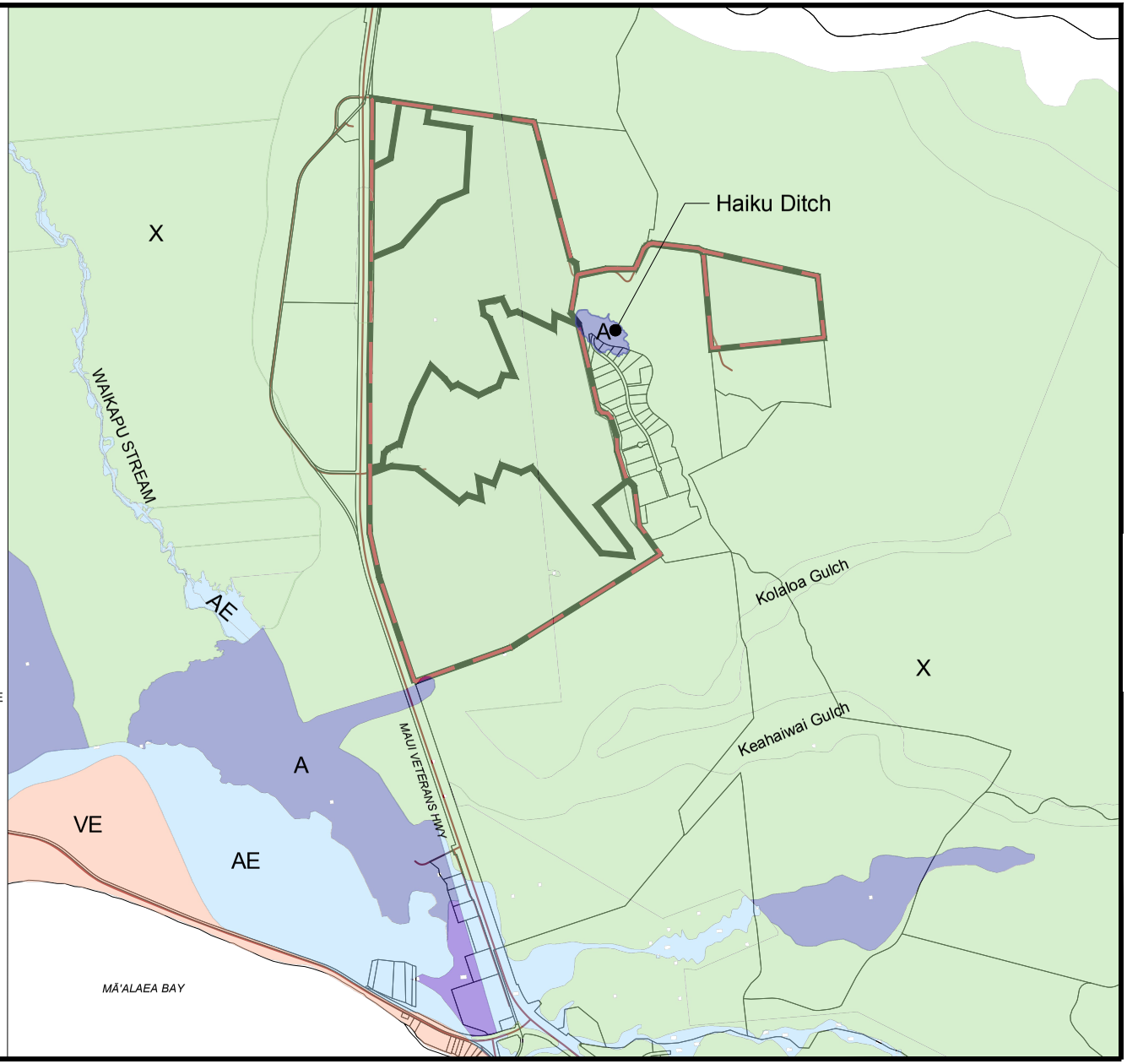


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FIGURE 2-3

FLOOD INSURANCE RATE MAP

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PŪLEHUNUI, MAUI, HAWAII

3.0 TRANSPORTATION MASTER PLAN

3.1 Existing Conditions

3.1.1 Roadway Network

External to the project area, north-south traffic through the Pūlehunui region is primarily served by Maui Veterans Highway and supplemented by local roadways such as Mehameha Loop and Nopu Street. Internal to the project area, existing roadways include the Kamaaina Road, portions of South (S.) Firebreak Road and Motor Sports Park Access Road. A brief description of the existing internal roadways within the project are included below.

Kamaaina Road

Kamaaina Road is an unstriped, two-way roadway generally oriented in the east-west direction that runs along the north side of the Pūlehunui CDD. Kamaaina Road originates at the intersection with Maui Veterans Highway and Mehameha Loop (North) and continues east until its terminus at S. Firebreak Road.

S. Firebreak Road

Firebreak Road is an unstriped, two-way State of Hawaii road that runs along the east side of the Pūlehunui CDD. This road originates north of Kamaaina Road as a generally north-south oriented roadway that transitions to a generally east-west roadway east of Nopu Street. It should be noted that there is a gate located along the roadway west of Nopu Street that constricts the roadway width to one lane, but the roadway widens beyond the gate and provides access to the nearby Hawaiian Cement Base yard and the Pūlehunui CDD parcel TMK (2) 3-8-008-001. In addition, it should be noted that north of Kamaaina Road, S. Firebreak Road is an unpaved, access-controlled roadway providing access to adjacent agricultural areas.

Motor Sports Park Access Road

Motor Sports Park Access Road (also known as the Maui Raceway Park Access Road and Pūlehunui Motorsports Park Access Road) is an unstriped two-way roadway State of Hawaii roadway that provides access to the Puunene Army National Guard Armory and the Maui Raceway Park. The roadway originates at the at the intersection with Maui Veterans Highway and Mehameha Loop (South) and continues east till it's terminus near the Maui Motocross Track. It should be noted that there is an existing connection between this roadway and Nopu Street that is currently gated.

3.1.2 Multimodal Facilities

Pedestrian Facilities

Pedestrian facilities in the vicinity of the Pūlehunui CDD are currently limited to an existing shared-use path along the east side of Maui Veterans Highway. The path starts at the intersection with Hookele Street near Kahului and extends southward beyond the transition of Maui Veterans Highway to Piilani Highway. In the vicinity of the Pūlehunui CDD, a grass buffer separates the travel way from the paved shared-use path. Pedestrian crossings at the intersections with Mehameha Loop (North) and Kamaaina Road are facilitated by marked crosswalks and signalized pedestrian crossings while those at the intersection with Mehameha Loop (South) and the Motor Sports Park Access Road are facilitated by marked crosswalks. Within the Pūlehunui CDD, there are currently

no improved pedestrian facilities provided along Kamaaina Road, S. Firebreak Road, or the Motor Sports Park Access Road.

Bicycle Facilities

As previously mentioned, there is an existing shared-use path along the east side of Maui Veterans Highway with a grass buffer separating the travel way from the path. This path accommodates pedestrian and bicycle traffic along the highway with crossings at the existing intersections facilitated by marked crosswalks and a traffic signal system at the intersection with Mehameha Loop (North) and Kamaaina Road. Within the Pūlehunui CDD, there are currently no dedicated bicycle facilities provided along Kamaaina Road, S. Firebreak Road, or the Motor Sports Park Access Road with all bicyclists required to share the travel way with vehicular traffic

Transit Facilities

Transit service in the vicinity is provided by the "Maui Bus" which is operated by Roberts Hawaii under a public-private partnership with the County of Maui. The Maui Bus public transit service consists of twelve (12) bus routes that operate seven days a week, including all holidays. These routes provide transit service in and between the Central, South, West, Haiku, Kula and Upcountry Maui communities. It should be noted that although there are transit routes that utilize Maui Veterans Highway such as the Kihei Island (Route 10), there are currently no bus stops located in the vicinity of the Pūlehunui region.

In addition to the Maui Bus public transit service, Maui Bus also offers the Maui Bus ADA Paratransit program, Maui Bus Commuter Service, and the Maui Economic Opportunity, Inc. (MEO) Human Services Transportation. The Maui Bus ADA Paratransit Program is an advanced reservation, curb-to-curb service for people with disabilities who are unbale to use the regular fixed route public transit service. These services are available along corridors that are within three-fourths of a mile on each side of each fixed Maui Bus route. Maui Bus Commuter Service is designed for early morning and evening commuters and augments the existing Maui Bus public transit service. The commuter service includes four commuter routes, all operated by Roberts Hawaii. The Haiku-Wailea Commuter Route travels along Maui Veterans Highway, but similar to the Maui Bus Route 10, the commuter route has no stops in the vicinity of the Pūlehunui CDD. Finally, the MEO operates the Human Services and Maui Bus Paratransit Services, which provides specialized service throughout Maui County, including door-through-door service to clients living within three-quarters of a mile of the fixed route.

3.2 Roadway Improvements Recommendations from Other Studies

The DLNR Environmental Impact Statement (EIS) identified potential deficiencies along Maui Veterans Highway in the vicinity of the Pūlehunui CDD including at the existing intersection with Mehameha Loop (North) and Kamaaina Road. In addition, deficiencies along Kamaaina Road, S. Firebreak Road, and Maui Raceway Park Access Road were also addressed. The following recommendations were included as part of the DLNR EIS:

- Coordinate with the DOT to coincide buildout with the planned widening of Maui Veterans Highway to three (3) lanes in each direction. It should be noted that although the widening of the highway has been discussed in the past, it is not currently included in transportation planning documents for this area including the Statewide Transportation Improvement Program (STIP), Maui MPO Transportation Improvement Program (TIP), or the Hele Mai Maui 2040 Plan.

In addition, during the development of the DHHL EIS, DOT directed the project to delete any assumption that the widening project would occur within the horizon of the DHHL project and indicated that the project should coordinate with DOT regarding its fair share of future regional improvements.

- Modify the intersection of Maui Veterans Highway with Mehameha Loop (North) and Kamaaina Road to provide additional and/or extended turning lanes. Exclusive turning lanes were recommended on the northbound and southbound approaches of the highway include double left-turn lanes on the southbound approach as well as exclusive turning lanes on the eastbound approach from Mehameha Loop (North). On the westbound approach from Kamaaina Road, double left-turn lanes, one through lane, and an exclusive right-turn lane along with a northbound acceleration lane was recommended. It should be noted that some of these recommended improvements were implemented when the highway was widened from a two-lane roadway to a four-lane roadway in 2008. In conjunction with this widening project, exclusive turning lanes were implemented on the highway approaches of this intersection along with an exclusive right-turn on the Kamaaina Road approach with a northbound acceleration along the highway.

- Install a traffic signal system at the intersection of Maui Veterans Highway with Mehameha Loop (South) and the Motor Sports Park Access Road and modify the intersection to provide exclusive turning lanes on all approaches of the intersection. It should be noted that some of these recommended improvements were implemented in conjunction with the aforementioned highway widening project including the installation exclusive turning lanes. Exclusive turning lanes were added to the northbound approach of the highway, an exclusive left-turn lane was added to the southbound approach, and an exclusive right-turn lane was included on the westbound approach from the Motor Sports Park Access Road.

- Upgrade Kamaaina Road, S. Firebreak Road, and the Maui Raceway Park Access Road to Maui County standards. It should be noted that the Maui Raceway Park Access Road is shown on area maps as the Motor Sports Park Access Road and also referred to as the Pūlehunui Motorsports Park Access Road in other documentation. Hereinafter the roadway will be referred to by its name as shown on area maps, the Motor Sports Park Access Road. In addition, it should also be noted that all three roadways are currently two-lane (unstriped), two-way roadways with varying pavement conditions. Field investigations indicate that Kamaaina Road and S. Firebreak Road have relatively good pavement conditions that allow for the smooth progress of vehicular traffic while the Motor Sports Park Access Road has relatively good pavement conditions near the highway, but the pavement condition deteriorates to poor conditions past the connections to the Puunene Army National Guard Armory.

In addition, the DLNR EIS identified new planned roadways expected to be developed in conjunction with their project. These roadways included the following:

- East-west oriented access roadway between Maui Veterans Highway and S. Firebreak Road (hereinafter referred to as the “DLNR Access”)

- North-south oriented connector roadway between Kamaaina Road and the Motor Sports Park Access Road

- One (1) internal connector roadway and four (4) additional local access roadways

The DLNR EIS also included the following recommendations:

- Coordinate with DHHL regarding the proposed new intersection on Maui Veterans Highway to ensure the proposed access roads for the DLNR project east of the highway (referred to as the "DLNR Access") and the DHHL project west of the highway (hereinafter referred to as the "DHHL Access") align and are acceptable to State of Hawaii, Department of Transportation (DOT). It should be noted that during the development of the DHHL EIS, DOT indicated that consultation meetings had been held with DHHL and DLNR where the new accesses were presented and agreed upon. In addition, it should be noted that in conjunction with the aforementioned widening of the highway from a two-lane roadway to a four-lane roadway a stub-out was provided along the highway between the Mehameha Loop (North)/Kamaaina Road and Mehameha Road Loop (South)/Motor Sports Park Access Road intersection, however this stub out does not currently align with the proposed DLNR Access/DHHL Access intersection location.
- Provide exclusive turning lanes along the northbound and southbound approaches of the highway including double turning lanes in both directions at the new DLNR Access/DHHL Access intersection. In addition, provide double left turn lanes, one through lane, and an exclusive right turn lane for the DLNR Access and DHHL Access at the intersection.
- Install a traffic signal system at the new intersection of Maui Veterans Highway with the DLNR Access and DHHL Access. The potential need for traffic signal optimization was noted at the intersections of Maui Veterans Highway with Mehameha Loop (North)/Kamaaina Road and Mehameha Loop (South)/Motor Sports Park Access Road once the new DLNR Access/DHHL Access intersection is constructed to provide favorable throughput progression along Maui Veterans Highway.

3.3 Proposed Transportation Improvements

The recommended roadway improvements are in accordance with Resolution 12-34, which adopted a Complete Streets Policy for the County of Maui and the transportation goals found in the Maui Long Range Transportation Plan (referred to as "Hele Mai Maui 2045"). These principles were incorporated into the update of the County of Maui Street Design Manual, published in 2018, and as such was the guideline used to determine the recommended street sections provided below.

3.3.1 Area Roadway Network

The Pūlehunui District development is planned to include improvements to existing internal roadways like Kamaaina Road, S. Firebreak Road, Motor Sports Park Access Road (Road M), Road N, and NN to bring them up to current County of Maui Street Design Standards. In addition, the construction of a network of new roadways referred to as Roads A, B, and C, is planned to serve as the spine roadway network for the development, supported by smaller roadways like Roads AA, AB, and AC. The recommended area roadway network is shown on Figure 3-1.

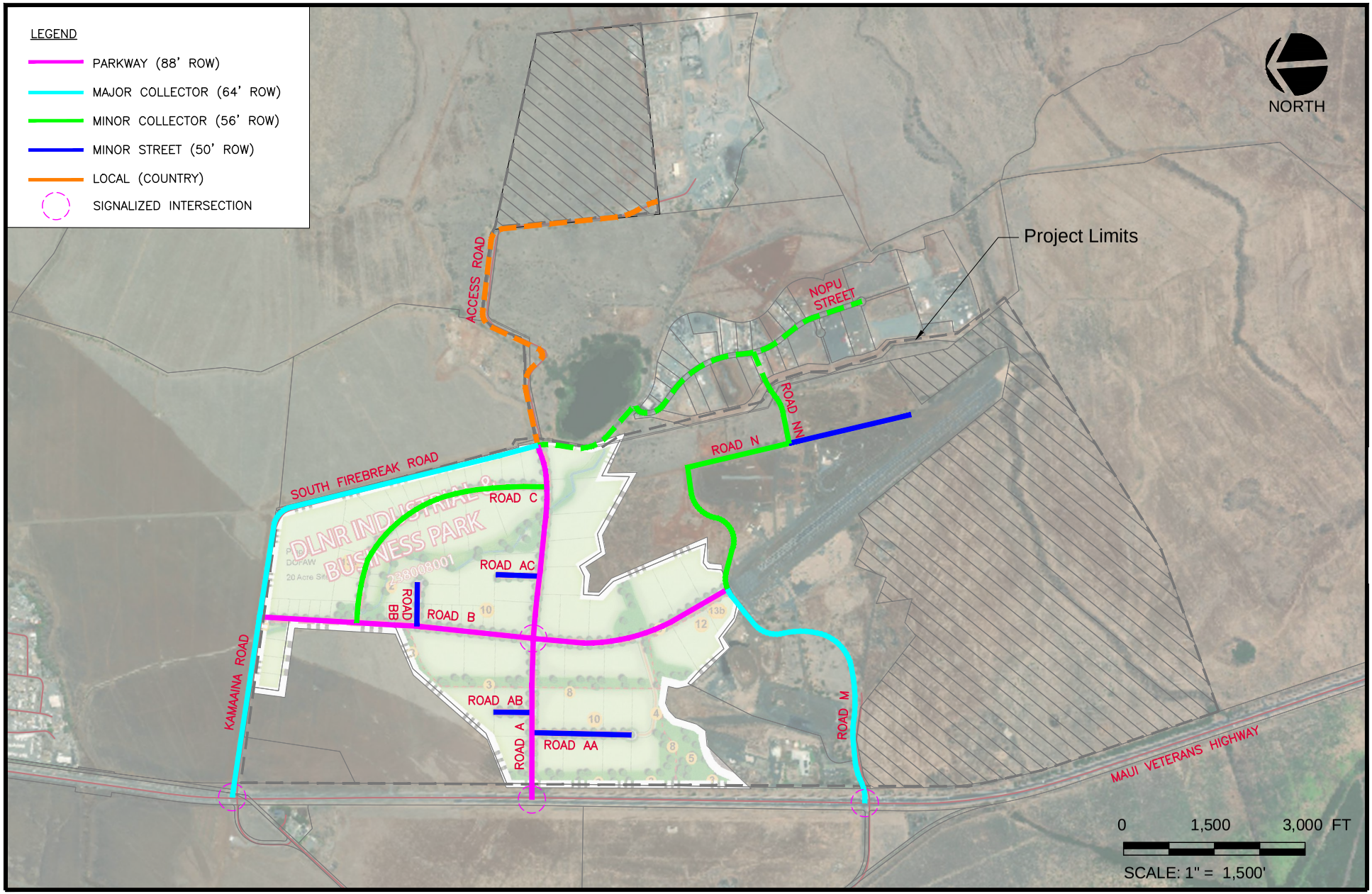

EXHIBIT A

FIGURE 3-1

ROADWAY MASTER PLAN

PULEHUNUI, MAUI, HAWAII

Kamaaina Road

Kamaaina Road serves as one of the access roadways to Maui Veterans Highway. This roadway is planned to serve as a major collector roadway through the Pūlehunui CDD providing east-west access as well as providing connections to Roads B and S. Firebreak Road. Through the project area, Kamaaina Road is planned for a 64' right-of-way that includes provisions for two travel lanes, bike lanes within the roadway, 7' parking lanes, and 3' planting strips with 6' sidewalks on both sides (see Figure 3-2).

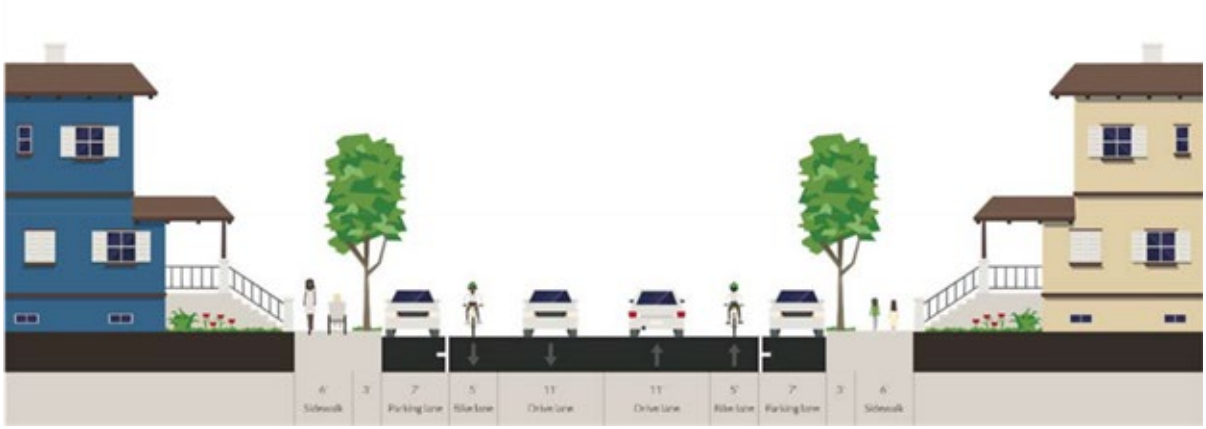

Figure 3-2 Kamaaina Road Typical Section

S. Firebreak Road

The segment of S. Firebreak Road between Kamaaina Road and Nopu Street is planned to serve as a major collector roadway along the east end of the Pūlehunui CDD facilitating north-south access. In addition, S. Firebreak Road will provide connections to Nopu Street and the future Road A. Through the project area, S. Firebreak Road is planned for a 64' right-of-way that includes provisions for two travel lanes, bike lanes within the roadway, 7' parking lanes, and 3' planting strips with 6' sidewalks on both sides (see Figure 3-3).

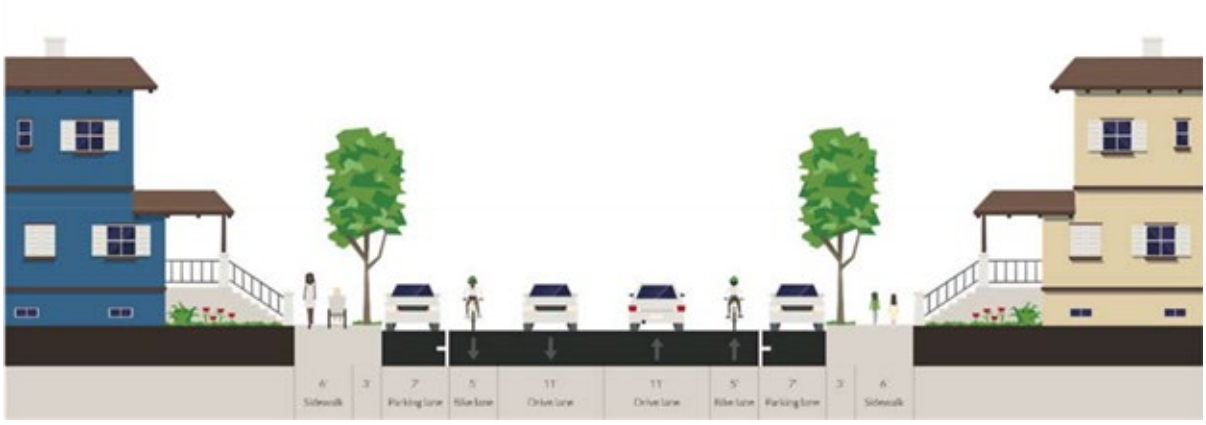

Figure 3-3 S. Firebreak Road Typical Section

Road M (Motor Sports Park Access Road)

Road M is planned to serve as a major collector roadway along the southern portion of the Pūlehunui CDD providing east-west access, as well as providing connections to Roads B and N. Through the project area, Road M is planned for a 64' right-of-way that includes provisions for two travel lanes, bike lanes within the roadway, 7' parking lanes, and 3' planting strips with 6' sidewalks on both sides (see Figure 3-4).

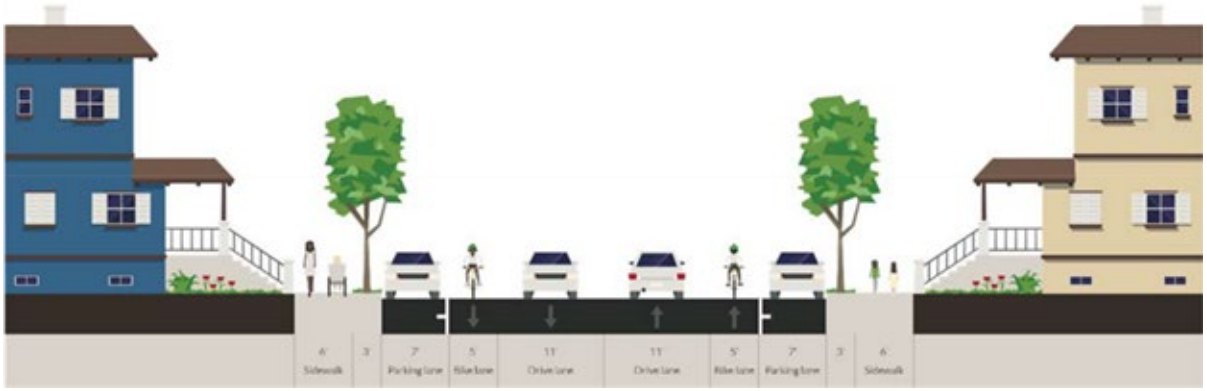

Figure 3-4 Road M Typical Section

Road N

Road N is planned to serve as a minor collector roadway, starting north of the intersection of Road M and Road B intersection. Road N currently provides access to the existing Maui Go Karters Association and Maui Raceway Park. Through the project, Road N is planned for a 56' right-of-way that includes provisions for two travel lanes, 8' parking lanes on both sides, and 4' planting strips with 6' sidewalks on both sides (see Figure 3-5).

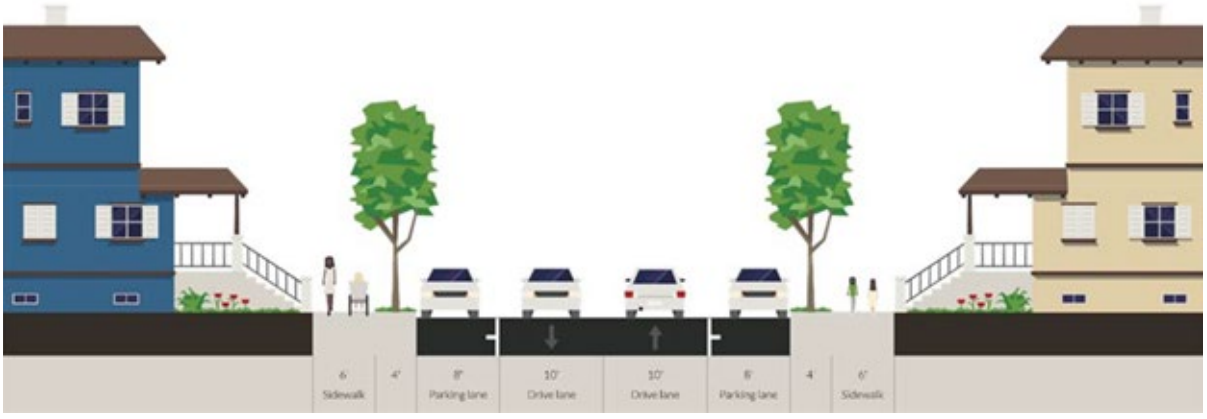

Figure 3-5 Road N Typical Section

Road A

Road A is planned to serve as one of the spine roadways through the Pūlehunui CDD and provide access to Maui Veterans Highway. Through the project area, Road A is planned for an 88' right-of-way parkway that includes provisions for two travel lanes in each direction separated by a 12' planting strip, bike lanes within the roadway, 2' planting strips on both sides, an 8' sidewalk on one side, and a 10' sidewalk on the other side(see Figure 3-6). Parkways are similar to arterials but have medians with narrower travel lanes, bike lanes, and wider sidewalks.

Figure 3-6 Road A Typical Section

Road B

Road B is planned as one of the main roadways through the Pūlehunui CDD serving as the north-south complement to Road A. Through the project area, Road B is planned for an 88' right-of-way parkway that includes provisions for two-travel lanes in each direction separated by a 12' planting strip, bike lanes within the roadway, 2' planting strips on both sides, an 8' sidewalk on one side, and a 10' sidewalk on the other side (see Figure 3-7).

Figure 3-7 Road B Typical Section

Road C

Road C is planned to serve as a minor collector that connects Road A and Road B. The roadway starts at the intersection with Road A generally oriented in north-south direction but transitions to

an east-west roadway as it approaches the intersection with Road B. Through the project, Road C is planned for a 56' right-of-way that includes provisions for two travel lanes, 8' parking lanes on both sides, and 4' planting strips with 6' sidewalks on both sides (see Figure 3-8).

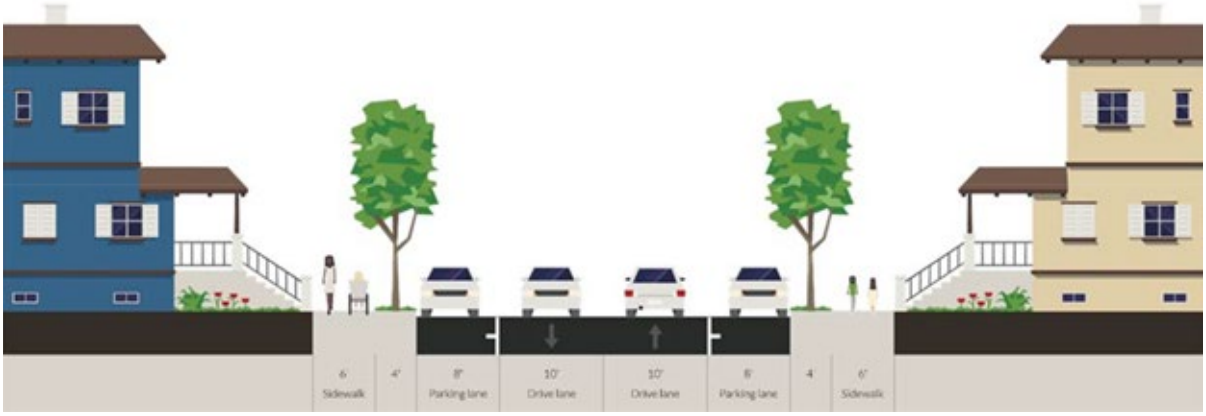

Figure 3-8 Road C Typical Section for 56' ROW

Roads AA, AB, AC, BB, NN

In addition to the aforementioned the collector roadways, the area roadway network is also planned to be comprised of minor streets referred to as Roads AA, AB, AC, BB, and NN. These streets are planned to have either a 44' or 50' right-of-way. The 44' right-of-way includes provisions for two travel lanes and 6' planting strips with 6' sidewalks on both sides (see Figure 3-9). The 50' right-of-way may include parking on one side of the roadway or on both sides of the roadway. A 50' right-of-way with parking on side of the roadway includes provisions for two travel lanes, an 8' parking lane, and 4' planting strips with 6' sidewalks on both sides (see Figure 3-10). A 50' right-of-way with parking on both sides of the roadway includes provisions for two travel lanes, 7' parking lanes on both sides of the roadway, and 2' planting strips with 6' sidewalks on both sides (see Figure 3-11). The exact configuration of Roads AA, AB, AC, BB, and NN will be determined as the programming for the developments within Pūlehunui CDD progresses.

Figure 3-9 Road A Minor Street Typical Section, 44' ROW

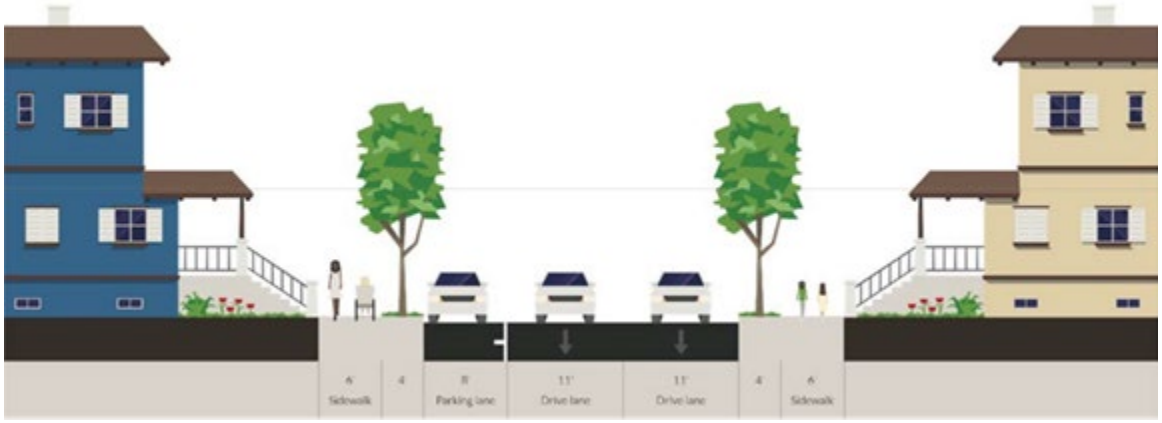

Figure 3-10 Road A Minor Street Typical Section, 50' ROW with parking on one side

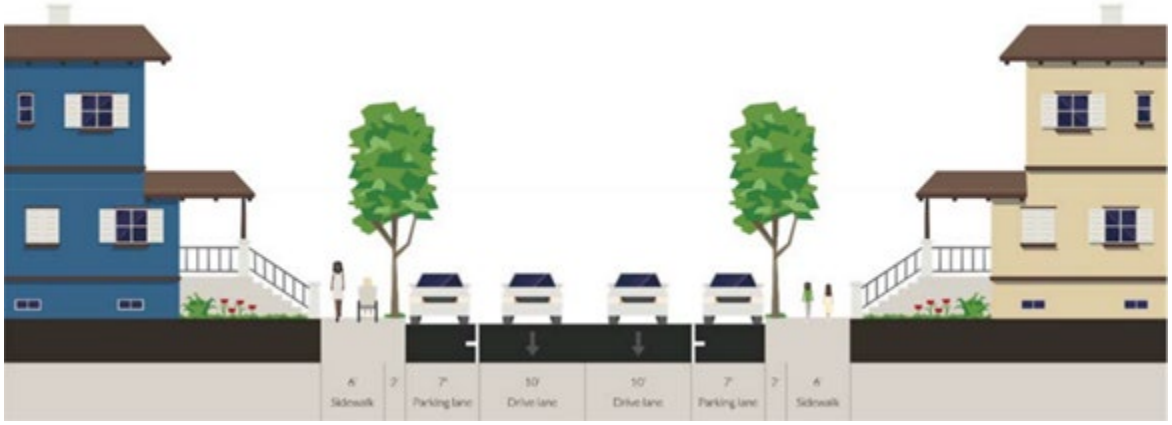

Figure 3-11 Road A Minor Street Typical Section, 50' ROW with parking on both sides

3.3.2 Multimodal Facilities

Pedestrian Facilities

Sidewalks are planned to be provided on both sides of all roadways within the project area. Roads A and B are planned to have 8' - 10' sidewalks on each side while Kamaaina Road, S. Firebreak Road, and Roads C, M, N, and NN are planned to have 6' sidewalks on each side. The remaining roadways within the project area are also planned to have 6' sidewalks on each side. The aforementioned widths are based on the typical widths provided in the County of Maui Street Design Manual. Figure 3- 12 shows the recommended pedestrian facilities through the Pūlehunui CDD.

Bicycle Facilities

A network of bicycle facilities is planned to be provided to safely and conveniently facilitate bike access to the various destinations within the Pūlehunui CDD and provide connections to the existing shared-use facility along Maui Veterans Highway. Consideration was given to the roadway context when determining the appropriate bicycle facility in conjunction with the proposed

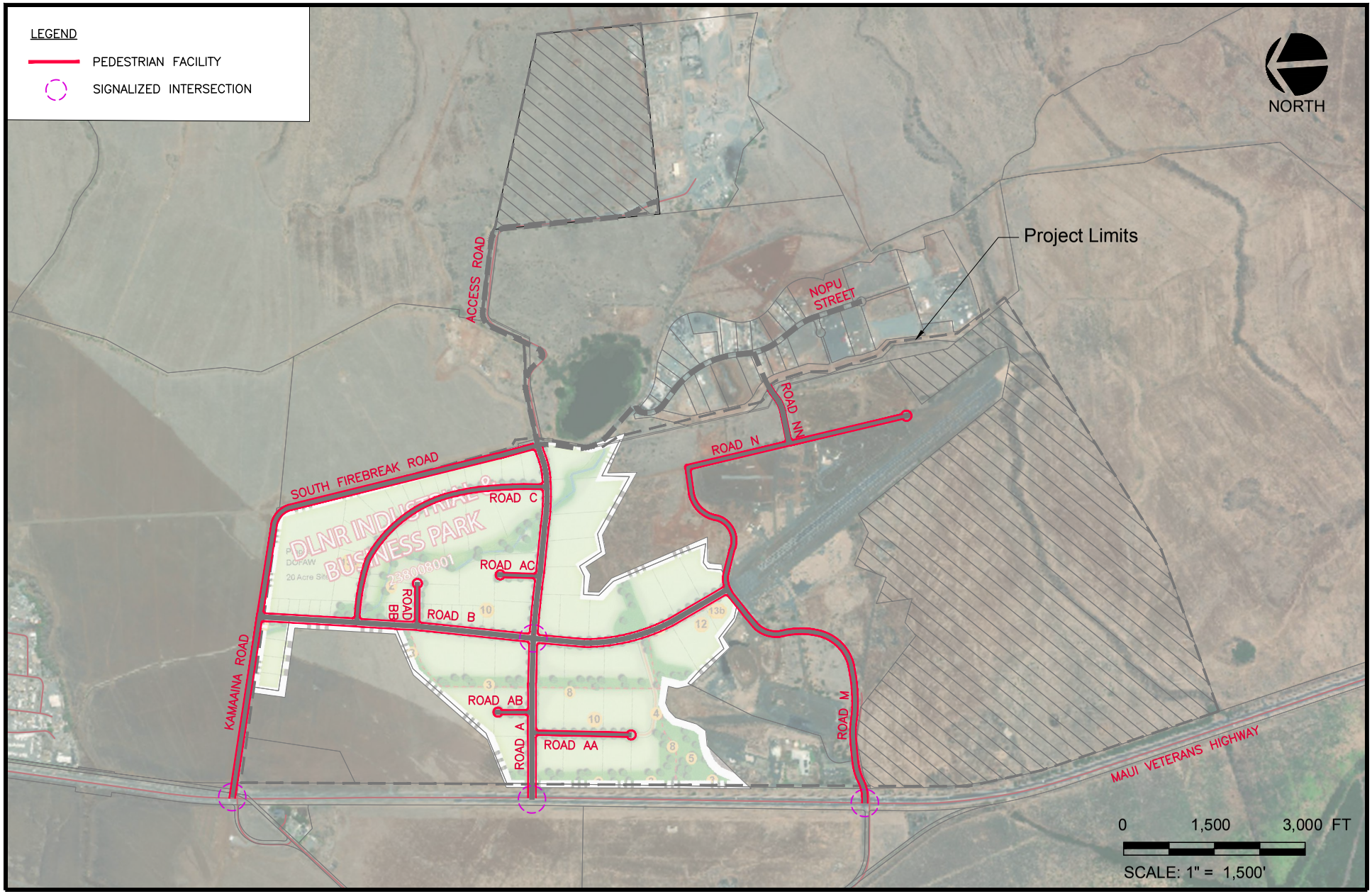

EXHIBIT A

FIGURE 3-12
PEDESTRIAN MASTER PLAN

WILSON OKAMOTO CORPORATION

PULEHUNUI, MAUI, HAWAII

roadway area roadway. As such, along the Roads A, B, and the portions of Kamaaina Road and Road M south of Road B, protected or buffered bike plans are planned to provide wider separation between vehicular and bicycle traffic given the higher anticipated traffic volumes and number of lanes along these roadways. Along the remaining portion of Kamaaina Street and S. Firebreak Road, bike lanes are recommended. At minimum, these bike lanes should be 5 feet width, though a width of 6 feet is preferred based on the guidance included in the County of Maui Street Design Manual. Figure 3-13 shows the proposed bike facilities planned for the proposed project.

Transit Facilities

The Pūlehunui CDD is expected to be serviced by Maui Bus, although the routes that are expected to service the development have not yet been established. As mentioned previously, there are currently no bus stops located in the vicinity of Pūlehunui CDD under existing conditions, although there are bus routes that travel through the Pūlehunui region along Maui Veterans Highway. The existing routes are expected to be modified to extend through the project site with bus stops planned along Roads A, B, M, and Kamaaina Road, as well along Maui Veterans Highway. Potential bus routes through the Pūlehunui CDD are shown in Figure 3-14. The bus stops have been spaced according to the Maui Bus Stop Planning Guide which suggests that bus stops should be spaced at intervals of less than 1,320 feet (about a quarter mile) in low density urban areas. It should be noted that the exact bus locations and route will be refined with coordination with the developments within the Pūlehunui CDD and County of Maui.

3.4 Phasing of Improvements

The aforementioned transportation improvements are expected to be implemented over a period of 15+ years with projects allocated to the following timeframes based on their ability to be implemented from a planning and regulatory standpoint (see Figure 3-15):

- Short-Term Improvements: to be implemented within the next 5 years
- Mid-Term Improvements: to be implemented between 5-15 years
- Long-Term Improvements: to be implemented in 15+ years

Short-Term Improvements

Short-term improvements are projects where there where improvements to existing facilities could be implemented to bring them up to County of Maui standards while furthering the goals of the overall Transportation Master Plan. Road M, Road N, and Road NN are existing roadways that provide access to the Puunene Army National Guard Armory and the Maui Raceway Park. These roadways are expected to continue to serve these uses as well as future development within the surrounding areas including the future Maui Veterans Home. In addition, they could collectively provide a secondary access route between Maui Veterans Highway and the industrial subdivision along Nopu Street. The recommended multi-modal improvements along these roadways are expected to be implemented in conjunction with the proposed roadway improvements. Improvements at the intersection of Road M and Maui Veterans Highway including the installation of a traffic signal system are also expected to be implemented in conjunction with the improvements to Road M.

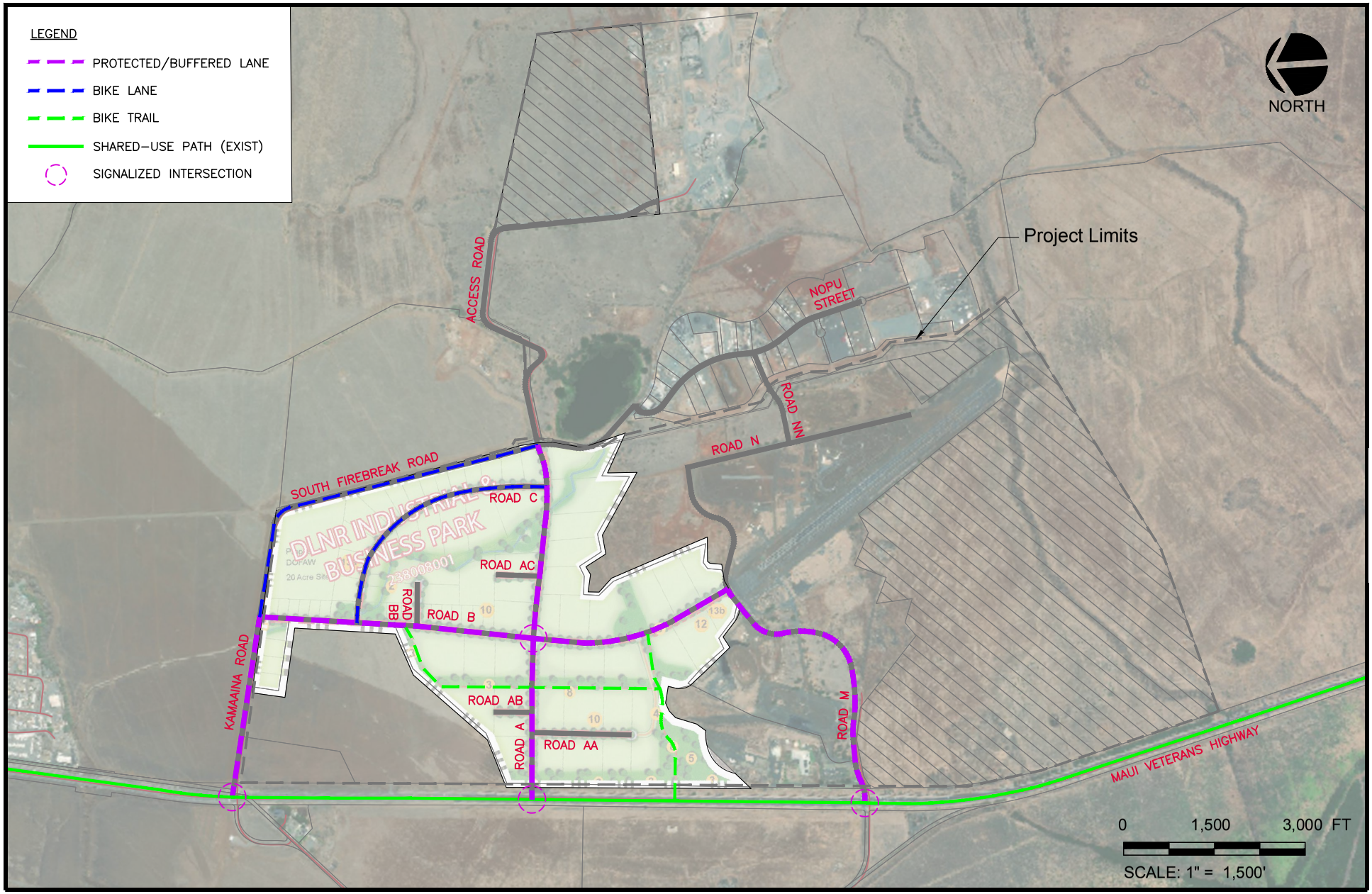

EXHIBIT A

FIGURE 3-13
BICYCLE MASTER PLAN

WILSON OKAMOTO CORPORATION

PULEHUNUI, MAUI, HAWAII

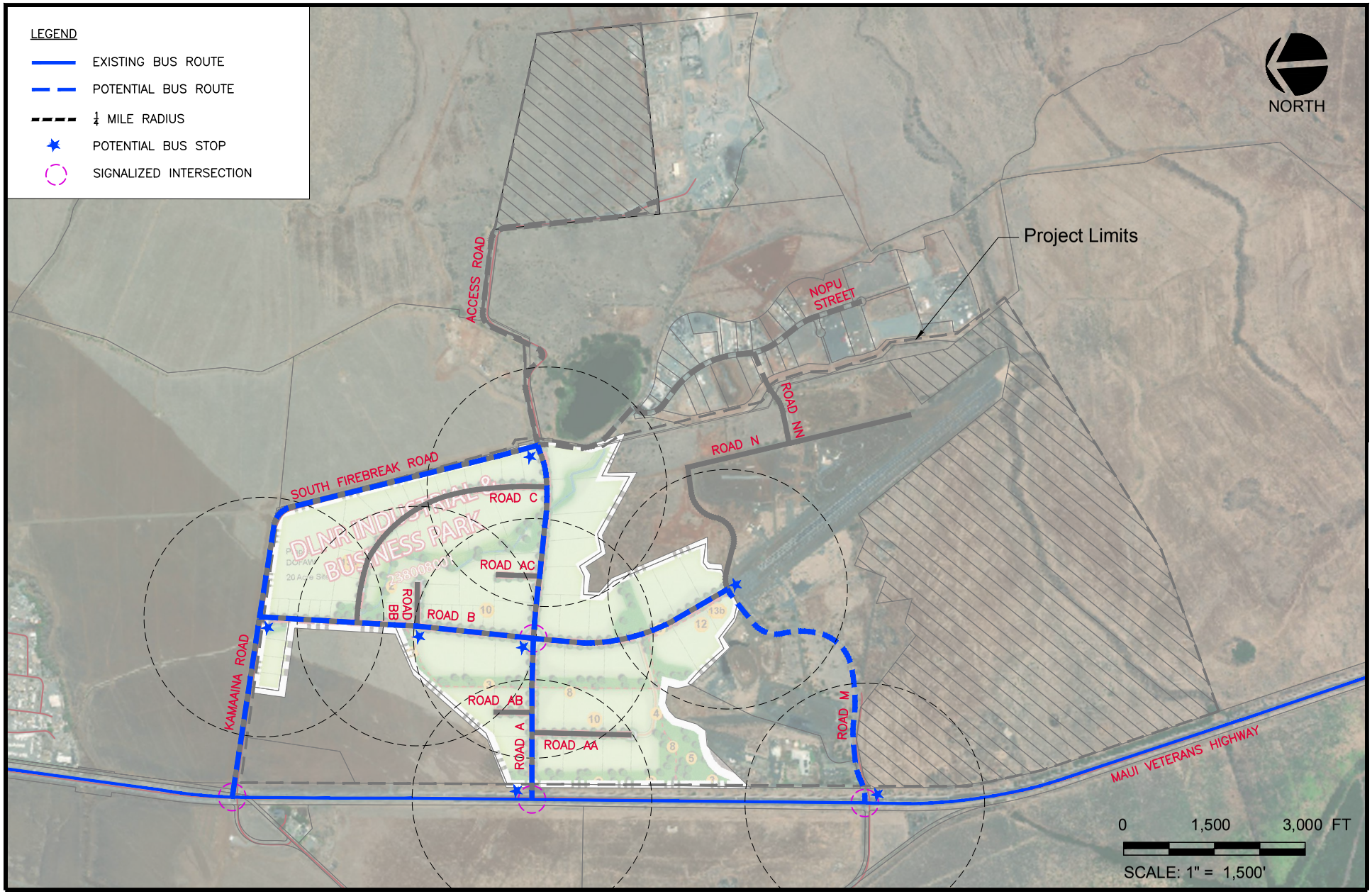

EXHIBIT A

FIGURE 3-14

TRANSIT MASTER PLAN

WILSON OKAMOTO CORPORATION

PULEHUNUI, MAUI, HAWAII

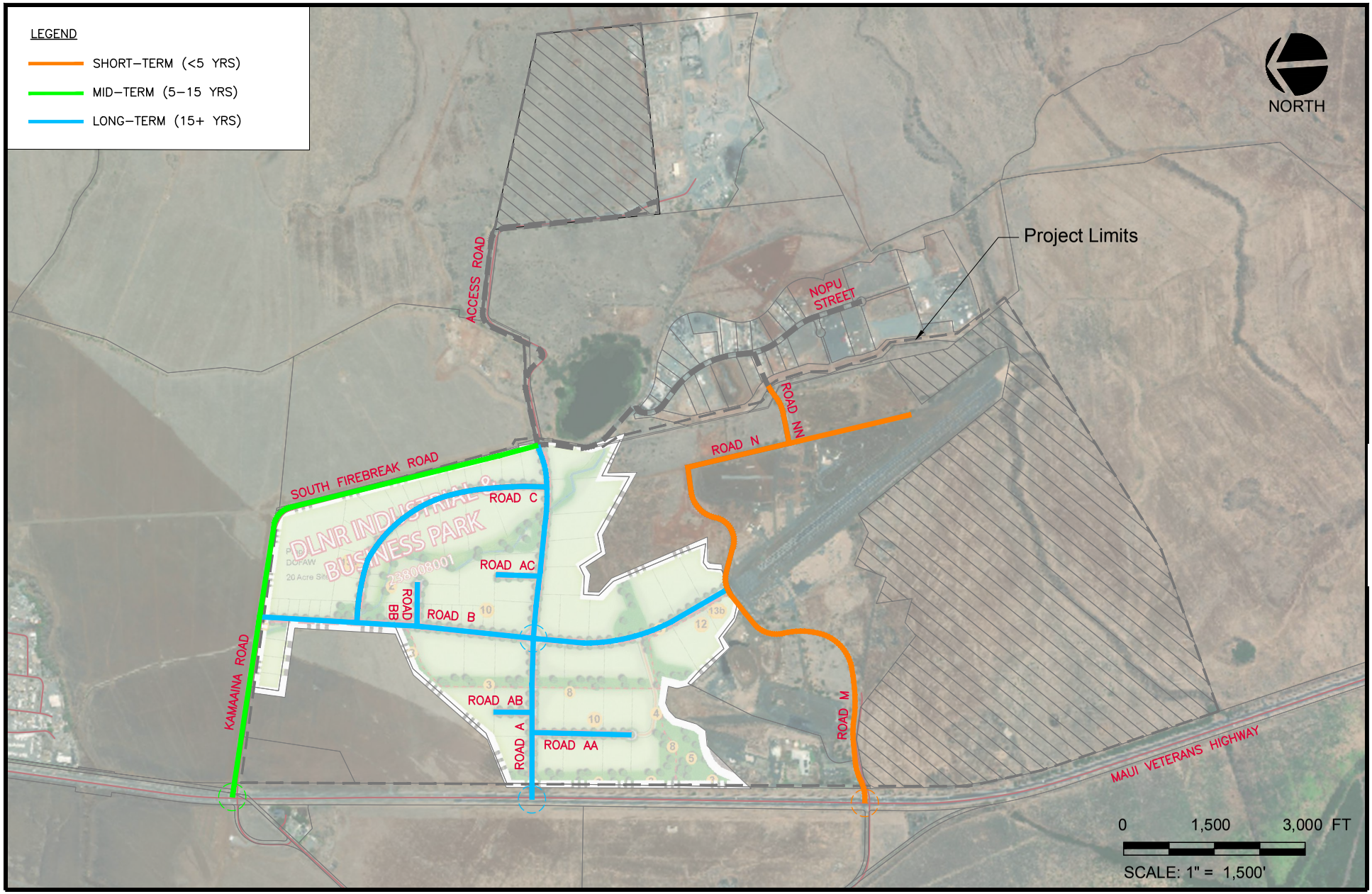

EXHIBIT A

FIGURE 3-15

TRANSPORTATION IMPLEMENTATION PLAN

WILSON OKAMOTO CORPORATION

PULEHUNUI, MAUI, HAWAII

Mid-Term Improvements

Mid-term improvements are additional projects where improvements to existing facilities could be implemented to bring them up to County of Maui standards. With the provision of a secondary access route via Road M, Road N, and Road NN, anticipated improvements along Kamaaina Road and South Firebreak Road could be implemented to bring these existing roadways up to County of Maui standards. In addition, improvements at the intersection of Kamaaina Road and Maui Veterans Highway are also expected to be implemented in conjunction with the improvements to Kamaaiana Road.

Long-Term Improvements

Long-term improvements are future planned roadway projects that support the goals of the overall Transportation Master Plan. These roadways include all of the roadways within the DLNR development which is still in the advance planning stages. Although the final location and alignment of these roadways may change as the development progresses, the provision of a spine road (Road A) and midlevel road (Road B) are critical for access and circulation within the Pūlehunui CDD. The recommended multi-modal improvements along these roadways are expected to be implemented in conjunction with the proposed roadway improvements.

Table 3-1 below summarizes the allocation of the anticipated projects into the defined timeframes with the listed project discussed in the preceding sections.

Table 3-1 Improvements Phasing

IMPROVEMENT	DESCRIPTION
Short-Term Improvements	
Road M (Maui Veterans Highway to Road B)	Improve to Maui County standards
Road M and Maui Veterans Highway Intersection Improvements	Modify to provide additional and/or extended turning lanes and install a traffic signal system.
Road M (Road B to Road N)	Improve to Maui County standards
Road N	Improve to Maui County standards
Road NN	Provide connection between Road N and stub out from connection to Nopu Street
Mid-Term Improvements	
Kamaaina Road	Improve to Maui County standards
Kamaaina Road and Maui Veterans Highway Intersection Improvements	Modify to provide additional and/or extended turning lanes including associated modifications to the existing traffic signal system.
S. Firebreak Road	Improve to Maui County standards
*Long-Term Improvements**	
Road A	New spine roadway through DLNR development
Road A and Maui Veterans Highway Intersection Improvements	New intersection with traffic signal system

**Note: Location and alignment pending finalization of master planning within DLNR development.*

Table 3-1 Improvements Phasing *Continued*	
IMPROVEMENT	**DESCRIPTION**
*Long-Term Improvements**	
Road B	New midlevel roadway Through DLNR development
Road A and Road B Intersection Improvements	Installation of a traffic signal system or alternate traffic control approach (i.e. roundabout)
Road C	New roadway
Road AA	New roadway
Road AB	New roadway
Road BB	New roadway
Road AC	New roadway

**Note: Location and alignment pending finalization of master planning within DLNR development.*

4.0 UTILITY ANALYSIS

4.1 Storm Drainage

4.1.1 Introduction

This report outlines the proposed storm drainage system improvements for the DLNR Industrial Business Park (DLNR-IBP) and adjacent lot, located at TMK 3-8-008:001. The storm drainage system is designed to support the development of TMK 3-8-008:001 by construction of retention or detention basins to capture and control the release of stormwater runoff produced within the site. The project will be implemented in stages and is subject to permitting, entitlement approvals, and funding availability.

4.1.2 Existing Conditions

There are no current storm drainage improvements that direct natural stormwater runoff within the project area. The project area is surrounded by Puulehu Gulch to the north, Kolaloa Gulch to the south, and Haiku Ditch to the east. There is also Camp 6 ditch which bisects the DLNR parcel (TMK 3-8-008:001). There are three pairs of double 24" drain lines that cross Maui Veterans Highway that convey stormwater runoff from the mauka side of the highway to the makai side of the highway. The general storm drainage flow pattern of the project site follows the slopes of the land in a general southwest direction which ultimately flows towards Kealia Pond and Pacific Ocean. Flow patterns can be seen in Figures 4-1 and 4-2.

4.1.3 Estimated Storm Drainage Calculations

The inherent nature of developments will add impervious surfaces such as asphaltic concrete (AC) roadways, sidewalks, buildings, parking areas, etc. which prevent natural infiltration of rainfall. This causes additional stormwater runoff that would exit the development sites and affect downstream properties. To prevent adverse effects downstream, basins to collect excess stormwater are typically used for large projects. Other methods used to control the storage or release of stormwater runoff are Low Impact Development (LID) improvements such as bio-swales, vegetated swales, permeable paving, etc.

Drainage runoff rates and improvements for the proposed development were determined based on the Rules for the Design of Storm Drainage Facilities, County of Maui Standards, dated July 1995. The TR-55 methodology, with a 100-year, 24-hour rainfall intensity was utilized for this project as the total area studies have an area greater than 100-acres. To estimate the proposed basin sizes required to retain or detain the excess stormwater, a 70% impervious development was used. See Table 4-1 for a summary of the stormwater runoff due to the proposed project and Appendix A for calculations.

4.1.4 Proposed Improvements

4.1.4.1 Regional Detention Basin for DLNR Industrial Business Park (Project 1)

Project 1 utilizes the concept of the DLNR Industrial Master Plan and installs detention and/or retention basin(s) to capture the anticipated increase in stormwater runoff that the DLNR-Industrial Business Park (DLNR-IBP) will produce in the area immediate makai of South Firebreak Road. The proposed basin(s) would be installed in the lower elevation area of drainage basin P1A where

stormwater runoff will be directed via above ground vegetative swales or below ground infrastructure (See Figure 4-3). The volume of the basin(s) will be sized where the DLNR-IBP will install 70% impervious improvements (buildings, concrete, asphaltic concrete, etc.). Installing the basin(s) prior to the construction of the DLNR -IBP may allow the development to utilize the area more efficiently. Where individual lots within the DLNR-IBP exceed 70% impervious surfaces, the individual lots would be required to mitigate the additional runoff within their property.

Retention basin(s) located near Maui Veterans Highway would be able to utilize the existing 24" drain lines that allow for stormwater runoff to cross Maui Veterans Highway and match existing drainage conditions.

Table 4-1
Proposed Conditions Runoff Summary

Drainage Area	Area (Acres)	Existing Runoff (CFS)	Proposed Runoff (CFS)
DLNR Industrial Business Park P1A	86.00	65.37	249.95
DLNR Industrial Business Park P1B	194.00	147.46	563.83
Maui Veterans Home P2	10.00	7.60	29.06
Total	281.61	**214.05**	**818.45**

Note: See Appendix A for detailed stormwater calculations.

4.1.4.2 Regional Detention Basin for TMK: 3-8-008:001 (Project 2)

Project 2 installs a detention or retention basin to capture the anticipated increase in stormwater runoff that the proposed improvements will produce in the area below basin P1A and mauka of Maui Veterans Highway. The proposed basin would be installed in the lower elevation areas of drainage basin P1B where stormwater runoff will be directed via above ground vegetative swales or below ground infrastructure, as shown in Figure 4-3.

The volume of the basin will be sized where the property will install an assumed 70% impervious improvements (buildings, concrete, asphaltic concrete, etc.). Installing the basin(s) prior to the construction of future improvements may allow the development to utilize the area more efficiently. Where impervious improvements exceed 70% impervious surfaces, the property developer would be required to mitigate the additional runoff within the property.

A possible detention or retention basin could also be proposed for the future Maui Veterans Home facility. However, due to the limited overall area of this development, a more detailed stormwater runoff calculation should be determined as that project develops. Strategic planning and locating of the detention basin (P2) should be evaluated due to limited space.

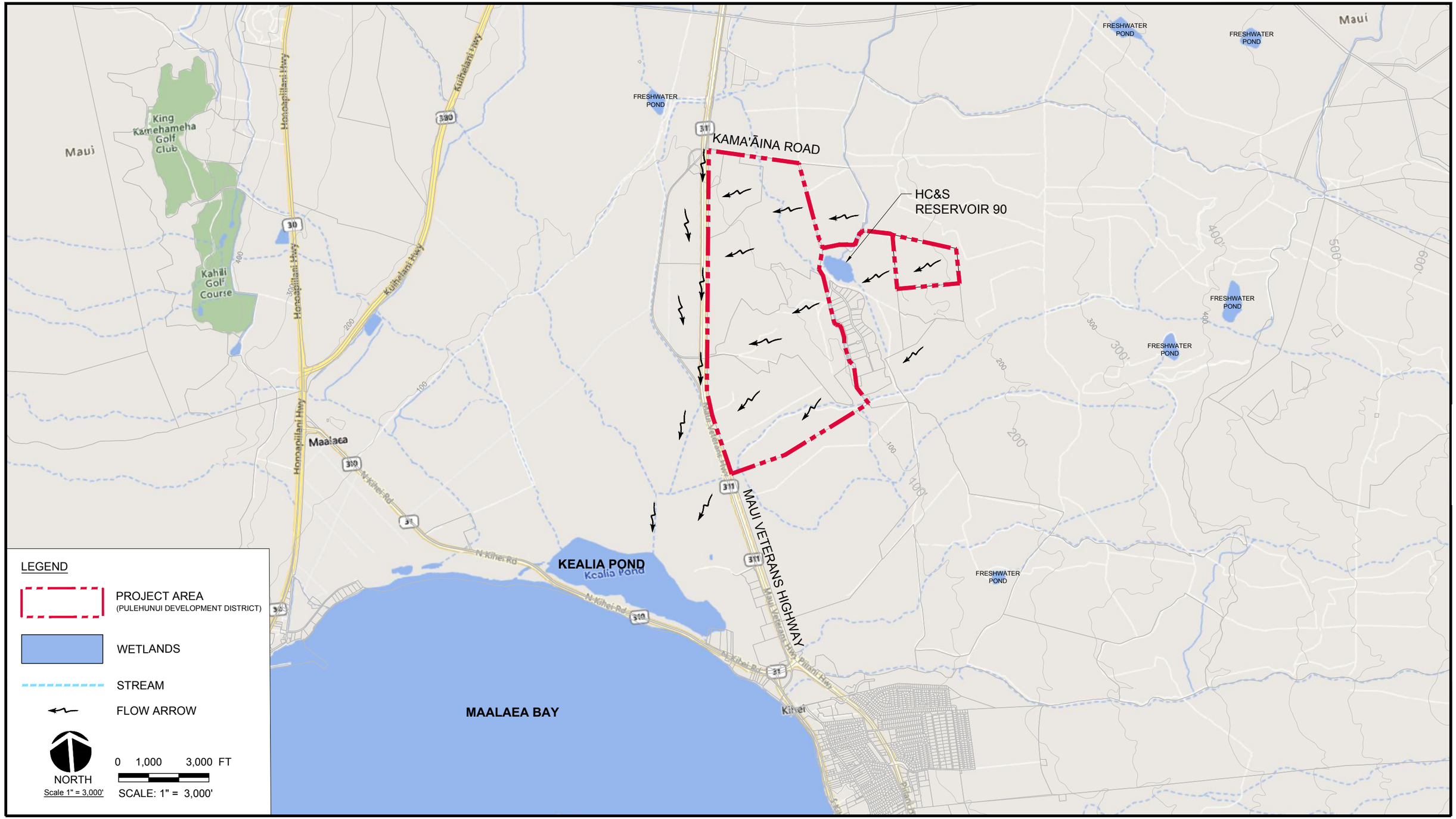

EXHIBIT A

FIGURE 4-1

OVERALL EXISTING STORM DRAINAGE SYSTEM

PŪLEHUNUI, MAUI, HAWAII

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LEGEND

PROJECT AREA
(PŪLEHUNUI COMMUNITY DEVELOPMENT DISTRICT)

STREAM

FLOW ARROW

EXISTING CULVERT PIPELINE

EXISTING BOX CULVERT

DRAINAGE BASIN LIMITS

NORTH
Scale 1" = 1,000'

0 500 1,000 FT
SCALE: 1" = 1,000'

HAIKU DITCH

HC&S RESERVOIR 90

SOUTH FIREBREAK ROAD

E1-A

E1-B

E2

CAMP 6 RESERVOIR DITCH

PUULEHU GULCH

KAMA'ĀINA ROAD

KOLALOA GULTCH

EXIST 2 X 24" CULVERT

EXIST 2 X 24" CULVERT

EXIST 2 X 24" CULVERT

EXIST 3 X 24" CULVERT AT RACEWAY PARK DR

EXIST 2 X 24" CULVERT AT MEHAMEHA LOOP

EXIST 4 X 24" CULVERT

EXIST 3 X 12' X 8' BOX CULVERT

EXIST 8 X 12' X 8' BOX CULVERT

DRAIN TO KEALIA POND

MAUI VETERANS HIGHWAY

Maui Veterans Hwy

Lower Kula Rd

200'

100'

EXHIBIT A

WILSON OKAMOTO CORPORATION

FIGURE 4-2

EXISTING STORM DRAINAGE SYSTEM

PŪLEHUNUI, MAUI, HAWAII

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LEGEND

- PROPOSED DETENTION BASINS
- STREAM
- FLOW ARROW
- EXISTING CULVERT PIPELINE
- EXISTING BOX CULVERT
- LAND ANTICIPATED TO REMAIN FALLOW
- EXISTING ROADWAYS
- DRAINAGE BASIN LIMITS

NORTH
Scale 1" = 1,000'

0 500 1,000 FT
SCALE: 1" = 1,000'

DLNR PROPERTY
238008001
SOUTH FIREBREAK RD
HAIKU DITCH
KOLALOA GULCH
EXISTING CAMP 6 RESERVOIR DITCH
HC&S RESERVOIR 90
SOUTH FIREBREAK ROAD
MAUI RACEWAY PARK
DLNR INDUSTRIAL & BUSINESS PARK
P1-A
PUULEHU GULCH
DETENTION BASIN #1
PROPOSED MAUI REGIONAL PUBLIC SAFETY COMPLEX (MRPSC)
238008037
238008038
DLNR PROPERTY
PROPOSED MAUI VETERANS HOME
EXIST 8 X 12' X 8' BOX CULVERT
P1-B
KAMA'ĀINA ROAD
MP CENTRAL
238008007
EXIST 2 X 24" CULVERT
DETENTION BASIN #2
EXIST 2 X 24" CULVERT
EXIST 2 X 24" CULVERT
NATIONAL GUARD ARMORY
P2
DETENTION BASIN #3
DRAIN TO KEALIA POND
DLNR PROPERTY
MAUI VETERANS HIGHWAY
EXIST 4 X 24" CULVERT
EXIST 3 X 12' X 8' BOX CULVERT

EXHIBIT A

WILSON OKAMOTO CORPORATION

FIGURE 4-3
PROPOSED DRAINAGE SYSTEM

PŪLEHUNUI, MAUI, HAWAII

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4.1.4.3 LID & Green Infrastructure Package (Project 3)

Project 3 is dependent on implementation with other projects. Low Impact Development (LID) improvements (bioswales, vegetated swales, rain gardens, permeable paving) would be installed along the new roads (See Appendix B). LID improvements ultimately increase the infiltration of the stormwater runoff produced by impervious surfaces. Utilizing infiltration will reduce stormwater runoff produced from the roadway, which will reduce the overall runoff that will need to be detained on-site. Additionally, pollutants, such as sediment, would be filtered through proposed LID improvements and reduce the pollutants downstream of the project site(s).

4.1.5 Budget Estimate

Project No.	Description	Estimated Cost (USD)
1	Detention Basin for DLNR Industrial Business Park	$64,632,000
2	Detention Basin for TMK 3-8-008:001	$28,566,000
3	Distributed Low Impact Development (LID) Improvements	$3,101,000
Total	Projects 1, 2 & 3	$96,299,000

Note: The cost estimates provided are based on preliminary calculations and may be subject to change based on detailed design and final contractor bids. See also Appendix D.

4.2 Sanitary Sewer System

4.2.1 Introduction

This section outlines the proposed sanitary sewer system improvements for the DLNR-IBP, located at TMK 3-8-008:001 and surrounding CDD. The wastewater system is designed to support phased development of the industrial park and may include gravity collection systems, pump stations with force mains, and a temporary decentralized wastewater treatment facility. The project will be implemented in stages and is subject to permitting, entitlement approvals, and funding availability.

4.2.2 Existing Conditions

The County of Maui Wastewater Reclamation Division (WWRD) does not have a sewer collection system or wastewater treatment facility near the project vicinity. The nearest wastewater facilities are located at the Wailuku-Kahului Reclamation Facility (WKRF) and Kihei Wastewater Reclamation Facility (KWRF). The WKRF is located approximately seven miles north of the Pūlehunui CCD. The design capacity at WKRF is 7.9 MGD, and WWRD has indicated it is almost at capacity, and no expansion is planned. The KWRF is located five miles south of Pūlehunui CDD, along Piilani Highway. The design capacity at KWRF is 8.0 MGD and estimated flow is currently 4.9 MGD.

However, WWRD has indicated that up to 7.0 MGD is already permitted. As such, there is a need to construct an independent wastewater system for the Pūlehunui CDD.[1]

4.2.3 Estimated Wastewater Flow Calculations

The estimated sewer demand was calculated using the County of Maui Wastewater Reclamation Division (WWRD) Wastewater Flow Standards and the criteria based upon the "Design Standards of the Department of Wastewater Management, dated July 1993". The projected average daily wastewater flow would be used to design and size the proposed wastewater system (See Table 4-2). An average daily flow of 618,000 gpd will be generated at full buildout.

Table 4-2
Estimated Wastewater Calculations Based on County Wastewater Flow Standards[1]

Land Use	Average Daily Demand (GPD)
DLNR-IBP	190,000
Maui Regional Public Safety Complex	170,000
Maui Raceway Park	13,000
Pūlehunui North	172,000
Pūlehunui South	72,000
Total	618,000

[1]Table 4-2 calculations obtained from "Preliminary Engineering Report, Pulehunui Regional Infrastructure Master Plan", prepared by Austin, Tsutsumi and Associates, October 2018.

4.2.4 Proposed Improvements

4.2.4.1 Gravity Sewer Collection System (Project 1)

Project 1 proposes a gravity sewer system with approximately 15,000 linear feet of 8-inch sewer piping to be installed throughout the DLNR-IBP. The alignment of the piping will be coordinated with existing roadways and proposed spine roads to ensure integration with the overall development plan. This system will facilitate sewer distribution to individual parcels within the business park as development progresses (See Figure 4-4). This project also includes manholes, fittings, and cleanouts. The collected sewer will be fed to the temporary decentralized WWTP (Project 2). The cost for this project is limited to construction within DLNR-IBP as future infrastructure development at adjacent parcels within Pūlehunui CDD are undetermined.

The project limitation is that installation is dependent on the progress of development in the business park and the completion of the pump station and force main systems.

[1] *Pūlehunui Preliminary Engineering Report, Austin, Tsutsumi and Associates, October 2018*

LEGEND

PROPOSED GRAVITY SEWER LINE

NORTH

Scale 1" = 1000'

0 500 1000 FT

SCALE: 1" = 1000'

DLNR PROPERTY

238008001

SOUTH FIREBREAK RD

SOUTH FIREBREAK ROAD

DLNR INDUSTRIAL & BUSINESS PARK

238008001

Proposed DOFAW 20 Acre Site

MAUI RACEWAY PARK

238008037

TEMPORARY WASTEWATER TREATMENT PLANT/FUTURE WWPS

238008038

(Proposed MRSPC)

PROPOSED MAUI VETERANS HOME

KAMA'ĀINA ROAD

MP CENTRAL

238008007

NATIONAL GUARD ARMORY

DLNR INDUSTRIAL AND BUSINESS PARK

DLNR PROPERTY

MAUI VETERANS HIGHWAY

EXHIBIT A

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FIGURE 4-4

PROPOSED GRAVITY SEWER COLLECTION SYSTEM

PŪLEHUNUI, MAUI, HAWAII

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4.2.4.2 Temporary Decentralized Wastewater Treatment Plant (Project 2)

A mid-range project would be a temporary on-site wastewater treatment facility would be installed to support early phases of development until the Central Maui WWRF (WWRF) is operational.

The plant would include:

- Operation and maintenance buildings
- Influent screening basin
- Sequencing batch reactor (SBR)
- Aerobic digester
- Equalization basin
- Injection well (subject to approved NPDES Permit)

The temporary WTP may be converted to a WPS if the permanent Central Maui WWRF is constructed and Project 3 is implemented.

4.2.4.3 Pump Station and Force Main (Project 3)

A long-range proposed project includes two pump station buildings with wet wells to convey wastewater from the gravity collection system (Project 1) of the DLNR-IBP to the future Central Maui Wastewater Reclamation Facility (WWRF). Approximately five miles of force main would connect the pump stations to the WWRF.

- Pump Station Locations:
    - Station 1: Convert the temporary WTP location (Figure 4-5) into a wastewater pump station (WWPS)
    - Station 2: Located along a cane haul road between Maui Veterans Highway and Kuihelani Highway (Figure 4-5)
- Force Main Alignment:
    - Routed along the cane haul road, Maui Veterans Highway, and west of Kuihelani Highway to the WWRF (Figure 4-5)
    - Project Limitation: Entitlement and permitting process for finalizing force main alignment

This project would be the preferred improvement as WWRD would operate and maintain this wastewater treatment facility. WWRD is open to DLNR-IBP and remaining Pūlehunui CDD connecting to this facility (See Figure 4-5). Central Maui WWRF needs to be completed prior to Project 3 implementation.

4.2.5 Budget Estimate

Temporary Decentralized WWTP

Project No.	Description	Estimated Cost (USD)
1	8-inch Gravity Sewer Collection System (15,000 LF)	$13,500,000
1	Sewer Manholes	$2,880,000
2	Temporary Decentralized WWTP	$31,647,000
Total	Projects 1 & 2	$48,027,000

Connection to Future Central Maui Wastewater Reclamation Facility (WWRF)

1	8-inch Gravity Sewer Collection System (15,000 LF)	$13,500,000
1	Sewer Manholes	$2,880,000
3	6-inch PVC Force Main (25,500 LF)	$22,950,000
3	Pump Stations (2 buildings with wet wells)	$7,320,000
Total	Projects 1 & 3	$46,650,000

Note: The cost estimates provided are based on preliminary calculations and may be subject to change based on detailed design and final contractor bids. See also Appendix D.

4.2.6 Environmental Considerations

The project will undergo appropriate environmental reviews under Chapter 343, Hawaii Revised Statutes. Key environmental considerations will include:

- **Wetlands and Drainage:** The force main alignment will avoid sensitive wetlands and natural drainage channels. A stormwater management plan will be developed.
- **Cultural and Archaeological Resources:** Pre-construction surveys will be conducted in coordination with SHPD to avoid or mitigate impacts to cultural or historical resources.

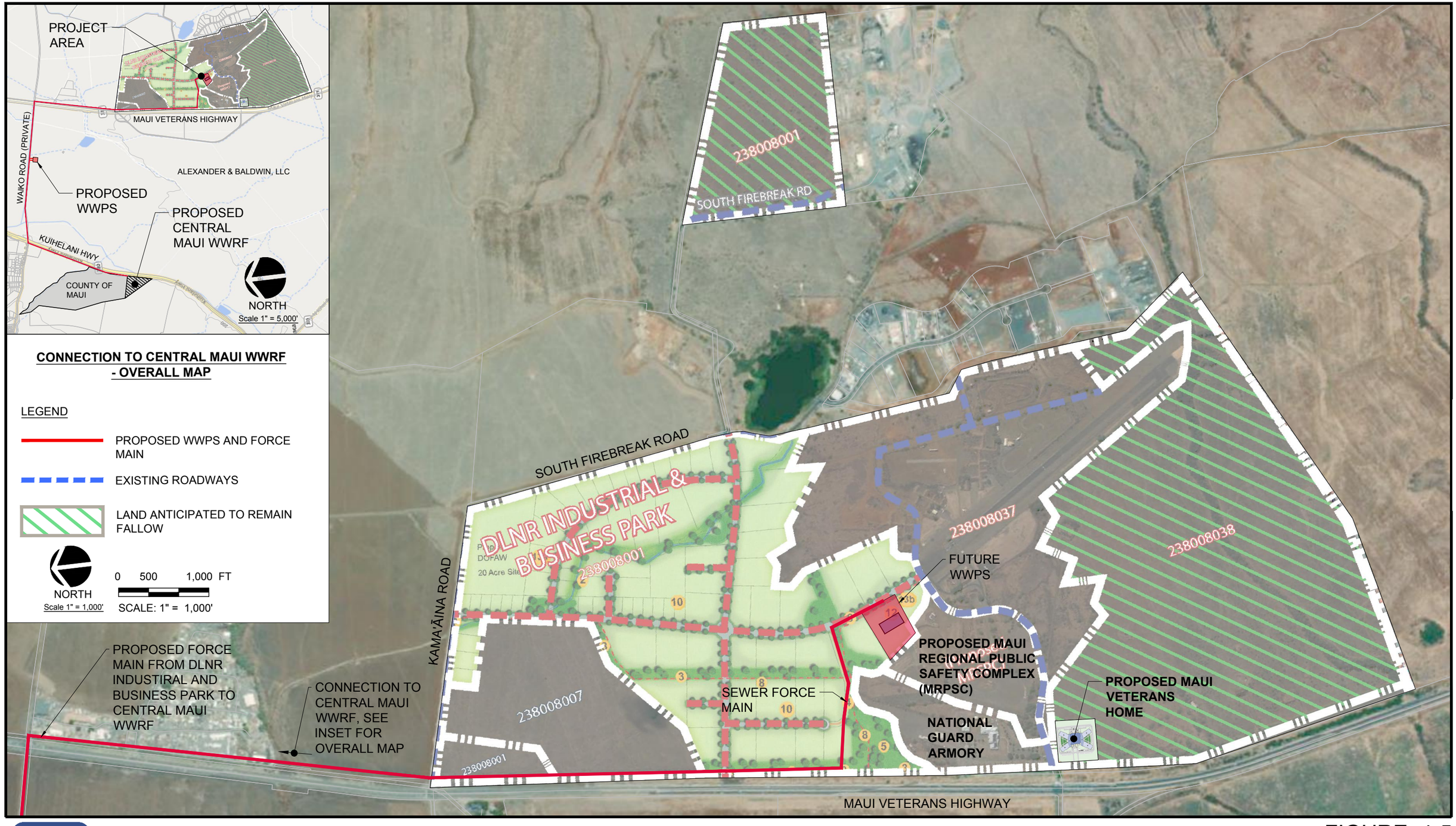

EXHIBIT A

FIGURE 4-5

PROPOSED PUMP STATION AND FORCE MAIN SYSTEM

WILSON OKAMOTO CORPORATION

PŪLEHUNUI, MAUI, HAWAII

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- **Groundwater Protection:** The injection well associated with the temporary WWTP will be designed to comply with all Department of Health Underground Injection Control (UIC) regulations.
- **Noise and Air Quality:** Construction activities will follow County and State guidelines to minimize dust, noise, and emissions during work hours.
- **Long-Term Sustainability:** The use of a sequencing batch reactor and aerobic digestion promotes energy-efficient and effective wastewater treatment with minimal environmental impact.

4.2.7 Summary

The DLNR-IBP sanitary sewer system is a vital infrastructure project to support current and future development. With a phased approach involving interim treatment solutions and long-term conveyance to the Central Maui WWRF, the plan provides flexibility, regulatory compliance, and sustainability. While entitlement and permitting pose certain limitations, proactive planning and design will ensure timely and responsible delivery of wastewater infrastructure to meet the growing demands of the area.

At HCDA's direction, Carollo Engineers will supplement this Infrastructure Master Plan with additional technical studies to support advancement of the project toward future implementation. These would include evaluation of long-term water sourcing and reuse; using R-1 recycled water to support irrigation demands in the Pulehunui area. As well as infrastructure to support the implementation with booster pumps, additional force main piping, and storage tank.

4.3 Water Supply System

4.3.1 Introduction

This section outlines the proposed water system infrastructure for the DLNR-IBP and the adjacent parcels within the Pūlehunui CDD. The system includes a range of components aimed at ensuring a reliable potable water supply for the ongoing and future development of these areas. The proposed water supply improvements will be discussed further in this section.

4.3.2 Existing Conditions

There is no existing water system distribution within the DLNR-IBP and a few transmission mains surrounding CDD. An existing Department of Water Supply (DWS) 8-inch waterline in Kamaaina Road provides water to the Hawaiian Cement parcel (TMK: 3-8-008:031), and 12-inch waterline connected to a 36-inch transmission main provides service for the Puunene Army National Guard Armory. Additionally, there are existing 8-inch, 12-inch, and 36-inch transmission mains located in Maui Veterans Highway (See Figure 4-6).

4.3.3 Estimated Water Demands

The estimated water demand was calculated using criteria from the DWS Water System Standards, dated 2002. The assumption is made that non-potable water will be utilized for landscaping or buffer areas. The projected max daily water demands would be used to design and size the proposed system (See Table 4-3). Estimated water demands using private water system calculations would result in 10% less average daily and max daily demands.

Table 4-3 Estimated Water Demand Based on DWS Water System Standards[1]		
Land Use	**Average Daily Demand (GPD)**	**Max Daily Demand (GPD)**
DLNR Industrial & Business Park	597,000	895,000
Maui Regional Public Safety Complex	152,000	227,000
Maui Raceway Park	18,000	27,000
Pūlehunui North	449,000	673,000
Pūlehunui South	144,000	215,000
Total	1,360,000	2,037,000

[1]Table 4-3 calculations obtained from "Preliminary Engineering Report, Pulehunui Regional Infrastructure Master Plan", prepared by Austin, Tsutsumi and Associates, October 2018. See Appendix C for detailed calculations.

4.3.4 Proposed Improvements

Competing water needs and limited supply are critical factors in evaluating water resource management in Maui. Collaboration with DWS and other stakeholders, as well as consideration for current rules and regulations outlining where and how water can be sourced for potable and non-potable water needs, is essential to create innovative solutions for water resource management.

Water resilience may come from a single source or multiple sources that, when used in combination, allow development of the Pūlehunui CDD. The following improvement projects are options to consider as short- or long-term water resilience strategies to meet the CDD water demand needs.

4.3.4.1 Water Transmission Main & DWS Connection (Project 1)

Project 1 connects the DLNR-IBP to the existing DWS system within the project vicinity and allows DWS to supply water to the project. DWS would need to extend its service area to the CDD prior to connecting a new 12-inch water transmission main (approximately 3,000 linear feet) to connect the DLNR-IBP near the intersection of Kamaaina Road and Maui Veterans Highway (See Figure 4-7). This connection would supply water for potable, non-potable and fire protection purposes. A water allocation agreement with DWS will be required before this project can move forward. The determination of whether this connection would be temporary, serving only the DLNR-IBP, or a long-term solution to serve other parcels within the CDD is to be determined in agreement with DWS. The water transmission line will follow a route that coordinates with existing infrastructure to minimize disruption and optimize flow. Additional requirements would include a DWS meter connection. Dependent on system pressure and DWS requirements, possible inclusions with this project may include a storage tank, potable booster pump and fire booster pump stations. This project assumes no additional source water requirement by DWS. This project is desirable since DWS would adopt the system, and CDD would not have to maintain and operate a private water system.

4.3.4.2 Off-Site Groundwater Production Well Development in Haʻikū Aquifer (Project 2)

Project 2 assumes that DWS requires additional water source to connect to the DWS system. This alternative would require drilling and developing a new groundwater production well within the Haʻikū aquifer system. This alternative will involve well locating, exploratory drilling, and pump testing to determine the viability of the well for potable water production. If feasible, the well will be outfitted with necessary infrastructure to produce clean, potable water. Coordination with DLNR and other State or County agencies may be necessary to secure land for the well site and ensure compliance with environmental regulations. The Upcountry water system is currently not interconnected with the Central Maui water system. The challenge of this project would be agreements with DWS to determine logistics of transporting well sourced water into the Central Maui water system to serve CDD, water allocation and required pumpage of the new well. In addition, it is acknowledged that there is significant legal risk associated with developing a sourcing solution attached to the Haʻikū system, due to its ties / association to the East Maui Irrigation System, which is subject to ongoing litigation / contested case hearing review.

Specifically, the overall flow / capacity of the system is in question given the plaintiff's request to reduce diversions / intake and introduce streamflow restoration measures that would detract from system yields.

Project 1 would also likely be implemented with Project 2 as existing water mains would be undersized to supply CDD. This alternative would only be implemented if a permanent potable water supply solution for the entire CDD is desired. This project will not be implemented on a temporary or partial-supply basis. An agreement with stakeholders within CDD would be required to share well development costs and determine water allocation for stakeholders. Additional construction would include a transmission line to connect the new production well to an existing DWS storage tank in the Central Water System, then routed to CDD. A cost-benefit analysis should be conducted to determine whether this option is suitable, as the transmission mains will need to be extended from the Haiku well site (within DWS Upcountry water system), to the DWS Central Water System (See Figure 4-8). Similarly to Project 1, these improvements would be dedicated to DWS and CDD would not be required to maintain and operate the system. However, this project has significant uncertainty with respect to implementation timeframes as it relates to off-site storage tank and new source development requirements.

4.3.4.3 Water Distribution Piping within DLNR Industrial Business Park (Project 3)

Project 3 proposes water system distribution within DLNR-IBP, approximately 22,000 linear feet of 8-inch potable water distribution piping will be designed and constructed. The alignment of the piping will be coordinated with existing roadways and proposed spine roads to ensure seamless integration with the overall development plan. This system will facilitate water distribution to individual parcels within the business park as development progresses (See Figure 4-7). This project also includes valves, fittings, and fire hydrants. The cost for this project is limited to construction within DLNR-IBP as well as service to the proposed Maui Veteran's Home facility. other future infrastructure development at adjacent parcels within CDD are not included. This project relies on the certainty of the future CDD roadway and subdivision layout. Implementing water distribution infrastructure will be required at some point in CDD, however, only if a level of certainty can be ensured. Project 3 may be implemented as a stand-alone project if funds are available.

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LEGEND

EXISTING 8" POTABLE WATERLINE

EXISTING 12" POTABLE WATERLINE

EXISTING 18" POTABLE WATERLINE

EXISTING 36" POTABLE WATERLINE

NORTH

0 500 1,000 FT

SOUTH FIREBREAK ROAD

MAUI RACEWAY PARK

DLNR PROPERTY

DLNR PROPERTY

MAUI REGIONAL PUBLIC SAFETY COMPLEX (MRPSC)

MP CENTRAL

KAMA'ĀINA ROAD

DLNR PROPERTY

NATIONAL GUARD ARMORY

EXISTING 12" WATERLINE

TO KIHEI

MAUI VETERANS HIGHWAY

EXISTING 8" WATERLINE

EXISTING 12" WATERLINE

EXISTING 36" CMWTS WATERLINE

EXISTING 12" WATERLINE

EXISTING 18" KWDP WATERLINE

FROM WAILUKU

EXHIBIT A

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FIGURE 4-6

EXISTING WATER SUPPLY SYSTEM

PŪLEHUNUI, MAUI, HAWAII

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LEGEND

EXISTING POTABLE WATERLINE

PROPOSED POTABLE AND FIRE WATERLINE

NORTH

Scale 1" = 1,000'

0 500 1,000 FT

SCALE: 1" = 1,000'

SOUTH FIREBREAK ROAD

DLNR INDUSTRIAL AND BUSINESS PARK

DLNR INDUSTRIAL & BUSINESS PARK

238008001

MAUI RACEWAY PARK

238008037

238008038

DLNR PROPERTY

MAUI REGIONAL PUBLIC SAFETY COMPLEX (MRPSC)

NATIONAL GUARD ARMORY

MP CENTRAL

238008007

DLNR PROPERTY

KAMA'ĀINA ROAD

MAUI VETERANS HIGHWAY

CONNECT TO EXISTING DWS WATER SYSTEM

EXISTING 8" WATERLINE

EXISTING 12" WATERLINE

MAUI VETERANS HOME

EXISTING 36" CMWTS WATERLINE

EXISTING 12" WATERLINE

EXISTING 18" KWDP WATERLINE

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FIGURE 4-7

PROPOSED WATER SYSTEM CONNECTION TO DWS SYSTEM

PŪLEHUNUI, MAUI, HAWAII

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4.3.4.4 Off-Site / Adjacent Brackish Well Development (Project 4)

Project 4 consists of a groundwater production well which would be developed on State-controlled lands within or adjacent to the Pūlehunui CDD. Like the well drilling at Haʻikū Aquifer (Project 2), this project will involve well locating, exploratory drilling, and pump testing, with the aim of establishing a reliable water source. Coordination with DLNR and other relevant State agencies may be required for land access and regulatory approvals. For this project, it is assumed that slightly brackish water would be encountered near the project area. At least four (4) wells drilled at depths of approximately 160 feet would be required to supply brackish water for RO processing. Seventy percent (70%) of the brackish water pumped by the wells would be converted to potable water. The project proposes installing four pumps rated at 250-gpm each for a total pumpage of 1000-gpm. The pumped 1000-gpm will net 700 gpm from the RO plant.[2] This would be sufficient to meet the projected demands for the DLNR-IBP (See Figures 4-9 to 4-11). Additional space requirements can be provided for future wells and future treatment trains within the RO plant, to accommodate future expansion as more parcels are developed in CDD. An agreement with interested stakeholders within CDD could be made to share development costs and plan for future expansion of the wells and RO plant. Or this project could be stand-alone for only DLNR-IBP. Project 4 would only be implemented if DWS will not allow any water service to CDD. This project will not be implemented on a temporary basis. Additional projects which would be implemented with Project 4, include Project 3 and Project 4A. However, this project has significant uncertainty with respect to implementation timeframes as it relates to new source development requirements within Kahului and Paia aquifer systems. Current CWRM reported water use of both freshwater and brackish withdrawals from Kahului and Paia Aquifers indicate that they are exceeding the sustainable yield (See Table 4- 4). There are also associated development costs and recurring operation and maintenance to run a private water system which make this project less desirable.

Table 4-4
Water Withdrawals for Kahului and Paia Aquifer Systems[1]

Aquifer System	Sustainable Yield (MGD)	12-Month Moving Avg. as of October 2024 (MGD)
Kahului	1	5.9
Paia	7	7.4

[1]*Commission on Water Resource Management CWRM. 2024. Pumpage Data, Received from CWRM on 2024.*

4.3.4.5 Off-Site /Adjacent Reverse-Osmosis Plant (Project 4A)

If the brackish groundwater wells prove to be a viable source of treatable water, a reverse-osmosis (RO) plant could be developed on State-controlled lands. The RO plant will treat the raw water to make it suitable for drinking. Additionally, the project will include disposal wells for the wastewater concentrate produced by the RO process. This treatment plant will be critical to ensure that water quality meets potable water standards. Provisions within the RO plant to allow future expansion could be implemented if stakeholders within CDD are interested. Site coordination with DLNR and

[2] *Tom Nance Water Resource Memorandum to Munekiyo Hiraga, Austin Tsutsumi & Associates, August 14, 2017*

other State agencies may be necessary for permitting and construction. If interested, an agreement with stakeholders within CDD would be required to share development costs and determine water allocation. Additional projects which would be implemented with Project 4A, include Project 3, Project 4 and Project 5 (See Figures 4-10 & 4-11). The associated development costs and recurring operation and maintenance to run a private RO plant also makes this project less desirable.

4.3.4.6 Off-Site /Adjacent Potable Water Storage Tank and Booster Station(s) (Project 5)

To support the water demands of the Pūlehunui CDD and surrounding areas, a potable water storage tank with a capacity of 1.0 to 2.0 million gallons (MG) may need to be constructed. The tank will serve as the primary storage and pressure equalization facility for the system. Locating the tank will be coordinated with topography and the planned land use to ensure optimal water flow and accessibility.

In addition to the storage tank, a new 12-inch water transmission main (approximately 3,000 linear feet) will be constructed to connect the tank to the DLNR Industrial Business Park. Booster pump stations will be required to serve higher elevation zones. Similar to other components, coordination with DLNR and other agencies will be necessary to secure land and permits. An agreement with stakeholders within CDD would be required to share development costs and determine water allocation.

Project 5 may be required, regardless of which water source project is implemented for CDD. However, given the substantial estimated budget costs for this project, this project should be reviewed more as project information is developed and is not recommended at this time.

4.3.4.7 Water Metering and SCADA Control Vaults (Project 6)

To facilitate the management and monitoring of the water supply network, centralized metering and control vaults will be designed and installed at strategic locations throughout the Pūlehunui CDD. Each vault will include:

- Flow metering to measure water consumption
- Pressure sensors to monitor system pressure
- Provisions for SCADA integration, enabling Supervisory Control and Data Acquisition (SCADA) systems for remote monitoring and operational control

These vaults will play a critical role in maintaining efficient water distribution and ensuring real-time operational control, providing both flexibility and resilience to the water supply system. This project could be implemented as a stand-alone, as the water system infrastructure is installed and a better understanding of the overall system operation is made and is not recommended at this time.

4.3.5 Surface Water as a Source of Supply

Surface water supply involves connection to the EMI system, specifically from the Haʻikū Ditch due to its proximity to the Pūlehunui CDD (DHHL, 2018). This raw water would be stored in a new reservoir before being treated and distributed as either a non-potable or potable source of supply. This viability of this project is contingent upon resolution of water quality and / or quantity restrictions, in which case it may be necessary to source water from ditches further upstream

LEGEND

EXISTING WATERLINE

PROPOSED WATERLINE

NORTH
Scale 1" = 1500'

0 750 1500 FT
SCALE: 1" = 1500'

EXIST. 12-INCH DI PIPE

HANA HWY

INTERCONNECTING PIPELINE (APPROX. 3 MILES)

END OF CENTRAL MAUI WATER SYSEM

HOLOMUA ROAD

END OF UPCOUNTRY WATER SYSTEM

HAMAKUAPOKO RD

EXIST. 8-INCH DI PIPE

BALDWIN AVENUE

HAIKU ROAD

EXISTING DWS
100,000 GAL TANK
OF = 285.50'
FF = 267.00'

EXIST. 8-INCH DI PIPE

POSSIBLE WELL SITE IN HAIKU AQUIFER

POSSIBLE WELL SITE IN HAIKU AQUIFER

COUNTY OF MAUI

PROJECT AREA

HANA HWY

HALEAKALA HWY

MAUI VETERANS HWY

NORTH
Scale 1" = 20,000'

WELL SITE LOCATION IN HAIKU AQUIFER-OVERALL MAP

EXHIBIT A

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FIGURE 4-8

WELL SITE LOCATION IN HAIKU AQUIFER

PŪLEHUNUI, MAUI, HAWAII

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EXHIBIT A

FIGURE 4-9

PROPOSED LAYOUT FOR THE ONSITE BRACKISH WELLS AND RO PLANT

PŪLEHUNUI, MAUI, HAWAII

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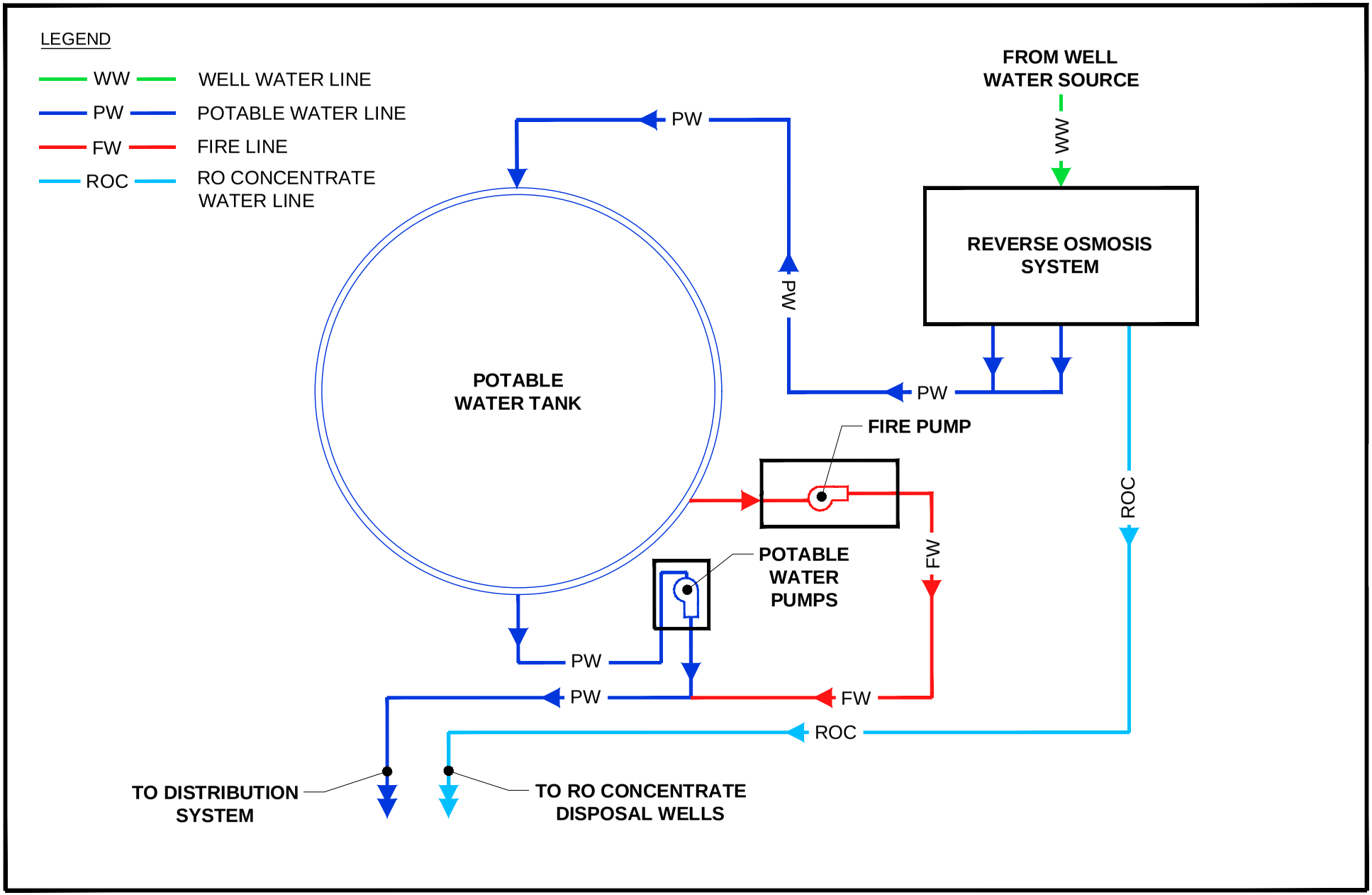

EXHIBIT A

WILSON OKAMOTO CORPORATION

FIGURE 4-10

PROPOSED REVERSE-OSMOSIS TREATMENT PLANT SYSTEM SCHEMATIC

PŪLEHUNUI, MAUI, HAWAII

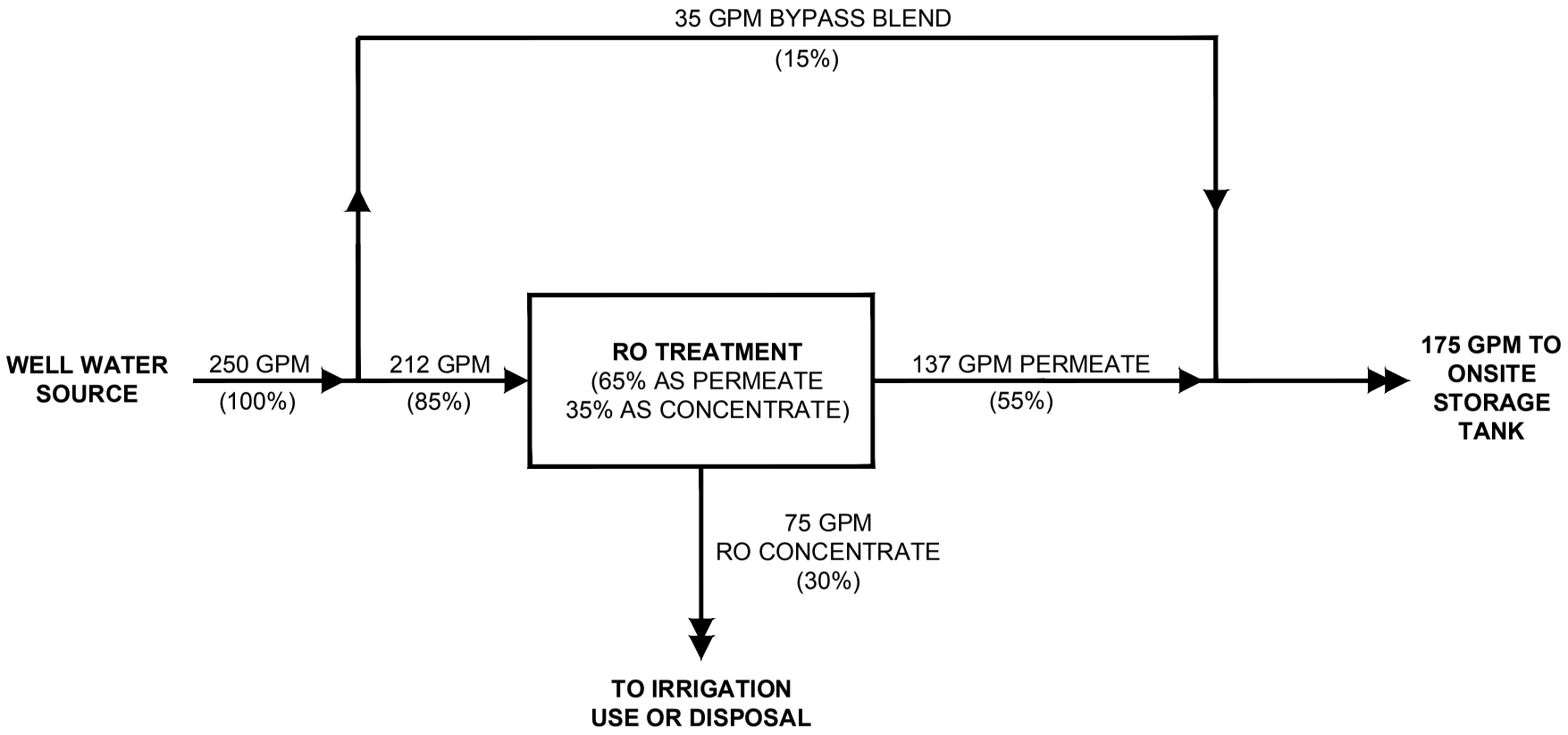

EXHIBIT A

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FIGURE 4-11

PRODUCTION BY EACH 250 GPM WELL AND RO TREATMENT TRAIN

PŪLEHUNUI, MAUI, HAWAII

(DHHL, 2018). Connection to the EMI system will require approximately 3 acres of land for WTP development (DHHL, 2018). This option is not recommended as the sole source of water development for the CDD due to the uncertainty of seasonal water availability in Haʻikū Ditch and competing surface water demands in by Mahi Pono and other entities. Moreover, there is significant risk associated with tapping into the EMI system given heightened opposition / litigation regarding the operation of the system as it utilizes state / public trust lands that are now subject to a forthcoming contested case hearing process. It is altogether possible that the current yield of the Haʻikū ditch could be reduced further as result of this contested case hearing, meaning that the overall Haʻikū system would face reduced capacity moving forward.

4.3.6 Surface Water Distribution for Non-Potable Water Supply

Using surface water as a non-potable supply will require the CDD to treat water as a non-potable water supply and supplement water demands. This requires separation between the non-potable and potable water systems or sufficient backflow protection to reduce the risk of contamination of the potable water system. A treatment facility for non-potable water supply systems involves the removal of particulates and bacteria prior to use and is expected to be significantly cheaper than potable water disinfection and treatment processes.

4.3.7 Budget Estimate

Potable Well Source Water System Infrastructure

Project No.	Description	Estimated Cost (USD)
1	Connection to Existing DWS System	$11,008,000
2	Off-Site Groundwater Production Well Development (Haiku Aquifer)	$74,012,000
3	Water Distribution Piping within DLNR Industrial Business Park	$62,440,000
5	Potable Water Storage Tank and Booster Pump Station(s)	$90,163,000
6	Water Metering and SCADA Control Vaults	$2,376,000
Total	Projects 1, 2, 3, 5 & 6	$239,999,000

Brackish Well Source Water System Infrastructure

Project No.	Description	Estimated Cost (USD)
3	Water Distribution Piping within DLNR Industrial Business Park	$62,440,000
4	Off-Site Groundwater Brackish Well Development (Pūlehunui)	$8,791,000
4A	Reverse-Osmosis Plant	$49,482,000
5	Potable Water Storage Tank and Booster Pump Station(s)	$90,163,000
6	Water Metering and SCADA Control Vaults	$2,376,000
Total	Projects 3, 4, 4A, 5 & 6	$213,252,000

Note: The cost estimates provided are based on preliminary calculations and may be subject to change based on detailed design and final contractor bids. See also Appendix D.

4.3.8 Environmental Considerations

The development of the water supply infrastructure will require careful consideration of environmental impacts. Key aspects include:

- **Water Source Protection:** Both the Haiku Aquifer and potential wells in the Pūlehunui CDD will undergo environmental reviews to ensure that the development of these water resources does not negatively impact groundwater quality or ecosystems.
- **Cultural and Archaeological Impact:** Pre-construction surveys will be conducted to assess and mitigate potential impacts to cultural and historical sites.
- **Sustainable Water Use:** The reverse-osmosis treatment plant and groundwater development will be designed to minimize water waste and ensure long-term sustainability, while meeting the potable water demand.
- **Wastewater Disposal:** The disposal wells for RO wastewater concentrate will be carefully sited to avoid any contamination of nearby groundwater sources.

4.3.9 Summary

The proposed water supply infrastructure for the DLNR Industrial Business Park and Pūlehunui CDD aims to ensure a sustainable and reliable potable water source for current and future development in the area. Through the comprehensive design and implementation of proposed water transmission mains, groundwater production wells, reverse-osmosis treatment, storage tanks, and SCADA systems, it may be possible for this project to provide the foundation for meeting the growing needs of the industrial park and surrounding districts. Coordination with relevant

agencies and adherence to environmental standards will be critical for the successful delivery of the system. The complete process to deliver water to CDD could take up to 3 to 4 years.

At HCDA's direction, Intera, Inc. will supplement this Infrastructure Master Plan with a regional hydrology overview, complete an aquifer-level assessment, and identify site-specific opportunities for future exploration. These technical studies will apply a defined set of regulatory and practical siting criteria to screen, evaluate, and rank aquifers and sub-regions with the greatest potential for future source development. Some of these criteria include policies and regulations of the Hawaii Water Commission on Water Resource Management and Maui County Department of Water Supply; siting wells to minimize the potential for ground contamination from historic or other sources; parcel size, shape and topography; susceptibility to saltwater intrusion; and land ownership and availability.

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5.0 ELECTRICAL

5.1 Mehameha Road Improvements (Maui Veterans Highway to Maui Raceway Park)

5.1.1 Existing Electrical (Power) Utilities

A joint utility pole line consisting of overhead distribution (12 kV), and telecommunications utility cables is located along the southern side of Mehameha Road between Maui Veterans Highway and the Puunene Army National Guard Armory. The utility pole line appears to serve only the Armory and does not continue along the remaining portion of Mehameha Road. The Mehamena Road pole line is served by overhead conductors extended from the existing joint pole line along Maui Veterans Highway.

5.1.2 Existing Telecommunications Utilities

Overhead telecommunications utility infrastructure in the area appears to generally follow the alignment of the HECO overhead distribution system along Mehamaha Road. Telecommunications utility service for the Puunene Army National Guard Armory is served from this joint pole line.

5.1.3 Proposed Electrical (Power) Utility Improvements

It is assumed that the electrical (power) utility connection point for Mehameha Road will be extended from the existing HECO overhead distribution system along Maui Veterans Highway. At this time it is not known whether HECO's existing 12 kV distribution system has sufficient capacity to support the future developments. New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be provided along the widened and improved Mehameha Road. Pad mounted transformers and pad mounted primary switches will be provided as needed to support the customers and loads along the road. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.1.4 Proposed Telecommunications Utility Improvements

New underground telecommunication infrastructure, consisting of ductlines and manholes/handholes, will be routed along Mehameha Road in a similar alignment as the new HECO underground infrastructure. Stubouts will be provided as needed to support future telecommunications utility services to customers along the road. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.1.5 Roadway Lighting

A roadway lighting system will be provided as required. Roadway lighting can either consist of continuous illumination along the entire length of roadway or illumination at intersections only. Coordination with the County of Maui, State and HECO may be required to determine whether the roadway lighting system will be an unmetered system, utilizing HECO-supplied light pole assemblies, luminaires and conductors or whether a metered system will be required. The roadway lighting system will consist of approximately 30-foot high streetlight pole assemblies with

transformer bases and bracket arms. Roadway lighting luminaires will be fully shielded, sources with less than 2% blue light content to conform to the County of Maui Outdoor Lighting Ordinance.

The underground lighting distribution system will consist of concrete encased, PVC Schedule 40 conduits and conductors. Lighting pullboxes will be provided where required for cable pulling and/or splicing.

5.2 Kamaaina Road Improvements

5.2.1 Existing Electrical (Power) Utilities

A joint utility pole line consisting of overhead distribution (12 kV), and telecommunications utility cables is located along the southern side of Kamaaina Road. The Kamaaina Road pole line is served by overhead conductors extended from the existing joint pole line along Maui Veterans Highway.

5.2.2 Existing Telecommunications Utilities

Overhead telecommunications utility infrastructure in the area appears to generally follow the alignment of the HECO overhead distribution system along Kamaaina Road.

5.2.3 Proposed Electrical (Power) Utility Improvements

It is assumed that a new electrical (power) utility connection point for the improved Kamaaina Road will be extended from the existing HECO overhead distribution system along Maui Veterans Highway. At this time it is not known whether HECO's existing 12 kV distribution system has sufficient capacity to support the future developments. New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be provided along the widened and improved Kamaaina Road. Pad mounted transformers and pad mounted primary switches will be provided as needed to support the customers and loads along the road. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.2.4 Proposed Telecommunications Utility Improvements

New underground telecommunication infrastructure, consisting of ductlines and manholes/handholes, will be routed along Kamaaina Road in a similar alignment as the new HECO underground infrastructure. Stubouts will be provided as needed to support future telecommunications utility services to customers along the road. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.2.5 Roadway Lighting

A roadway lighting system will be provided as required. Roadway lighting can either consist of continuous illumination along the entire length of roadway or illumination at intersections only. Coordination with the County of Maui, State and HECO may be required to determine whether the roadway lighting system will be an unmetered system, utilizing HECO-supplied light pole assemblies, luminaires and conductors or whether a metered system will be required. The

roadway lighting system will consist of approximately 30-foot high streetlight pole assemblies with transformer bases and bracket arms. Roadway lighting luminaires will be fully shielded, sources with less than 2% blue light content to conform to the County of Maui Outdoor Lighting Ordinance.

The underground lighting distribution system will consist of concrete encased, PVC Schedule 40 conduits and conductors. Lighting pullboxes will be provided where required for cable pulling and/or splicing.

5.3 North-South Parkway Road

5.3.1 Proposed Electrical (Power) Utility Improvements

New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be provided along the proposed new roadway. The new infrastructure could either be extended from the proposed, new underground infrastructure provided for either Kamaaina Road or Mehameha Road. If the Kamaaina Road underground utility infrastructure is not in place at completion of the North-South Parkway Road construction, the utility connection point will likely be at the existing joint pole line along Kamaaina Road. At this time it is not known whether HECO's existing 12 kV distribution system has sufficient capacity to support the future developments. Pad mounted transformers and pad mounted primary switches will be provided as needed to support the customers and loads along the road. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.3.2 Proposed Telecommunications Utility Improvements

New underground telecommunication infrastructure, consisting of ductlines and manholes/handholes, will be routed along the new roadway in a similar alignment as the new HECO underground infrastructure. Stubouts will be provided as needed to support future telecommunications utility services to customers along the road. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.3.3 Roadway Lighting

A roadway lighting system will be provided as required. Roadway lighting can either consist of continuous illumination along the entire length of roadway or illumination at intersections only. Coordination with the County of Maui, State and HECO may be required to determine whether the roadway lighting system will be an unmetered system, utilizing HECO-supplied light pole assemblies, luminaires and conductors or whether a metered system will be required. The roadway lighting system will consist of approximately 30-foot high streetlight pole assemblies with transformer bases and bracket arms. Roadway lighting luminaires will be fully shielded, sources with less than 2% blue light content to conform to the County of Maui Outdoor Lighting Ordinance.

The underground lighting distribution system will consist of concrete encased, PVC Schedule 40 conduits and conductors. Lighting pullboxes will be provided where required for cable pulling and/or splicing.

5.4 South Firebreak Road and Mehameha Road Improvements

5.4.1 Existing Electrical (Power) Utilities

The Kamaaina Road joint utility pole line consisting of overhead distribution (12 kV), and telecommunications utility cables continues along the southern and western sides of South Firebreak Road. There is no joint pole line along this portion of Mehameha Road.

5.4.2 Existing Telecommunications Utilities

Overhead telecommunications utility infrastructure in the area appears to generally follow the alignment of the HECO overhead distribution system along South Firebreak Road.

5.4.3 Proposed Electrical (Power) Utility Improvements

It is assumed that the improved South Firebreak Road will be served from the new underground infrastructure provided for Kamaaina Road in Project 1.2. Similarly, it is assumed that the improved Mehameha Road will be served from the new underground infrastructure provided by the Mehameha Road improvements project constructed in Project 1.1.

At this time it is not known whether HECO's existing 12 kV distribution system has sufficient capacity to support the future developments. New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be provided along the widened and improved South Firebreak Road and Mehameha Road. Pad mounted transformers and pad mounted primary switches will be provided as needed to support the customers and loads along the road. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor for each project will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.4.4 Proposed Telecommunications Utility Improvements

New underground telecommunication infrastructure, consisting of ductlines and manholes/handholes, will be routed along Kamaaina Road and Mehemeha Road in a similar alignment as the new HECO underground infrastructure. Stubouts will be provided as needed to support future telecommunications utility services to customers along the road. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor for each project will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.4.5 Roadway Lighting

A roadway lighting system will be provided as required. Roadway lighting can either consist of continuous illumination along the entire length of roadway or illumination at intersections only. Coordination with the County of Maui, State and HECO may be required to determine whether the roadway lighting system will be an unmetered system, utilizing HECO-supplied light pole assemblies, luminaires and conductors or whether the metered system will be required. The roadway lighting system will consist of approximately 30-foot high streetlight pole assemblies with transformer bases and bracket arms. Roadway lighting luminaires will be fully shielded, sources with less than 2% blue light content to conform to the County of Maui Outdoor Lighting Ordinance.

The underground lighting distribution system will consist of concrete encased, PVC Schedule 40 conduits and conductors. Lighting pullboxes will be provided where required for cable pulling and/or splicing.

5.5 Pump Station and Force Main for DLNR Industrial Business Park

5.5.1 Proposed Electrical (Power) Utility Improvements

New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be extended from HECO's 12 kV distribution infrastructure along a roadway closest to the pump station site. The anticipated service connection point to the HECO distribution system is not yet known as the location of the pump station has not been confirmed. A pad mounted transformer and pad mounted primary switch will be installed as needed to provide secondary electrical service for the pump station. The pad mounted transformer, pad mounted switch and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.5.2 Proposed Telecommunications Utility Improvements

New underground telecommunication utility infrastructure, consisting of ductlines and manholes/handholes, will be extended from Hawaiian Telcom and/or Charter Spectrum facilities along a roadway closest to the pump station site. Telecommunications utility service will be used to provide voice, communications, internet, SCADA, or other remote communications and monitoring connectivity for the pump station. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.5.3 Temporary Centralized Wastewater Treatment Plant For the DLNR Industrial Business Park

5.5.4 Proposed Electrical (Power) Utility Improvements

New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be extended from HECO's 12 kV distribution infrastructure along a roadway closest to the treatment plant site. The anticipated service connection point to the HECO distribution system is not yet known as the location of the treatment plant has not been determined. Pad mounted transformers and pad mounted primary switches will be installed as needed to provide secondary electrical services for the various buildings and process system equipment at the treatment plant. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.5.5 Proposed Telecommunications Utility Improvements

New underground telecommunication utility infrastructure, consisting of ductlines and manholes/handholes, will be extended from Hawaiian Telcom and/or Charter Spectrum facilities along a roadway closest to the treatment plant site. Telecommunications utility service will be used to provide voice, communications, internet, SCADA, or other remote communications and monitoring connectivity for the treatment plant. All telecommunications utility cables and

terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.6 Off Site/Adjacent Groundwater Production Well Development

5.6.1 Proposed Electrical (Power) Utility Improvements

New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be extended from available HECO 12 kV distribution infrastructure closest to the production well site(s). The anticipated service connection point to the HECO distribution systems is not yet known as the locations of the well site(s) have not been determined. Pad mounted transformers and pad mounted primary switches will be installed as needed to provide secondary electrical services for the well pumps and other supporting equipment. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.6.2 Proposed Telecommunications Utility Improvements

New underground telecommunication utility infrastructure, consisting of ductlines and manholes/handholes, will be extended from Hawaiian Telcom and/or Charter Spectrum facilities closest to the production well site(s). Telecommunications utility service will be used to provide voice, communications, internet, SCADA, or other remote communications and monitoring connectivity for the wells. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.7 Off Site/Adjacent Reverse Osmosis Plant

5.7.1 Proposed Electrical (Power) Utility Improvements

New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be extended from available HECO 12 kV distribution infrastructure closest to the reverse-osmosis plant. The anticipated service connection point to the HECO distribution system is not yet known as the location of the plant has not been determined. Pad mounted transformers and pad mounted primary switches will be installed as needed to provide secondary electrical services for the plant. The pad mounted transformers, pad mounted switches and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.7.2 Proposed Telecommunications Utility Improvements

New underground telecommunication utility infrastructure, consisting of ductlines and manholes/handholes, will be extended from Hawaiian Telcom and/or Charter Spectrum facilities closest to the reverse-osmosis plant site. Telecommunications utility service will be used to provide voice, communications, internet, SCADA, or other remote communications and monitoring connectivity for the plant. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

5.8 Water Metering and SCADA Control Vaults

5.8.1 Proposed Electrical (Power) Utility Improvements

New underground primary (12 kV) electrical infrastructure, consisting of ductlines and manholes/handholes, will be extended from available HECO 12 kV distribution infrastructure closest to the metering/control vault locations. The anticipated service connection point to the HECO distribution systems is not yet known as the locations of the metering and control vaults have not been determined. Because the metering and SCADA equipment are expected to have a relatively small electrical demand, it is assumed that pad mounted single phase transformers can be utilized to provide secondary electrical services for the vaults. The pad mounted transformers and underground primary cables will be provided by HECO. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes, handholes and secondary conductors.

5.8.2 Proposed Telecommunications Utility Improvements

At this time, it has not been determined whether radio or wireless communications will be utilized for remote monitoring of the metering and control vaults. If needed, new underground telecommunication utility infrastructure, consisting of ductlines, and manholes/handholes, can be extended from Hawaiian Telcom and/or Charter Spectrum facilities closest to the metering/control vault locations. Telecommunications utility service can be used to provide SCADA and telemetry connectivity for the vaults. All telecommunications utility cables and terminations will be provided by Hawaiian Telcom and/or Charter Spectrum. The construction contractor will be responsible to provide all equipment pads, ductlines, manholes and handholes.

6.0 REFERENCES

"Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii", United States Department of Agriculture Soil Conservation Service in cooperation with University of Hawaii Agricultural Experiment Station, August 1972.

"Federal Emergency Management Agency" (FEMA), State of Hawaii - National Flood Insurance Program, Community Panel 1500030676F, September 2012.

"Chapter 4 Rules for Design of Storm Drainage Facilities in the County of Maui" Title MC-15, Department of Public Works and Waste Management, County of Maui, July 14, 1995.

"Water System Standards, Department of Water Supply County of Maui" State of Hawaii 2002.

"County of Maui Wastewater Reclamation Division" Wastewater Flow Standards 2006.

EXHIBIT A

APPENDIX A

Stormwater Drainage Calculations

Table A-1: Existing Drainage Condition (100-Year 24 hour)

Drainage Basin	A_{total} [sf]	A_{total} [acres]	A_{total} [mi^2]	$A_{pervious}$ [acres]	$\%_{pervious}$	$A_{impervious}$ [acres]	$\%_{impervious}$	(1) $CN_{openspace}$	(1) $CN_{impervious\ areas}$	$CN_{weighted}$	(2) S [in]	(3) $P_{100,24\,h}$ [in]	(4) Q [in]	(5) L [ft]	(6) V [ft/s]	(7) T_c [hr]	(8) I_a [in]	I_a/P [in]	(9) q_u [csm/in]	(10) F_p	(11) q_p [cfs]	(14) V_r [acre-ft]	V_r [cu-ft]
E1A	3746160	86.000	0.134	86.000	100%	0.000	0%	39	98	39	15.64	9.04	1.62	300	2.28	0.04	3	0.33	300	1.0	65.37	11.62	506187.64
E1B	8450640	194.000	0.303	194.000	100%	0.000	0%	39	98	39	15.64	9.04	1.62	300	2.28	0.04	3	0.33	300	1.0	147.46	26.21	1141865.14
E2	435600	10.000	0.016	10.000	100%	0.000	0%	39	98	39	15.64	9.04	1.62	265	2.28	0.03	3	0.33	300	1.0	7.60	1.35	58859.03
TOTAL	12632400	290.000	0.453	290.000	100%	0.000	0%														**220.43**	**39.19**	**1706911.81**

(1) Curve Number (CN), from *Urban Hydrology for Small Watersheds: TR-55* (Table 2-2a)

(2) Potential Maximum Retention After Runoff Begins (S), from *Urban Hydrology for Small Watersheds: TR-55* (eq. 2-4)

$$S = \frac{1000}{CN} - 10$$

(3) Depth of 24-hour precipitation from 100-yr, 24-hr Storm, P100y, 24h (in); from *NOAA Atlas 14*

(4) Runoff (Q), from *Urban Hydrology for Small Watersheds: TR-55* (Eq. 2-3)

$$Q = \frac{(P - 0.2S)^2}{(P + 0.8S)}$$

(5) Longest Flow Length (L), Max 300' from *Urban Hydrology for Small Watersheds: TR-55 (Section 3-3)*

(6) Flow Velocity (V), from *Urban Hydrology for Small Watersheds: TR-55* (Fig. 3-1)

(7) Time of Concentration (T_c), from *Urban Hydrology for Small Watersheds: TR-55* (eq. 3-2)

$$T_c = T_{t_1} + T_{t_2} + \ldots T_{t_m} \qquad T_t = \frac{L}{3600V}$$

(8) Initial Abstraction (I_a), from *Urban Hydrology for Small Watersheds: TR-55* (Table 4-1) using weighted CN

(9) Unit Peak Discharge (q_u), from *Urban Hydrology for Small Watersheds: TR-55* (Exhibit 4-I) using I_a/P and T_c

(10) Pond and Swamp Adjustment Factor (F_p), from *Urban Hydrology for Small Watersheds: TR-55* (Table 4-2)

(11) Peak Disharge (q_p), from *Urban Hydrology for Small Watersheds: TR-55* (Eq. 4-1)

$$q_p = q_u A_m Q F_p$$

(12) Runoff Volume (V_r), *from Urban Hydrology for Small Watersheds: TR-55*

$$V_r = 53.33 Q (A_m)$$

EXHIBIT A

Table A-2: Proposed Drainage Condition (100-Year 24 hour)

Drainage Basin	A_{total} [sf]	A_{total} [acres]	A_{total} [mi^2]	$A_{pervious}$ [acres]	$\%_{pervious}$	$A_{impervious}$ [acres]	$\%_{impervious}$	(1) $CN_{openspace}$	(1) $CN_{impervious\ areas}$	$CN_{weighted}$	(2) S [in]	(3) $P_{100,24\,h}$ [in]	(4) Q [in]	(5) L [ft]	(6) V [ft/s]	(7) T_c [hr]	(8) I_a [in]	I_a/P [in]	(9) q_u [csm/in]	(10) F_p	(11) q_p [cfs]	(14) V_r [acre-ft]	V_r [cu-ft]
P1A	3746160	86.000	0.134	25.800	30%	60.200	70%	39	98	80	2.45	9.04	6.64	300	2.28	0.04	0.5	0.06	280	1.0	249.95	47.61	2073696.54
P1B	8450640	194.000	0.303	58.200	30%	135.800	70%	39	98	80	2.45	9.04	6.64	300	2.28	0.04	0.5	0.06	280	1.0	563.83	107.39	4677873.59
P2	435600	10.000	0.016	3.000	30%	7.000	70%	39	98	80	2.45	9.04	6.64	265	2.28	0.03	0.5	0.06	280	1.0	29.06	5.54	241127.50
TOTAL	12632400	290.000	0.453	87.000	30%	203.000	70%														**842.84**	**160.53**	**6992697.64**

(1) Curve Number (CN), from *Urban Hydrology for Small Watersheds: TR-55* (Table 2-2a)

(2) Potential Maximum Retention After Runoff Begins (S), from *Urban Hydrology for Small Watersheds: TR-55* (eq. 2-4)

$$S = \frac{1000}{CN} - 10$$

(3) Depth of 24-hour precipitation from 100-yr, 24-hr Storm, P100y, 24h (in); from *NOAA Atlas 14*

(4) Runoff (Q), from *Urban Hydrology for Small Watersheds: TR-55* (Eq. 2-3)

$$Q = \frac{(P - 0.2S)^2}{(P + 0.8S)}$$

(5) Longest Flow Length (L), Max 300' from *Urban Hydrology for Small Watersheds: TR-55 (Section 3-3)*

(6) Flow Velocity (V), from *Urban Hydrology for Small Watersheds: TR-55* (Fig. 3-1)

(7) Time of Concentration (T_c), from *Urban Hydrology for Small Watersheds: TR-55* (eq. 3-2)

$$T_c = T_{t_1} + T_{t_2} + \ldots T_{t_m} \qquad T_t = \frac{L}{3600V}$$

(8) Initial Abstraction (I_a), from *Urban Hydrology for Small Watersheds: TR-55* (Table 4-1) using weighted CN

(9) Unit Peak Discharge (q_u), from *Urban Hydrology for Small Watersheds: TR-55* (Exhibit 4-I) using I_a/P and T_c

(10) Pond and Swamp Adjustment Factor (F_p), from *Urban Hydrology for Small Watersheds: TR-55* (Table 4-2)

(11) Peak Disharge (q_p), from *Urban Hydrology for Small Watersheds: TR-55* (Eq. 4-1)

$$q_p = q_u A_m Q F_p$$

(12) Runoff Volume (V_r), *from Urban Hydrology for Small Watersheds: TR-55*

$$V_r = 53.33Q(A_m)$$

EXHIBIT A

Table A3: Drainage Basin and Discharge Summary

Drainage Area	Exist. Area (acres)	Prop. Area (acres)	Change in Area (acres)	(1) q_0 [cfs]	(2) q_i [cfs]	(3) q_0/q_i	(4) V_s/V_r	(5) V_r [cf]	(6) V_s [cf]	Discharge Point
E1A/P1A	86.00	86.00	0.00	65.37	249.95	0.262	0.32	2073697	**663,583**	Basin #1
E1B/P1B	194.00	194.00	0.00	147.46	563.83	0.262	0.32	4677874	**1,496,920**	Basin #2
E2/P2	10.00	10.00	0.00	7.60	29.06	0.262	0.32	241128	**77,161**	Basin #3
TOTAL	290.00	290.00	0.00						**2,237,663**	

(1) Predevelopment discharge, see Appendix A Table A-1

(2) Peak outflow discharge calculated for the proposed condition, see Appendix A Table A2

(3) Peak outflow discharge/Peak inflow discharge

(4) Storage Volume/Runoff Volume from *Urban Hydrology for Small Watersheds: TR-55 (Figure 6-1)*

(5) Proposed Runoff Volume, see Appendix A Table A2

(6) Storage Volume required from *Urban Hydrology for Small Watersheds: TR-55 (eq 6-2)*

$$V_s = V_r\left(\frac{V_s}{V_i}\right)$$

EXHIBIT A

EXHIBIT A

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

1 Average runoff condition, and $I_a = 0.2S$.

2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4 Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

EXHIBIT A

NOAA Atlas 14, Volume 4, Version 3
Location name: Kihei, Hawaii, USA*
Latitude: 20.8267°, Longitude: -156.4578°
Elevation: 132 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

S. Perica, D. Martin, B. Lin, T. Parzybok, D. Riley, M. Yekta, L. Hiner, L.-C. Chen, D. Brewer, F. Yan, K. Maitaria, C. Trypaluk, G. M. Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.210** (0.180-0.244)	**0.284** (0.242-0.336)	**0.390** (0.330-0.462)	**0.472** (0.396-0.562)	**0.588** (0.485-0.708)	**0.681** (0.553-0.828)	**0.777** (0.619-0.957)	**0.879** (0.685-1.10)	**1.02** (0.766-1.30)	**1.14** (0.825-1.48)
10-min	**0.312** (0.267-0.361)	**0.421** (0.359-0.499)	**0.578** (0.490-0.685)	**0.700** (0.587-0.833)	**0.872** (0.719-1.05)	**1.01** (0.820-1.23)	**1.15** (0.918-1.42)	**1.30** (1.02-1.63)	**1.51** (1.14-1.93)	**1.68** (1.22-2.19)
15-min	**0.392** (0.336-0.454)	**0.529** (0.451-0.626)	**0.726** (0.615-0.860)	**0.879** (0.737-1.05)	**1.10** (0.903-1.32)	**1.27** (1.03-1.54)	**1.45** (1.15-1.78)	**1.64** (1.28-2.05)	**1.90** (1.43-2.42)	**2.11** (1.54-2.75)
30-min	**0.551** (0.473-0.638)	**0.745** (0.635-0.882)	**1.02** (0.866-1.21)	**1.24** (1.04-1.47)	**1.54** (1.27-1.85)	**1.78** (1.45-2.17)	**2.04** (1.62-2.51)	**2.30** (1.79-2.88)	**2.67** (2.01-3.41)	**2.98** (2.16-3.86)
60-min	**0.725** (0.622-0.840)	**0.980** (0.835-1.16)	**1.34** (1.14-1.59)	**1.63** (1.36-1.94)	**2.03** (1.67-2.44)	**2.35** (1.91-2.86)	**2.68** (2.14-3.30)	**3.03** (2.36-3.79)	**3.52** (2.64-4.49)	**3.92** (2.84-5.08)
2-hr	**0.984** (0.853-1.15)	**1.35** (1.15-1.59)	**1.84** (1.56-2.19)	**2.23** (1.87-2.66)	**2.76** (2.28-3.33)	**3.18** (2.58-3.89)	**3.61** (2.87-4.46)	**4.07** (3.16-5.09)	**4.69** (3.50-6.00)	**5.18** (3.74-6.75)
3-hr	**1.10** (0.957-1.28)	**1.53** (1.31-1.81)	**2.11** (1.78-2.50)	**2.55** (2.14-3.05)	**3.17** (2.62-3.83)	**3.66** (2.96-4.46)	**4.16** (3.31-5.14)	**4.69** (3.63-5.87)	**5.41** (4.03-6.91)	**5.98** (4.31-7.78)
6-hr	**1.39** (1.19-1.63)	**1.93** (1.63-2.28)	**2.67** (2.25-3.17)	**3.25** (2.72-3.89)	**4.06** (3.34-4.91)	**4.71** (3.80-5.74)	**5.37** (4.25-6.62)	**6.06** (4.68-7.59)	**7.01** (5.21-8.96)	**7.76** (5.57-10.1)
12-hr	**1.74** (1.49-2.04)	**2.42** (2.04-2.85)	**3.38** (2.84-3.99)	**4.14** (3.45-4.92)	**5.22** (4.28-6.28)	**6.09** (4.91-7.41)	**7.01** (5.53-8.61)	**7.98** (6.14-9.94)	**9.34** (6.90-11.9)	**10.4** (7.44-13.5)
24-hr	**2.15** (1.85-2.51)	**2.99** (2.57-3.49)	**4.20** (3.60-4.91)	**5.20** (4.43-6.08)	**6.62** (5.60-7.78)	**7.79** (6.53-9.20)	**9.04** (7.50-10.7)	**10.4** (8.52-12.4)	**12.3** (9.92-14.8)	**13.9** (11.0-16.9)
2-day	**2.49** (2.21-2.83)	**3.48** (3.08-3.95)	**4.91** (4.34-5.59)	**6.09** (5.35-6.94)	**7.78** (6.77-8.92)	**9.18** (7.91-10.6)	**10.7** (9.10-12.3)	**12.3** (10.3-14.3)	**14.6** (12.0-17.2)	**16.5** (13.4-19.5)
3-day	**2.65** (2.35-3.00)	**3.70** (3.29-4.21)	**5.24** (4.63-5.96)	**6.50** (5.71-7.41)	**8.30** (7.23-9.52)	**9.79** (8.44-11.3)	**11.4** (9.69-13.2)	**13.1** (11.0-15.2)	**15.5** (12.8-18.2)	**17.5** (14.2-20.7)
4-day	**2.80** (2.49-3.18)	**3.93** (3.49-4.46)	**5.56** (4.92-6.33)	**6.90** (6.07-7.87)	**8.83** (7.68-10.1)	**10.4** (8.97-12.0)	**12.1** (10.3-14.0)	**13.9** (11.7-16.1)	**16.4** (13.6-19.3)	**18.5** (15.0-21.9)
7-day	**3.18** (2.82-3.60)	**4.46** (3.96-5.06)	**6.29** (5.56-7.15)	**7.77** (6.83-8.86)	**9.88** (8.60-11.3)	**11.6** (9.98-13.3)	**13.4** (11.4-15.5)	**15.3** (12.9-17.8)	**18.0** (14.8-21.1)	**20.1** (16.3-23.8)
10-day	**3.49** (3.11-3.95)	**4.89** (4.34-5.54)	**6.87** (6.08-7.81)	**8.46** (7.44-9.64)	**10.7** (9.31-12.2)	**12.5** (10.8-14.4)	**14.4** (12.2-16.6)	**16.3** (13.7-19.0)	**19.1** (15.7-22.4)	**21.3** (17.2-25.2)
20-day	**4.35** (3.87-4.92)	**6.06** (5.38-6.87)	**8.43** (7.46-9.58)	**10.3** (9.05-11.7)	**12.9** (11.2-14.7)	**14.9** (12.8-17.1)	**16.9** (14.4-19.5)	**19.0** (16.0-22.2)	**22.0** (18.1-25.8)	**24.2** (19.6-28.6)
30-day	**4.99** (4.45-5.65)	**6.96** (6.19-7.88)	**9.65** (8.54-11.0)	**11.7** (10.3-13.4)	**14.6** (12.7-16.7)	**16.8** (14.5-19.3)	**19.0** (16.2-22.0)	**21.3** (17.9-24.8)	**24.4** (20.1-28.6)	**26.7** (21.6-31.6)
45-day	**5.97** (5.33-6.76)	**8.34** (7.41-9.44)	**11.5** (10.2-13.1)	**13.9** (12.2-15.8)	**17.1** (14.9-19.6)	**19.6** (16.9-22.5)	**22.0** (18.8-25.5)	**24.5** (20.6-28.5)	**27.8** (22.9-32.6)	**30.2** (24.5-35.8)
60-day	**6.67** (5.95-7.55)	**9.30** (8.27-10.5)	**12.8** (11.3-14.5)	**15.4** (13.6-17.6)	**18.9** (16.4-21.6)	**21.5** (18.5-24.7)	**24.0** (20.5-27.8)	**26.6** (22.4-31.0)	**30.0** (24.7-35.3)	**32.5** (26.3-38.5)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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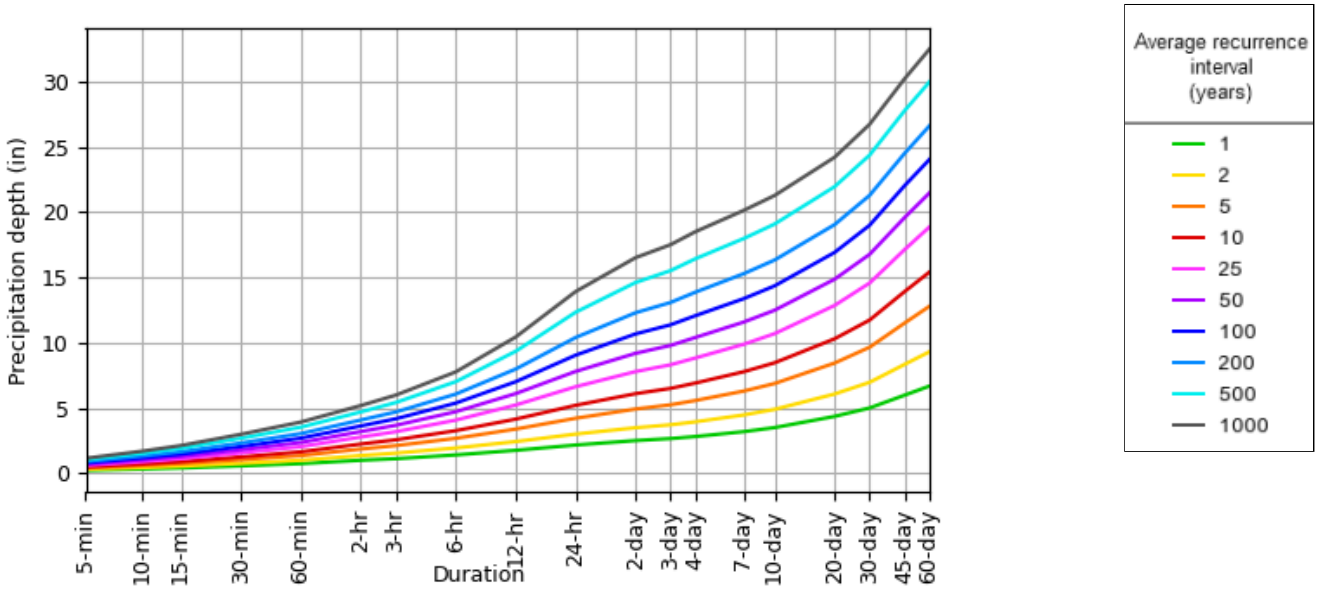
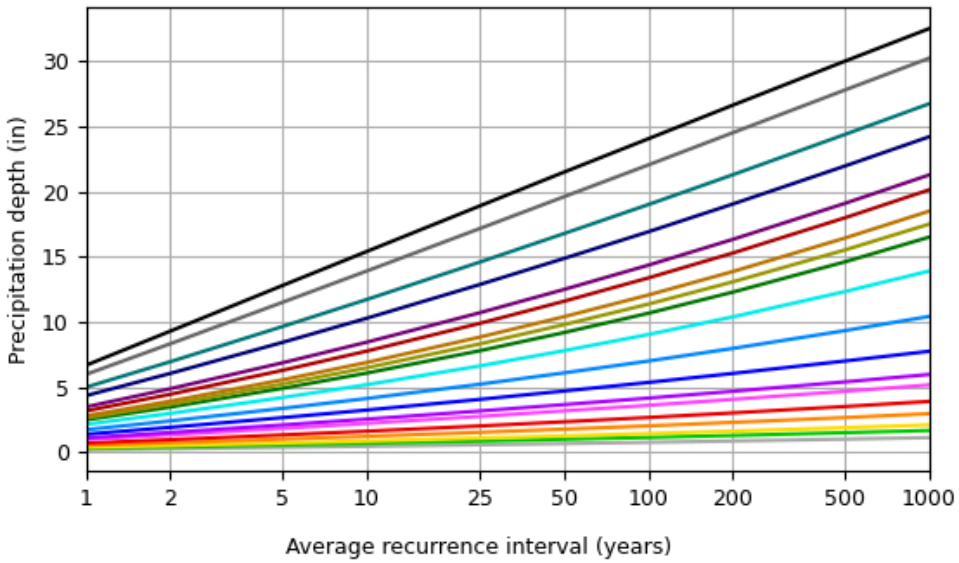
PF graphical

EXHIBIT A

PDS-based depth-duration-frequency (DDF) curves
Latitude: 20.8267°, Longitude: -156.4578°





NOAA Atlas 14, Volume 4, Version 3

Created (GMT): Thu Aug 14 01:43:24 2025

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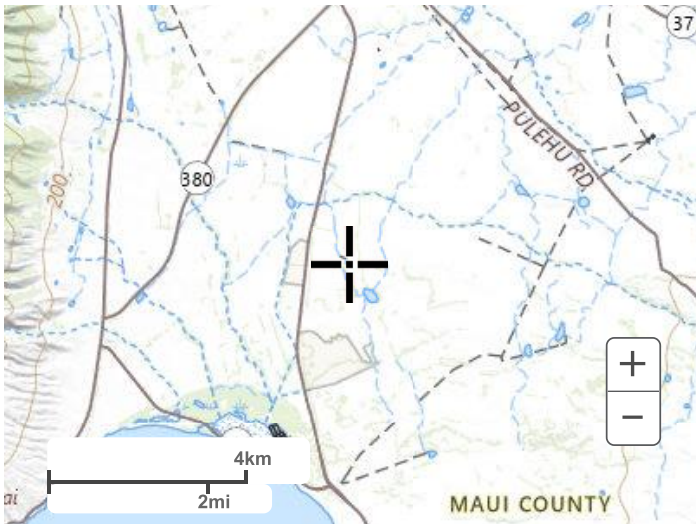
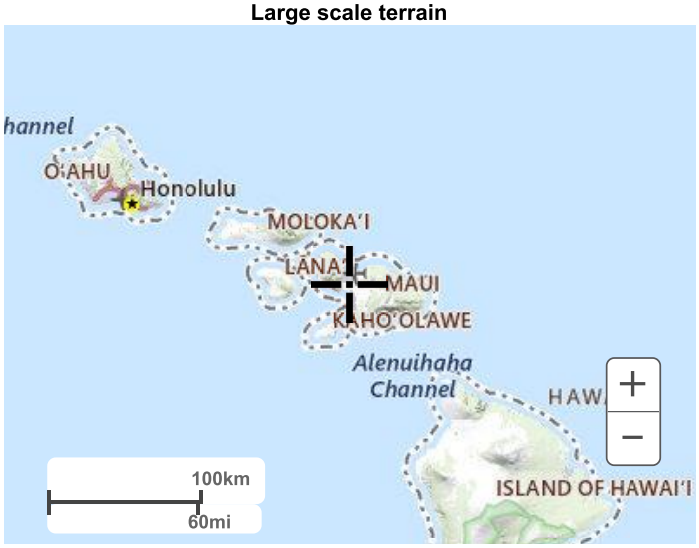
Maps & aerials

Small scale terrain

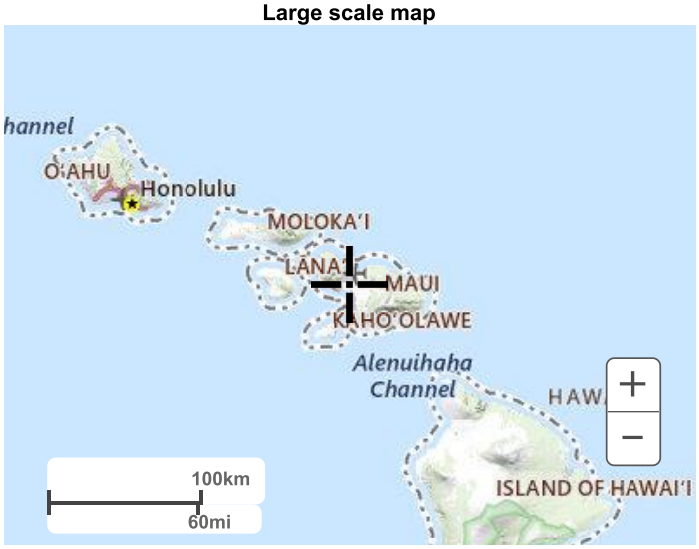
EXHIBIT A



Large scale terrain



Large scale map



Large scale aerial

EXHIBIT A

Figure 3-1 Average velocities for estimating travel time for shallow concentrated flow

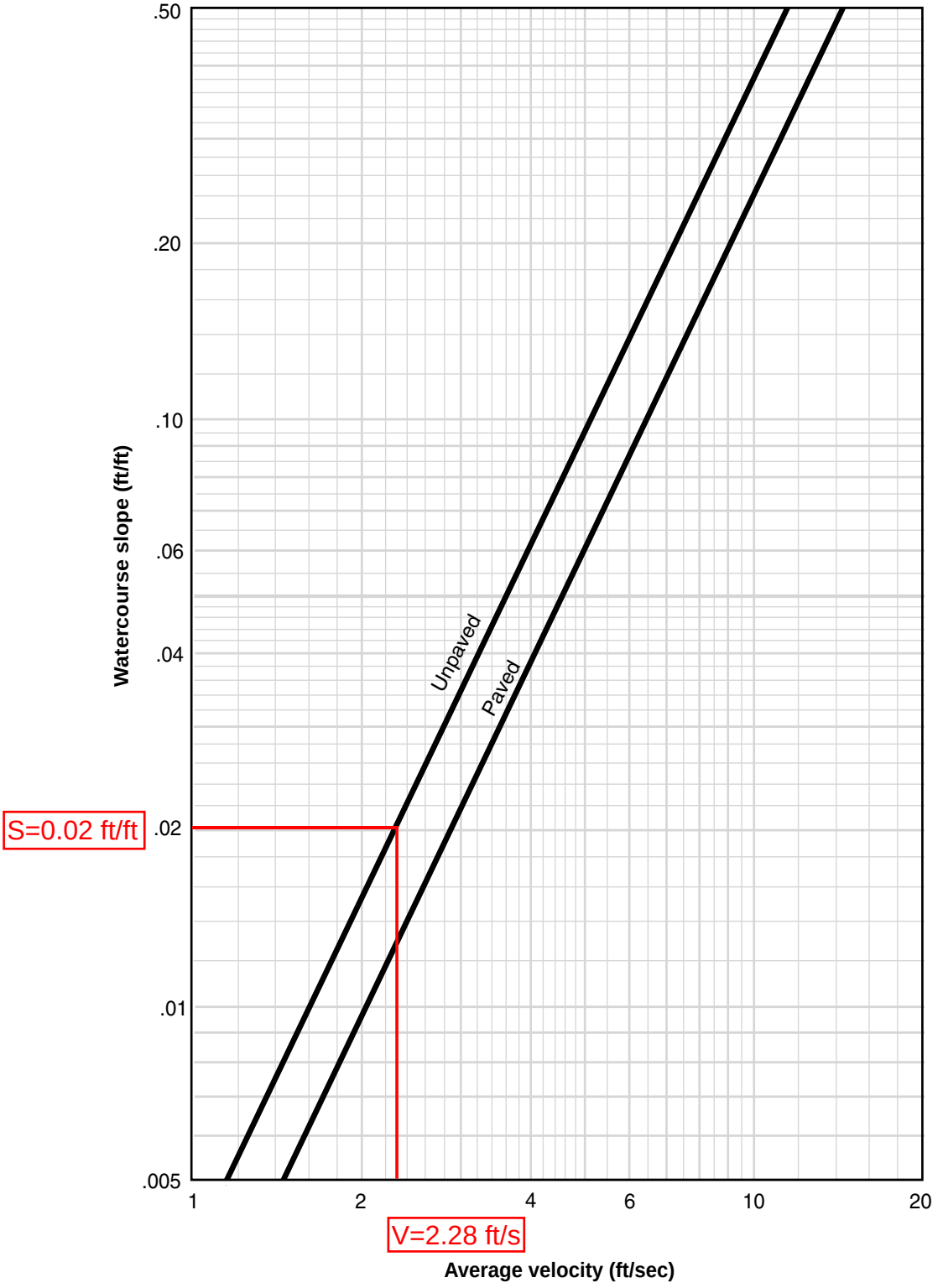


EXHIBIT A

Chapter 4 Graphical Peak Discharge Method

This chapter presents the Graphical Peak Discharge method for computing peak discharge from rural and urban areas. The Graphical method was developed from hydrograph analyses using TR-20, "Computer Program for Project Formulation—Hydrology" (SCS 1983). The peak discharge equation used is:

$$q_p = q_u A_m Q F_p \qquad \text{[eq. 4-1]}$$

where:

q_p = peak discharge (cfs)
q_u = unit peak discharge (csm/in)
A_m = drainage area (mi^2)
Q = runoff (in)
F_p = pond and swamp adjustment factor

The input requirements for the Graphical method are as follows: (1) T_c (hr), (2) drainage area (mi^2), (3) appropriate rainfall distribution (I, IA, II, or III), (4) 24-hour rainfall (in), and (5) CN. If pond and swamp areas are spread throughout the watershed and are not considered in the T_c computation, an adjustment for pond and swamp areas is also needed.

Peak discharge computation

For a selected rainfall frequency, the 24-hour rainfall (P) is obtained from appendix B or more detailed local precipitation maps. CN and total runoff (Q) for the watershed are computed according to the methods outlined in chapter 2. The CN is used to determine the initial abstraction (I_a) from table 4-1. I_a / P is then computed.

If the computed I_a / P ratio is outside the range in exhibit 4 (4-I, 4-IA, 4-II, and 4-III) for the rainfall distribution of interest, then the limiting value should be used. If the ratio falls between the limiting values, use linear interpolation. Figure 4-1 illustrates the sensitivity of I_a / P to CN and P.

Peak discharge per square mile per inch of runoff (q_u) is obtained from exhibit 4-I, 4-IA, 4-II, or 4-III by using T_c (chapter 3), rainfall distribution type, and I_a / P ratio. The pond and swamp adjustment factor is obtained from table 4-2 (rounded to the nearest table value). Use worksheet 4 in appendix D to aid in computing the peak discharge using the Graphical method.

Figure 4-1 Variation of I_a / P for P and CN

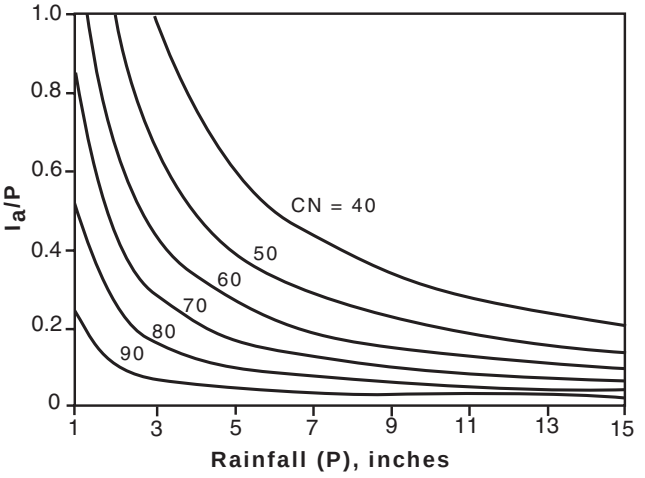


Table 4-1 I_a values for runoff curve numbers

Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

EXHIBIT A

Exhibit 4-I Unit peak discharge (q_u) for NRCS (SCS) type I rainfall distribution

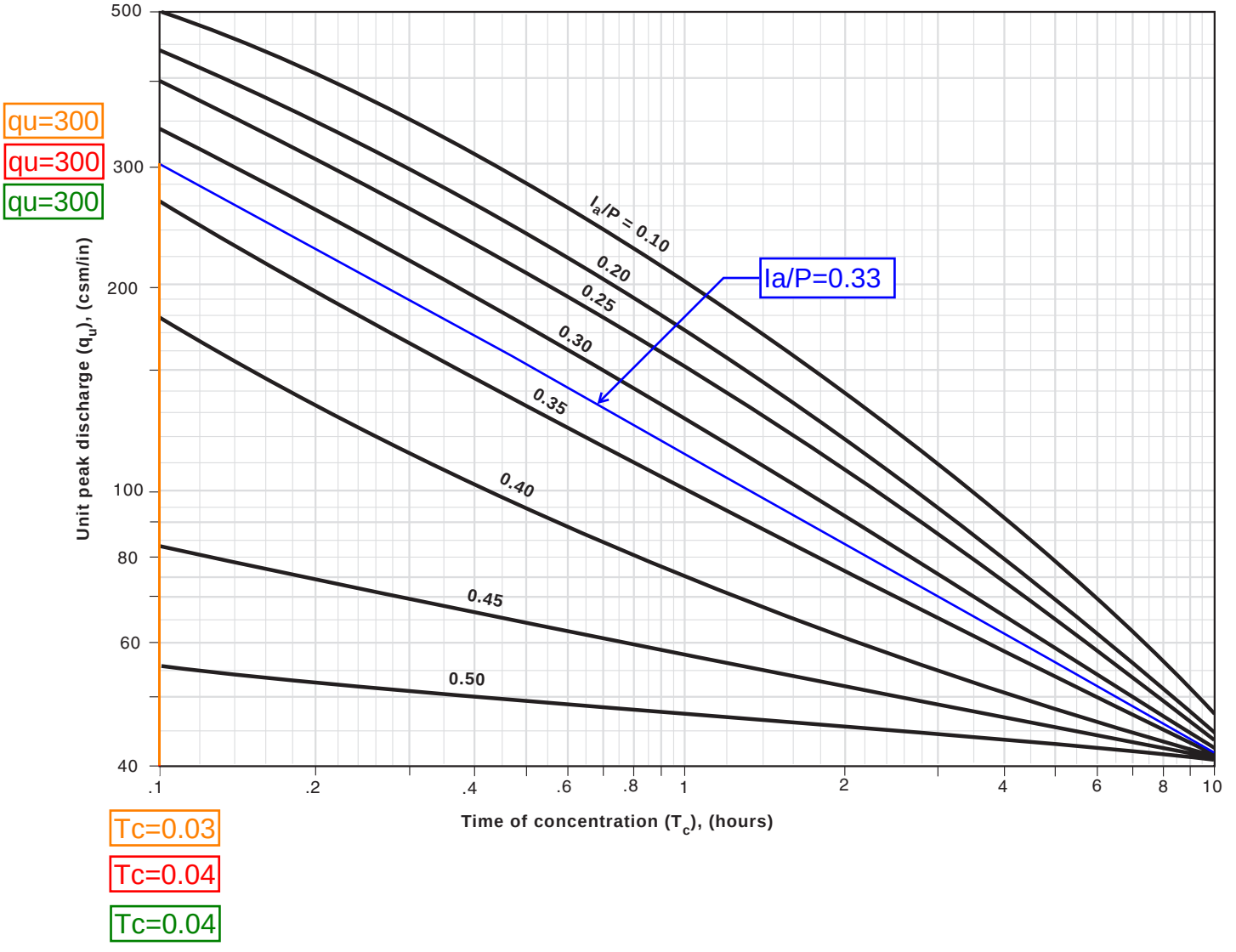


EXHIBIT A

Exhibit 4-I Unit peak discharge (q_u) for NRCS (SCS) type I rainfall distribution

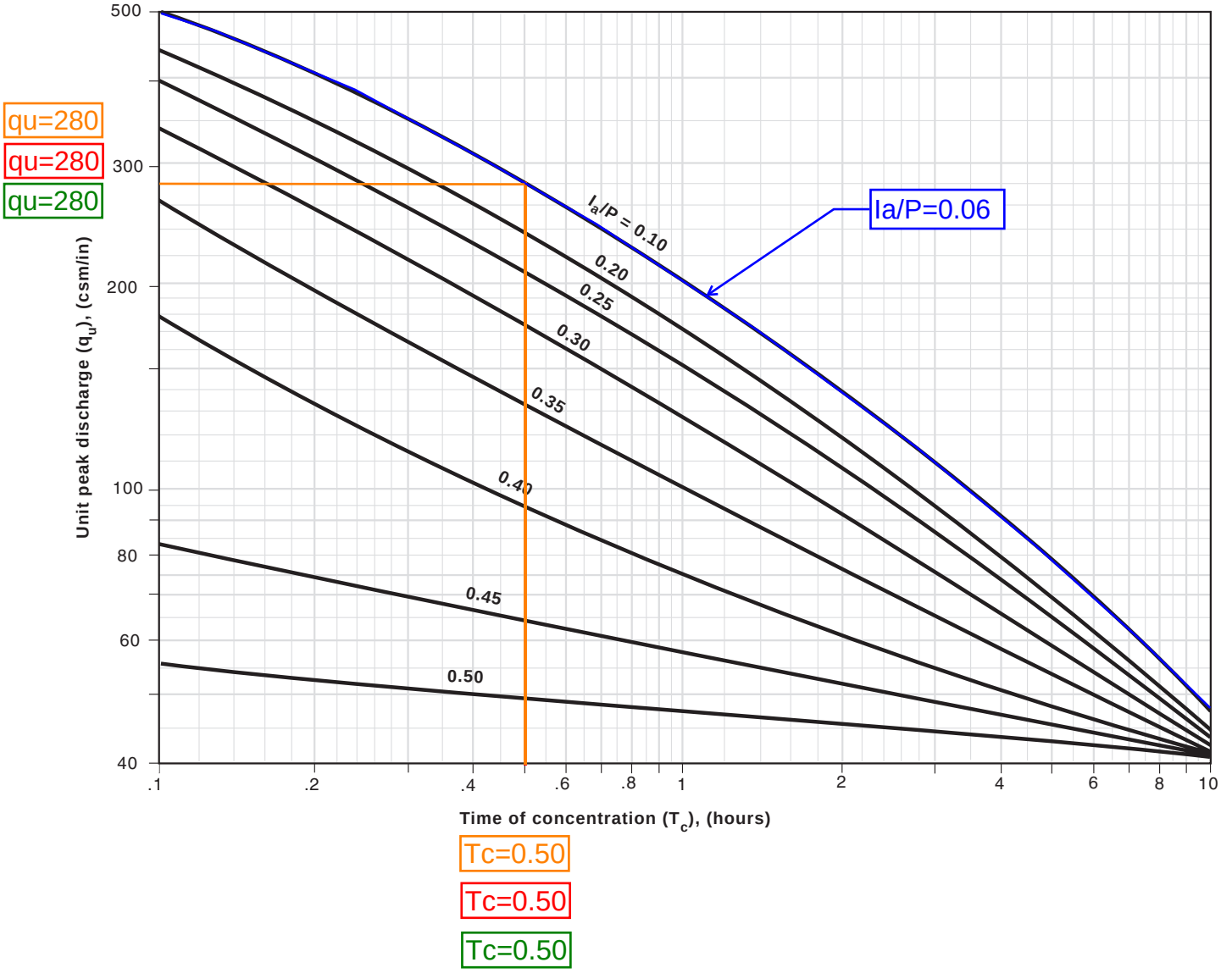


EXHIBIT A

Input requirements and procedures

Use figure 6-1 estimate storage volume (V_s) required or peak outflow discharge (q_o). The most frequent application is to estimate V_s, for which the required inputs are runoff volume (V_r), q_o, and peak inflow discharge (q_i). To estimate q_o, the required inputs are V_r, V_s, and q_i.

Estimating V_s

Use worksheet 6a to estimate V_s, storage volume required, by the following procedure.

1. Determine q_o. Many factors may dictate the selection of peak outflow discharge. The most common is to limit downstream discharges to a desired level, such as predevelopment discharge. Another factor may be that the outflow device has already been selected.
2. Estimate q_i by procedures in chapters 4 or 5. Do not use peak discharges developed by other procedure. When using the Tabular Hydrograph method to estimate q_i for a subarea, only use peak discharge associated with $T_t = 0$.

Figure 6-1 Approximate detention basin routing for rainfall types I, IA, II, and III

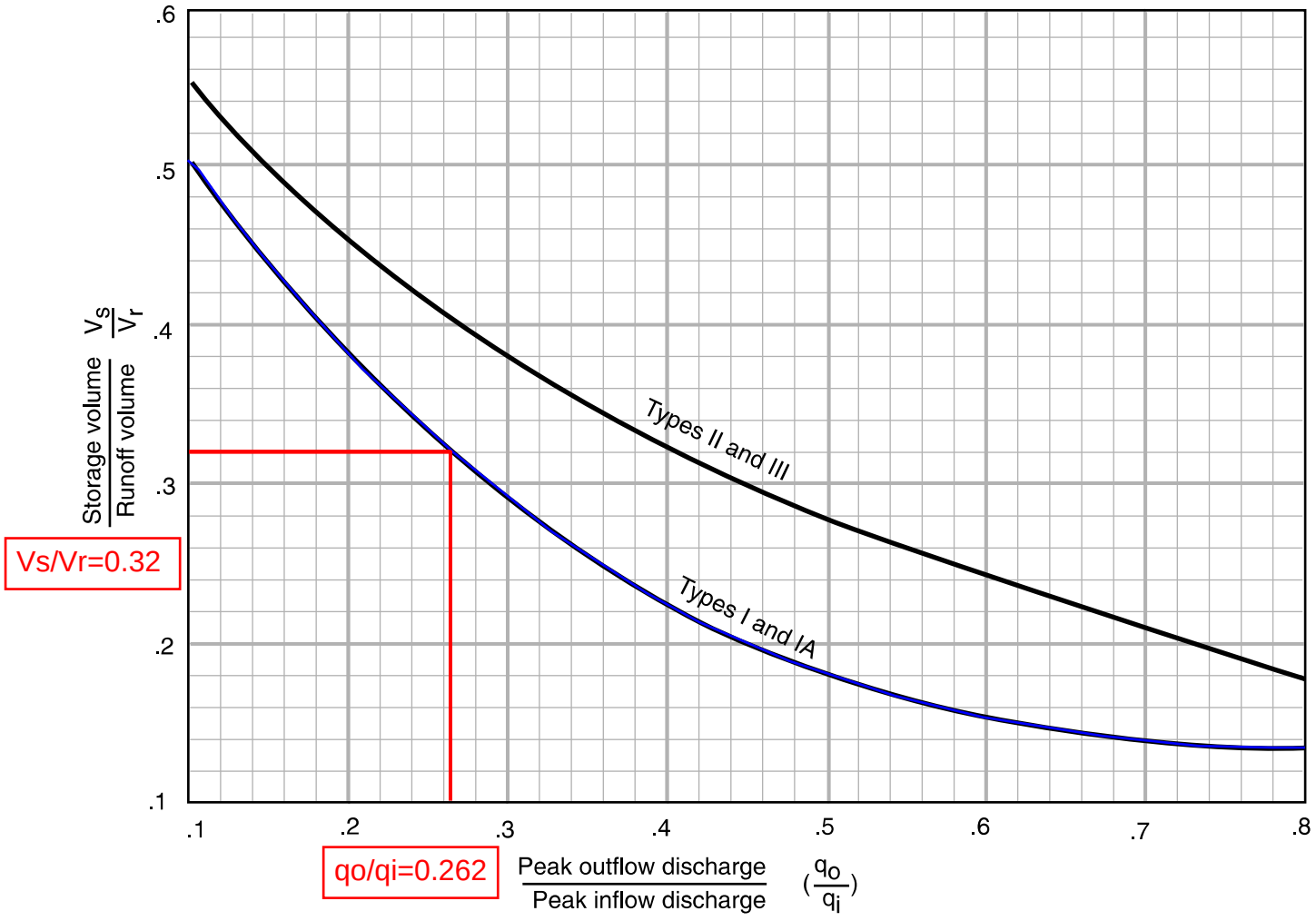
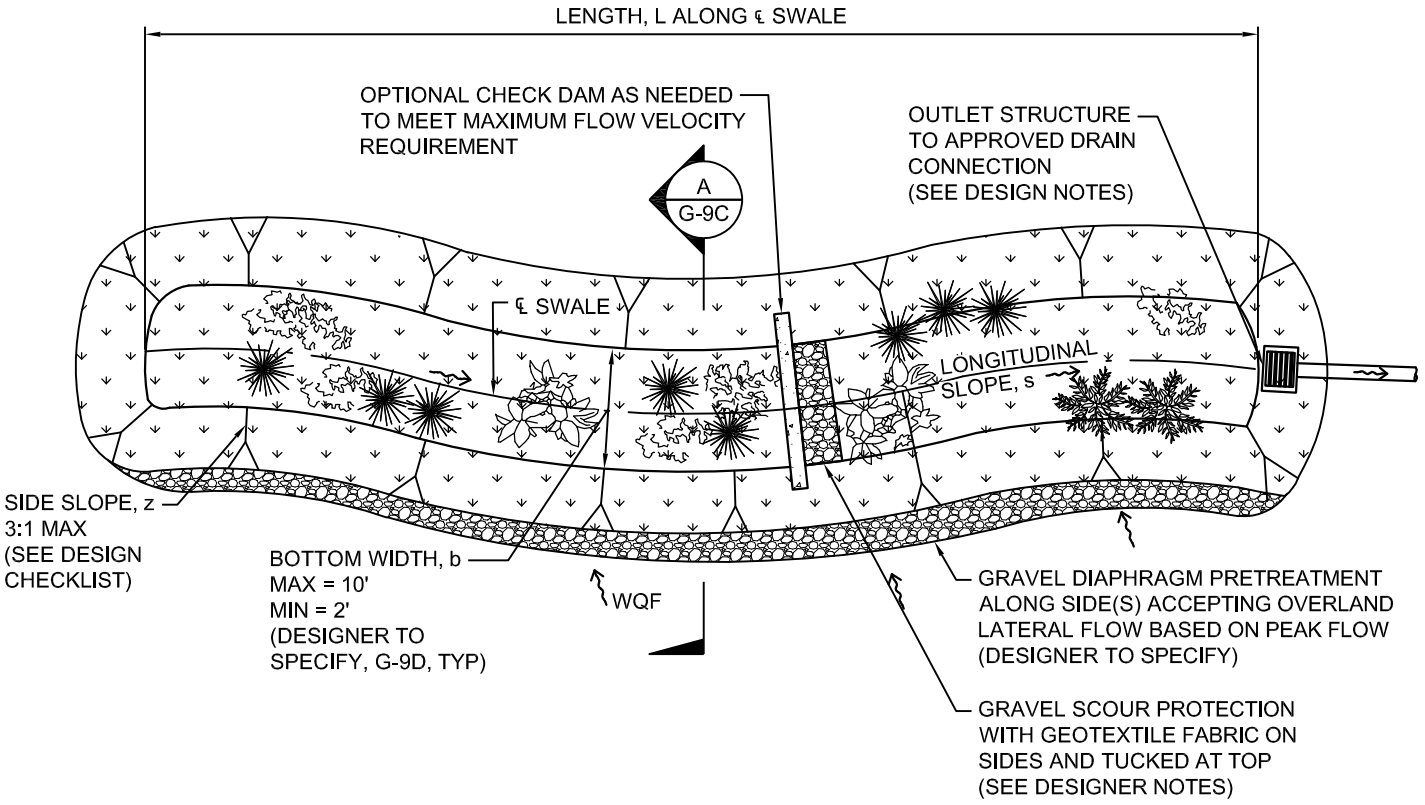


EXHIBIT A

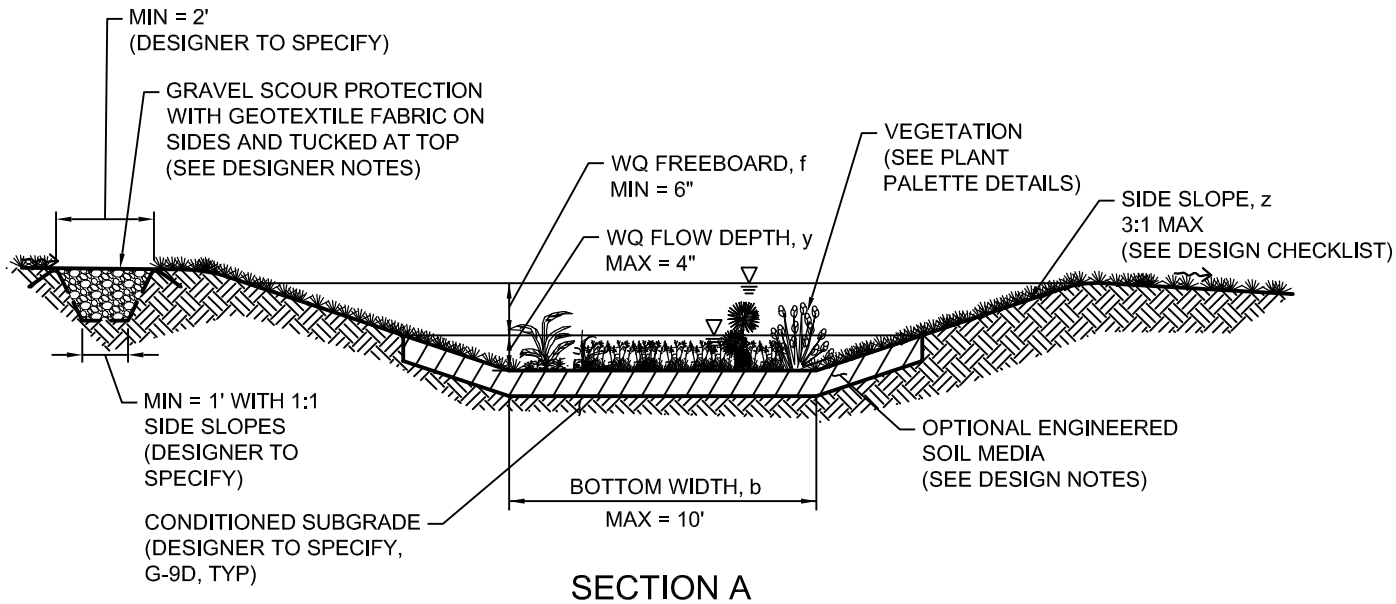
Appendix B

Low Impact Development Details

EXHIBIT A



PLAN

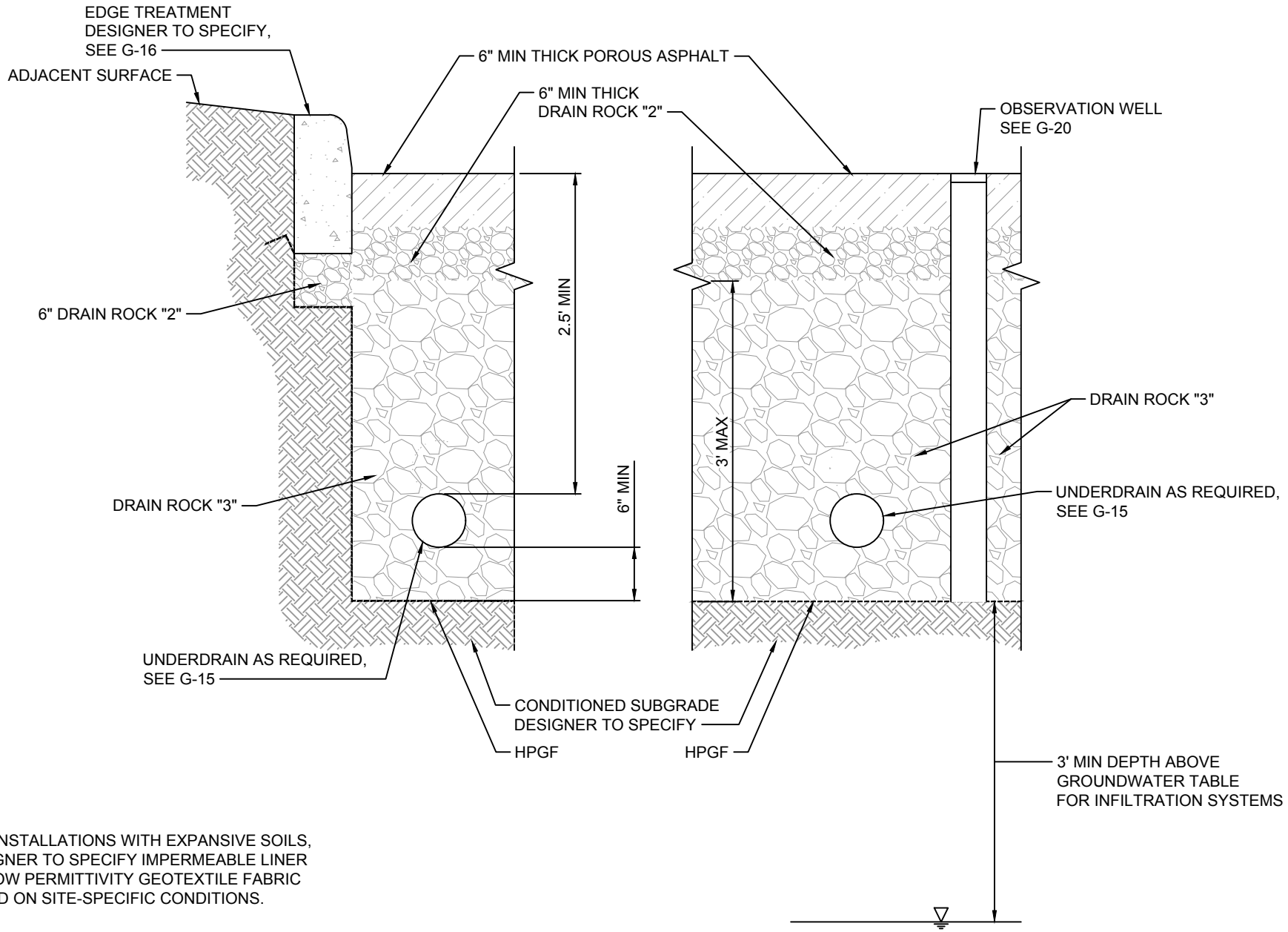


SECTION A

THE LANDOWNER IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF GREEN STORMWATER INFRASTRUCTURE (GSI) BEST MANAGEMENT PRACTICES (BMPS) UNLESS THE LANDOWNER OBTAINS PRIOR WRITTEN APPROVAL THAT THE C&C WILL OPERATE AND MAINTAIN THE GSI BMPS

SEE PREFACE AND DISCLAIMER ON I-1

CITY & COUNTY OF HONOLULU	GREEN STORMWATER	TYPICAL VEGETATED SWALE (OVERLAND FLOW OPTION) PLAN & SECTION	DWG. NO. G-9C DATE 12/21/2020 SCALE NTS REVISED



NOTE:

1. FOR INSTALLATIONS WITH EXPANSIVE SOILS, DESIGNER TO SPECIFY IMPERMEABLE LINER OR LOW PERMITTIVITY GEOTEXTILE FABRIC BASED ON SITE-SPECIFIC CONDITIONS.

EXHIBIT A

THE LANDOWNER IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF GREEN STORMWATER INFRASTRUCTURE (GSI) BEST MANAGEMENT PRACTICES (BMPS) UNLESS THE LANDOWNER OBTAINS PRIOR WRITTEN APPROVAL FROM THE C&C THAT THE C&C WILL OPERATE AND MAINTAIN THE GSI BMPS.

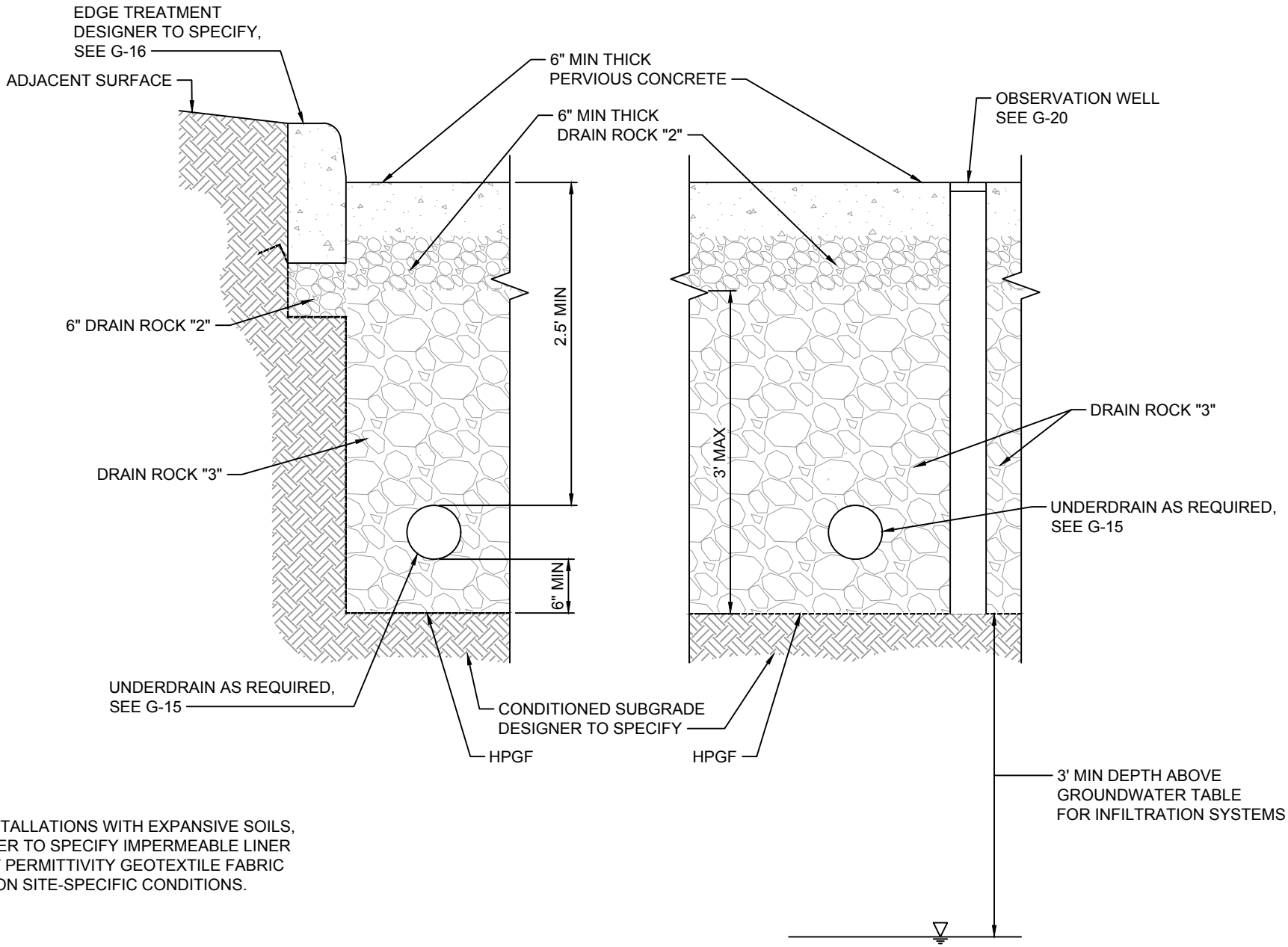
SEE PREFACE AND DISCLAIMER ON I-1

CITY & COUNTY OF HONOLULU

GREEN STORMWATER

TYPICAL PERMEABLE PAVEMENT POROUS ASPHALT SECTION

DATE	DWG. NO.
12/21/2020	G-4A
SCALE 3/4"=1'-0"	
REVISED	



NOTE:

1. FOR INSTALLATIONS WITH EXPANSIVE SOILS, DESIGNER TO SPECIFY IMPERMEABLE LINER OR LOW PERMITTIVITY GEOTEXTILE FABRIC BASED ON SITE-SPECIFIC CONDITIONS.

EXHIBIT A

THE LANDOWNER IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF GREEN STORMWATER INFRASTRUCTURE (GSI) BEST MANAGEMENT PRACTICES (BMPS) UNLESS THE LANDOWNER OBTAINS PRIOR WRITTEN APPROVAL FROM THE C&C THAT THE C&C WILL OPERATE AND MAINTAIN THE GSI BMPS.

SEE PREFACE AND DISCLAIMER ON I-1

CITY & COUNTY OF HONOLULU

GREEN STORMWATER

TYPICAL PERMEABLE PAVEMENT PERVIOUS CONCRETE SECTION

DATE	DWG. NO.
12/21/2020	G-4B
SCALE 3/4"=1'-0"	
REVISED	

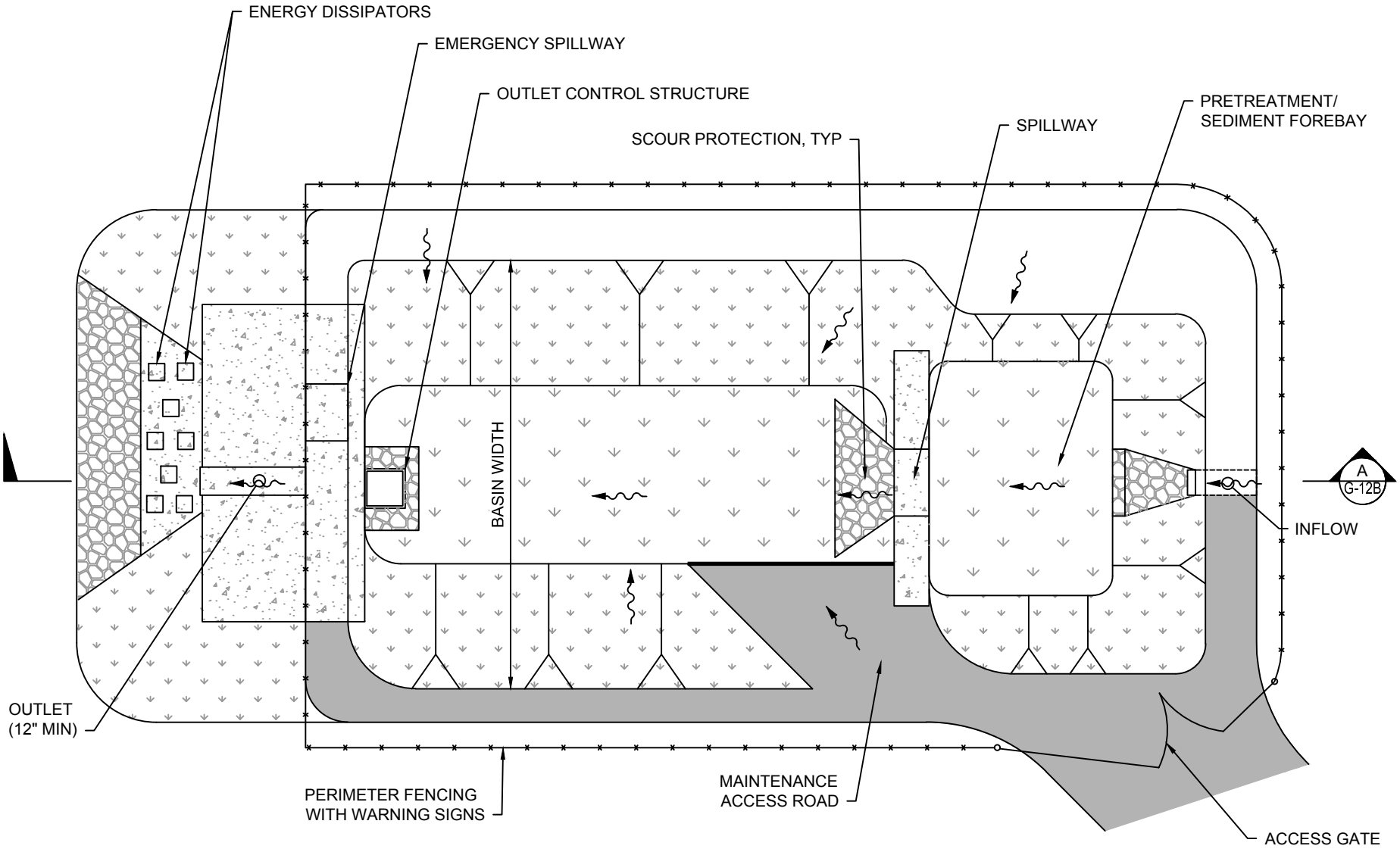


EXHIBIT A

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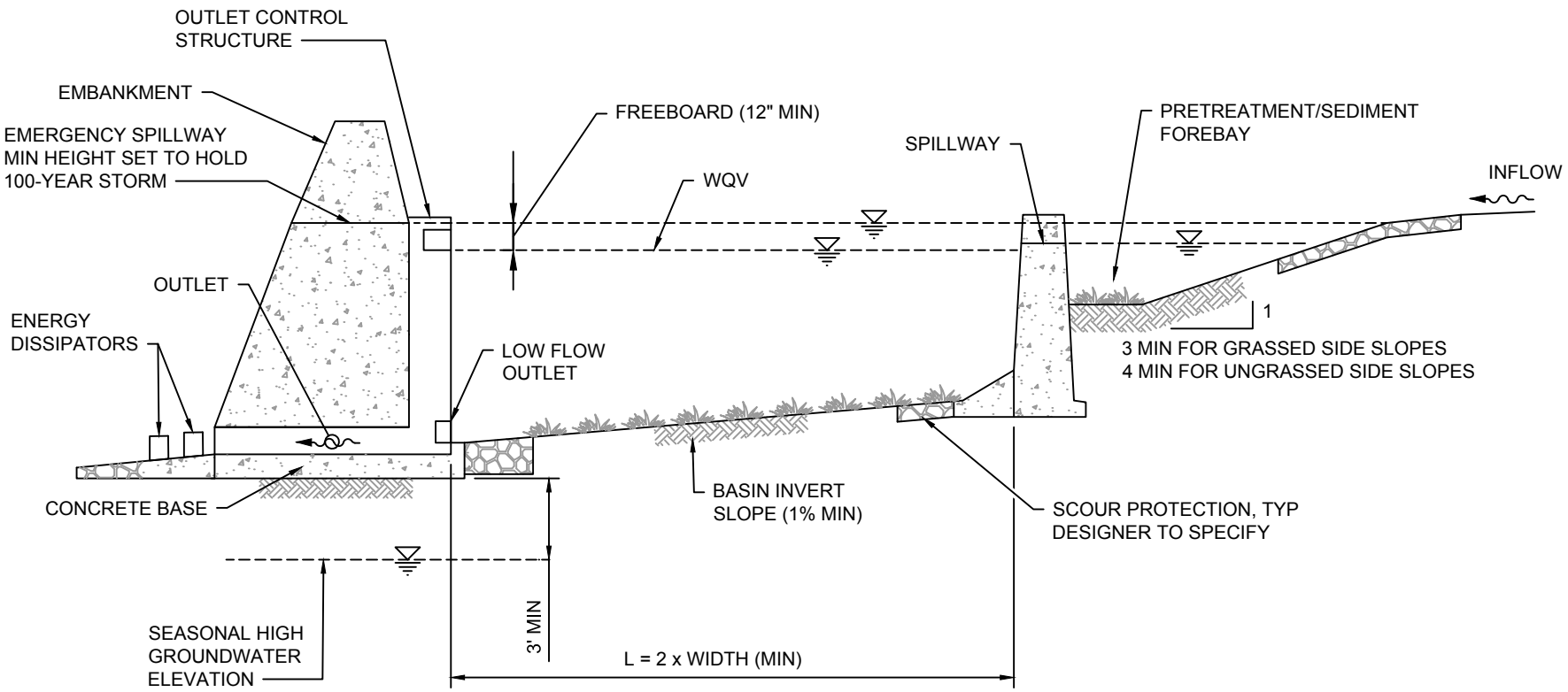
SEE PREFACE AND DISCLAIMER ON I-1

CITY & COUNTY OF HONOLULU

GREEN STORMWATER

TYPICAL DETENTION BASIN SCHEMATIC PLAN

DATE	DWG. NO.
12/21/2020	G-12A
SCALE: NTS	
REVISED	



SECTION A

EXHIBIT A

THE LANDOWNER IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF GREEN STORMWATER INFRASTRUCTURE (GSI) BEST MANAGEMENT PRACTICES (BMPS) UNLESS THE LANDOWNER OBTAINS PRIOR WRITTEN APPROVAL FROM THE C&C THAT THE C&C WILL OPERATE AND MAINTAIN THE GSI BMPS.

SEE PREFACE AND DISCLAIMER ON I-1

CITY & COUNTY OF HONOLULU

GREEN STORMWATER

TYPICAL DETENTION BASIN SCHEMATIC SECTION

DATE	DWG. NO.
12/21/2020	G-12B
SCALE: NTS	
REVISED	

EXHIBIT A

APPENDIX C

Water Consumption Demand Calculations

Table2-1: Projected Water Demands per DWS's System Standards

Land Use Description	Area (acres)	Floor Area Ratio (FAR)	Building Area Per Acre (sf/acre)	Building Area (sf)	Average Day Demand		Average Daily Demand (gpd)	Maximum Daily Demand (gpd)
					Demand	Unit		
PŪLEHUNUI NORTH								
Sandwich Isles (existing)[1]	1	-	-	1,830	140	gpd/1,000 sf	300	450
Commercial/Lt. Industrial	135	0.38	16,500	2,227,500	140	gpd/1,000 sf	312,000	468,000
Hotel	5	-	-	-	17,000	gal/acre	85,000	127,500
Roadways[2]	13	-	-	-	-	-	-	-
Open Space/Ag Buffer	30	-	-	-	1,700	gpd/acre	51,000	76,500
Sub-Total (rounded)	**184**						**449,000**	**673,000**
PŪLEHUNUI SOUTH								
Beneficiary Farmer's Cooperative								
Farm Lots[3]	146	-	-	-	-	-	-	-
Ag. Support	24	0.10	4,400	105,600	140	gpd/1,000 sf	14,800	22,200
Ag. Homestead[4]	238	-	-	-	600	gpd/lot	54,000	81,000
Beneficiary Gardens[5]	27	-	-	-	-	-	-	-
Commercial Enterprises	70	0.10	4,400	308,000	140	gpd/1,000 sf	43,200	64,800
Farmers Market	11	0.01	440	4,840	140	gpd/1,000 sf	700	1,050
Arts & Cultural Center	18	0.05	2,200	39,600	140	gpd/1,000 sf	5,600	8,400
Education[6]	33	-	-	-	60	gpd/student	24,000	36,000
Wastewater Treatment Plant	-	-	-	-	-	-	1,000	1,500
Roadways & Exist. Gulch Areas[2]	79	-	-	-	-	-	-	-
Sub-Total (rounded)	**646**						**144,000**	**215,000**
DLNR INDUSTRIAL AND BUSINESS PARK								
Commercial/Light Industrial[7]	227.0	0.40	17,424	3,659,040	140	gpd/1,000 sf	540,000	809,000
Road Area[2]	22.8	-	-	-	1,700	gpd/acre	15,500	23,250
Green Area[8]	30.6	-	-	-	1,700	gpd/acre	41,600	62,400
Sub-Total (rounded)	**280.4**						**597,000**	**895,000**
MRPSC[9]								
Light Industrial[10]	**40-45**						**152,000**	**227,000**
MAUI RACEWAY PARK								
Commercial/Light Industrial[11]	**222.6**						**18,000**	**27,000**
TOTAL - All Developments (Rounded)							**1,360,000**	**2,037,000**

[1] Approximate building area was calculated from aerial map.
[2] Water demand for roadway and existing gulch areas are 0.
[3] Assumed that Farm Lots will use non-potable water and will have no potable water demand.
[4] Assumed SF Demand of 600 gpd for 90 lots. Assumed each 2 acre lot will have a 10,000 sf home site. Remaining property will be irrigated with non-potable water.
[5] Assumed that Beneficiary Gardens will use non-potable water and will have no potable water demand.
[6] Average Day Demand is based on 400 students.
[7] Average Day demand includes demand for 20-acre DOFAW site.
[8] Average Day Demand is based on an irrigated area of 24.4 acres.
[9] MRPSC stands for Maui Regional Public Safety Complex.
[10] Average Day Demand based on consultation memo from PSD.
[11] Demand based on 900 visitors using 20 gpd. However, this would only occur 13 times per year, so the demand of 18,000 is conservative.

Table 2-2: Projected Water Demands based on a Private Water System

Land Use Description	Area (acres)	Floor Area Ratio (FAR)	Building Area Per Acre (sf/acre)	Building Area (sf)	Average Day Demand		Average Daily Demand (gpd)	Maximum Daily Demand (gpd)
					Demand	Unit		
PŪLEHUNUI NORTH								
Sandwich Isles (existing)[1]	1	-	-	-	2,000	gpd/acre	2,000	3,000
Commercial/Lt. Industrial	135	-	-	-	2,000	gpd/acre	270,000	405,000
Hotel	5	-	-	-	17,000	gal/acre	85,000	127,500
Roadways[2]	13	-	-	-	-	-	-	-
Open Space/Ag Buffer	30	-	-	-	1,700	gpd/acre	51,000	76,500
Sub-Total (rounded)	**184**						**408,000**	**612,000**
PŪLEHUNUI SOUTH								
Beneficiary Farmer's Cooperative								
Farm Lots[3]	146	-	-	-	-	-	-	-
Ag. Support	24	0.10	4,400	105,600	140	gpd/1,000 sf	14,800	22,200
Ag. Homestead[4]	238	-	-	-	600	gpd/lot	54,000	81,000
Beneficiary Gardens[5]	27	-	-	-	-	-	-	-
Commercial Enterprises	70	0.10	4,400	308,000	140	gpd/1,000 sf	43,200	64,800
Farmers Market	11	0.01	440	4,840	140	gpd/1,000 sf	700	1,050
Arts & Cultural Center	18	0.05	2,200	39,600	140	gpd/1,000 sf	5,600	8,400
Education[6]	33	-	-	-	60	gpd/student	24,000	36,000
Wastewater Treatment Plant	-	-	-	-	-	-	1,000	1,500
Roadways & Exist. Gulch Areas[2]	79	-	-	-	-	-	-	-
Sub-Total (rounded)	**646**						**144,000**	**215,000**
DLNR INDUSTRIAL AND BUSINESS PARK								
Commercial/Light Industrial[7]	227.0	-	-	-	2,000	gpd/acre	447,000	670,500
Road Area[2]	22.8	-	-	-	1,700	gpd/acre	15,500	23,250
Green Area[8]	30.6	-	-	-	1,700	gpd/acre	41,600	62,400
Sub-Total (rounded)	**280.4**						**504,100**	**756,150**
MRPSC[9]								
Light Industrial[10]	**40-45**						**152,000**	**227,000**
MAUI RACEWAY PARK								
Commercial/Light Industrial[11]	**222.6**						**18,000**	**27,000**
TOTAL - All Developments (Rounded)							**1,226,000**	**1,837,000**

[1] Approximate building area was calculated from aerial map.
[2] Water demand for roadway and existing gulch areas are 0.
[3] Assumed that Farm Lots will use non-potable water and will have no potable water demand.
[4] Assumed SF Demand of 600 gpd for 90 lots. Assumed each 2 acre lot will have a 10,000 sf home site. Remaining property will be irrigated with non-potable water.
[5] Assumed that Beneficiary Gardens will use non-potable water and will have no potable water demand.
[6] Average Day Demand is based on 400 students.
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[9] MRPSC stands for Maui Regional Public Safety Complex.
[10] Average Day Demand based on consultation memo from PSD.
[11] Demand based on 900 visitors using 20 gpd. However, this would only occur 13 times per year, so the demand of 18,000 is conservative.

EXHIBIT A

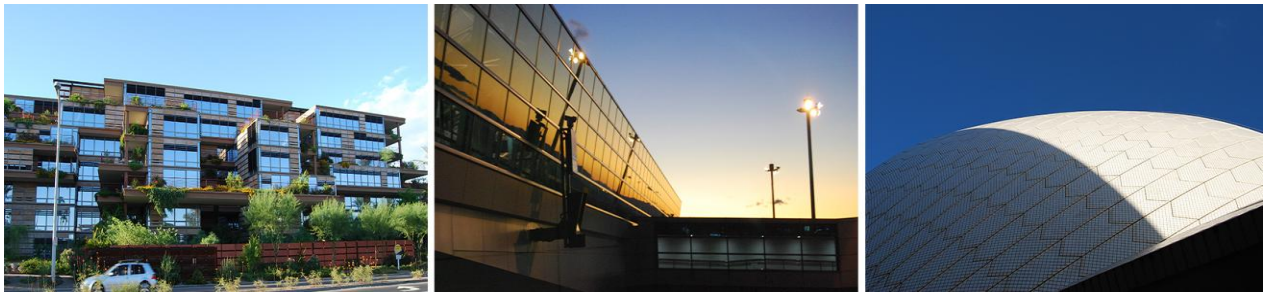
APPENDIX D

Opinion of Probable Cost

EXHIBIT A

J. UNO & ASSOCIATES

CONSTRUCTION COST CONSULTANTS



Opinion of Probable Cost for:

PROJECT NAME:	**HAWAII COMMUNITY DEVELOP. AUTHORITY (HCDA) - STATE OF HAWAII**
	PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT
LOCATION:	**MAUI, HAWAII**
DATE:	**2/15/2026**
PROJECT NO.:	**NA**
J. UNO NO.:	**24-309**
PREPARED FOR:	**WILSON OKAMOTO CORPORATION**
SUBMITTAL:	**INFRASTRUCTURE MASTER PLAN**

1210 Ward Avenue, Suite 204 | Honolulu, Hawaii 96814 | Telephone: 808.947.6855 | www.j-uno-associates.com

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

BASIS OF COST ESTIMATE

TYPE & METHODOLOGY

Project Type:	Renovation
Estimate Purpose:	Opinion of Probable Cost
Estimate Level:	Infrastructure Master Plan
Methodology:	Parametric, Square Foot, Detailed

JUNO ESTIMATING TEAM & QUALITY CONTROL:

Lead Estimator:	E. Yamamoto, Senior Estimator
Quality Control:	C. Stanley, Project Estimator

ESTIMATES PROVIDED BY:		**DATE (IF) RECEIVED:**
Environmental:	J. Uno & Associates, Inc.	February 15, 2026
Existing Conditions:	J. Uno & Associates, Inc.	February 15, 2026
Civil Sitework/ Imprv:	J. Uno & Associates, Inc.	February 15, 2026
Civil Mech Utilities:	J. Uno & Associates, Inc.	February 15, 2026
Site Electrical:	J. Uno & Associates, Inc.	February 15, 2026
Site Telecom:	J. Uno & Associates, Inc.	February 15, 2026

REFERENCED DOCUMENTS:

Name of Docs/Dwgs:	Pulehunui IMP Recommended Projects
Provided By:	Wilson Okamoto Corporation
Date Provided:	August 13, 2025

SCOPE OF WORK:

The project team has been contracted by HCDA for planning, design, & construction within the Pulehunui Community Development District (CDD). The goal of this project is to establish a plan that addresses the needs and vision for the development of Pulehunui CDD through evaluation, identification of deficiencies, and development of proposed infrastructure improvements for the district.

CONTRACT & BIDDING ASSUMPTIONS:

Contract Type:	Design-Bid-Build (DBB)
Bidding Assumptions:	Assume non-restrictive and competitive proposals are sought from at least four (4) qualified prime contract bidders and four (4) qualified subcontract bidders. If the number of bidders falls below this level, it could result in reduced competition, potentially leading to less favorable contract terms and cost escalations.
Bidding Climate:	Assume peak market conditions extending through the completion of this project. Expect prime contractors and subcontractors to be at peak capacity.

ESTIMATE ASSUMPTIONS:

Scope of Work:	Assume project scope of work is limited to the defined submittal information, documentation, and drawings.
Location:	Assume project is located within normal ranges of vendors, labor and equipment.
Access Restrictions:	Assume the contractor will have unrestricted access to the site for the entire duration of the work.
Workhours:	Assume normal daytime workhours with no planned overtime.
Waste Disposal:	Assume local landfills are readily available to accommodate construction waste.

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

BASIS OF COST ESTIMATE

EXCLUDED COSTS - UNLESS NOTED & INCLUDED WITHIN ESTIMATE

1 Furniture, Fixtures & Equipment (FF&E)
2 Audio Visual (AV)
3 Safety & Security
4 IT Equipment
5 Artwork
6 Permits & Special Inspections
7 Owner's Construction Contingency
8 Owner's Scope Contingency
9 A/E Design Fees
10 Project Management or Construction Management Fees
11 Land acquisition
12 Legal Costs

ESTIMATED CONSTRUCTION SCHEDULE & DURATION:

Phasing:	Assume the project will be executed without phasing, with construction proceeding as a continuous process.
Bid Date:	April 1, 2027
Contract Award Date:	June 1, 2027
Mobilization Date:	September 1, 2027
Construction End Date:	September 1, 2031
Construction Months:	48 Months
Contract Duration:	51 Months

MATERIALS BASIS

Sources:	Historical Data from past projects. Online quotes from manufactures, vendors or suppliers. Written or phone quotes from manufacturers, vendors, suppliers or contractors. 2024 & 2025 RS Means Cost Book
Methodology:	Material Costs may include Accessories, Waste Factors, Shipping (Freight) and Handling Material Costs are escalated to midpoint of construction.

LABOR BASIS

Sources:	Hawaii Wage Rate Schedule Inclusive of Fringe Benefits.
Methodology:	Labor Costs are escalated to midpoint of construction.

EQUIPMENT BASIS

Sources:	Historical Data from past projects. Online quotes from manufactures, vendors or suppliers. Written or phone quotes from manufacturers, vendors, suppliers or contractors. USACE - Hourly Equipment Ownership and Operating Expense Table
Methodology:	Equipment Costs are escalated to midpoint of construction.

B A S I S O F C O S T E S T I M A T E

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

BASIS OF COST ESTIMATE

DIRECT MARKUPS:

Location Factor:	Includes but not limited to: Regional and locational factors and premiums. (6.25%)
Escalation to Midpoint:	A provision in costs for uncertain changes in technical and economic conditions over time. Inflation (or deflation) is a component of Escalation to Midpoint of Construction. (21.67%)
Design Contingency:	A markup factor for design contingency is applied to cost estimates to address design maturity, information risks during design, and design risks. The design contingency normally begins higher in earlier phases of design and becomes lower as final design is reached. Design contingency only applies to factors associated with the design and design process. (20%)

CONTRACTOR MARKUPS:

Job Office Overhead (JOOH):	A markup which covers the indirect contractor costs at the jobsite. These generally include but are not limited to temporary construction facilities and consumables, field supervision, field office costs, construction equipment and tools, and other expenses for General Conditions. (10%)
Home Office Overhead (HOOH)	A markup which covers the indirect contractor costs at their home office. These generally include, but are not limited to executive and administrative salaries, legal and accounting expenses, home office rent and expenses, advertising, company insurance, recruiting costs, utilities, bid costs, etc. (5.10%)
Profit:	A markup which addresses a contractor's anticipated fee in addition to the anticipated construction cost. (6.20%)
Bond(s):	Includes but not limited to: Bid, Performance & Payment Bonds for the project. (0.90%)
Insurance(s):	Includes but not limited to: General Liability, Worker's Comp & Builder's Risk for the project. (1.50%)
G.E. Tax:	General Excise Tax (GET). (4.712%)
Competition Premium:	Competition Premium to account for low competition due to market saturation and low amount of bids. (5.00%)

GENERAL NOTE:

This estimate is an opinion of probable construction cost created by J. Uno & Associates, Inc (JUA). It is based on delivered information, documentation and prices assumed to be true, accurate and valid at the time of estimation. JUA uses proprietary procedures and formulae in producing this estimate, and it represents our experience and qualifications as construction cost professionals generally familiar with the industry in respective areas. JUA shall not be held liable for design changes made after this estimate has been submitted, nor for errors and omissions not exposed during a normal design review process. The recipient of this estimate is urged to review it carefully and address any discrepancies. This estimate shall not be altered without prior consent from JUA.

EXHIBIT A

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
PROJECT COST SUMMARY				
Includes prime and sub markups.				
ROADWAY AND ACCESS				
Mehameha Rd Improvements (Maui Veterans Hwy, to Road B)	3,300	LF	$6,700	$22,110,000
Kamaaina Rd Improvements	3,200	LF	$6,700	$21,440,000
North-South Parkway Rd Improvements (Road B)	5,000	LF	$8,200	$41,000,000
Mehameha Rd Improvements (Road B to Road N)	2,000	LF	$5,900	$11,800,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$96,350,000**
STORM DRAINAGE				
Detention basin for DLNR Industrial Business Park	6	AC	$10,580,000	$63,480,000
Detention basin for TMK 3-8-008:001	3	AC	$9,347,000	$28,041,000
Low impact development (LID) Improvements	1	LS	$3,044,000	$3,044,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$94,565,000**
SANITARY SEWER SYSTEM				
8-inch PVC gravity sewer pipe	15,000	LF	$780	$11,700,000
Sewer manholes	40	EA	$71,000	$2,840,000
Temporary wastewater treatment plant	1	LS	$20,720,000	$20,720,000
6-inch PVC force main sewer pipe	25,500	LF	$710	$18,105,000
Pump station building w/ wet well	2	EA	$4,016,000	$8,032,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$61,397,000**
WATER SUPPLY SYSTEM - CONNECTION TO EXISTING DWS SYSTEM				
12-inch DI pipe	3,000	LF	$1,300	$3,900,000
12-inch Gate Valve & Valve Box	4	EA	$15,000	$60,000
3/4-inch Air Relief Valve & Valve Box	1	EA	$15,000	$15,000
Fire Hydrant w/ Concrete Pad	12	EA	$29,000	$348,000
DWS Meter Connection & Appurtenances	1	LS	$29,000	$29,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$4,352,000**

EXHIBIT A

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
WATER SUPPLY SYSTEM - OFF-SITE PRODUCTION WELL DEVELOPMENT IN HAIKU AQUIFER				
PHASE 1 (EXPLORATORY WELL)				
Execute Ka Pa'akai Analysis	1	LS	$35,000	$35,000
Obtain CWRM Well Drilling Permit	1	LS	$1,000	$1,000
Drill 12-inch pilot hole	1,000	LF	$1,700	$1,700,000
Video Log & test pump pilot hole	1	LS	$71,000	$71,000
Ream pilot hole to 23-inches	1,000	LF	$2,000	$2,000,000
Install 16-inch solid casing	900	LF	$1,300	$1,170,000
Install 16-inch perforated casing	80	LF	$2,600	$208,000
Furnish & install grout	850	LF	$570	$484,500
Obtain DOH New Source Report Approval	1	LS	$15,000	$15,000
Perform Plumbness & Alignment Test	1	LS	$43,000	$43,000
Obtain CWRM Pump Installation Permit	1	LS	$1,000	$1,000
Furnish & install test pump, perform pump test	1	LS	$155,000	$155,000
SUBTOTAL PHASE 1,	**1**	**LS**		**$5,883,500**
PHASE 2 (PRODUCTION WELL & TRANSMISSION)				
Submersible pump (750 gpm, 75 HP)	1	EA	$987,000	$987,000
Sampling, Testing & Chlorination of Well	1	EA	$20,000	$20,000
Pump discharge unit, piping & concrete pad	1	EA	$244,000	$244,000
Well site earthwork	100	CY	$290	$29,000
Well site AC pavement w/ base course	1,000	SY	$640	$640,000
Access road mass grading	300	LF	$150	$45,000
12' wide access road - AC pavement w/ base course	400	SY	$640	$256,000
6' high chain link fencing w/ barbed wire	600	LF	$430	$258,000
6' high chain link double-swing access gate	1	EA	$15,000	$15,000
6" Gravel fill	1,500	SY	$80	$120,000
8-inch DI piping, Cl. 52	17,000	LF	$1,100	$18,700,000
8-inch pipe valves & fittings	1	LS	$4,791,000	$4,791,000
Erosion & Dust Control (0.5 acre)	1	LS	$154,000	$154,000
Construction Surveying (0.5 acre)	1	LS	$246,000	$246,000
SUBTOTAL PHASE 2,	**1**	**LS**		**$26,505,000**
TOTAL PHASES 1 & 2, OPINION OF PROBABLE COST (TOPC)				**$32,388,500**

EXHIBIT A

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
WATER SUPPLY SYSTEM - DLNR INDUSTRIAL BUSINESS PARK ON-SITE DISTRIBUTION				
New 8" DI Pipe, Complete	22,000	LF	$1,100	$24,200,000
8-inch Gate Valve & Valve Box	30	EA	$22,000	$660,000
3/4-inch Air Relief Valve & Valve Box	10	EA	$14,000	$140,000
Fire Hydrant w/ Concrete Pad	80	EA	$27,000	$2,160,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$27,160,000**
WATER SUPPLY SYSTEM - OFF-SITE/ADJACENT BRACKISH WELL DEVELOPMENT				
Execute Ka Pa'akai Analysis	1	LS	$35,000	$35,000
Obtain CWRM Well Drilling Permit	1	LS	$1,000	$1,000
Drill 12-inch pilot hole	640	LF	$1,700	$1,088,000
Video Log & test pump pilot hole	4	EA	$71,000	$284,000
Ream pilot hole to 19-inches	640	LF	$1,700	$1,088,000
Install 12-inch solid casing	500	LF	$1,100	$550,000
Install 12-inch perforated casing	120	LF	$2,300	$276,000
Furnish & install grout	440	LF	$560	$246,400
Obtain CWRM Pump Installation Permit	1	LS	$1,000	$1,000
Perform Plumbness & Alignment Test	4	EA	$43,000	$172,000
Furnish & install test pump, perform pump test	4	EA	$155,000	$620,000
Submersible pump (250 gpm, 25 HP)	4	EA	$254,000	$1,016,000
Pump discharge unit, piping & concrete pad	4	EA	$71,000	$284,000
Well site earthwork	100	CY	$280	$28,000
Well site AC pavement w/ base course	100	SY	$630	$63,000
Access road mass grading	300	LF	$140	$42,000
12' wide access road - AC pavement w/ base course	150	SY	$630	$94,500
6' high chain link fencing w/ barbed wire	450	LF	$210	$94,500
6' high chain link double-swing access gate	1	EA	$15,000	$15,000
6" Gravel fill	1,000	SY	$80	$80,000
6-inch DI piping, Cl. 52	200	LF	$1,000	$200,000
6-inch pipe valves & fittings	1	LS	$50,000	$50,000
Erosion & Dust Control (0.3 acre)	1	LS	$93,000	$93,000
Construction Surveying (0.3 acre)	1	LS	$148,000	$148,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$6,569,400**

EXHIBIT A

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
WATER SUPPLY SYSTEM - OFF-SITE/ADJACENT REVERSE-OSMOSIS TREATMENT FACILITY				
RO Plant site earthwork	100	CY	$3,000	$300,000
RO Plant site AC pavement w/ base course	500	SY	$630	$315,000
6" Gravel fill	100	SY	$80	$8,000
6-inch DI piping, Cl. 52	4,500	LF	$1,000	$4,500,000
6-inch pipe valves & fittings	1	LS	$1,110,000	$1,110,000
RO Plant Steel Building w/ Concrete Floor	1	LS	$7,045,000	$7,045,000
RO Plant Mechanical Piping	1	LS	$1,409,000	$1,409,000
RO Plant Chlorination System	1	LS	$282,000	$282,000
RO Plant MCC System	1	LS	$2,114,000	$2,114,000
RO Plant Electrical Service	1	LS	$2,114,000	$2,114,000
RO Plant Backup Generator	1	LS	$705,000	$705,000
RO Plant Trains (4- 250 gpm units)	1	LS	$16,908,000	$16,908,000
Pipe Testing & chlorination	1	LS	$282,000	$282,000
Erosion & Dust Control (0.5 acre)	1	LS	$154,000	$154,000
Construction Surveying (0.5 acre)	1	LS	$246,000	$246,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$37,492,000**
WATER SUPPLY SYSTEM - OFF-SITE/ADJACENT WATER STORAGE TANK AND BOOSTER PUMP STATIONS				
1.0 MG Concrete Tank w/ Concrete Floor	1	LS	$33,815,000	$33,815,000
1.0 MG Tank site earthwork	1,500	CY	$8,000	$12,000,000
1.0 MG Tank site AC pavement w/ base course	2,000	SY	$380	$760,000
6' high chain link fencing w/ barbed wire	1,000	LF	$210	$210,000
6' high chain link double-swing access gate	1	EA	$15,000	$15,000
6" Gravel fill	1,500	SY	$80	$120,000
6-inch DI piping, Cl. 52	150	LF	$1,000	$150,000
8-inch DI piping, Cl. 52	200	LF	$1,100	$220,000
12-inch DI piping, Cl. 52	3,000	LF	$1,300	$3,900,000
Pipe valves & fittings	1	LS	$1,045,000	$1,045,000
Domestic Booster Pump Station	1	LS	$2,114,000	$2,114,000
Fire Booster Pump Station	1	LS	$2,114,000	$2,114,000
Erosion & Dust Control (1 acre)	1	LS	$307,000	$307,000
Construction Surveying (1 acre)	1	LS	$491,000	$491,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$57,261,000**

EXHIBIT A

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
WATER SUPPLY SYSTEM - OFF-SITE/ADJACENT WATER STORAGE TANK (ALTERNATE)				
2.0 MG Concrete Tank w/ Concrete Floor (Alternate)	1	LS	$67,629,000	$67,629,000
2.0 MG Tank site earthwork (Alternate)	2,500	CY	$8,000	$20,000,000
2.0 MG Tank site AC pavement w/ base course (Alternate)	3,000	SY	$380	$1,140,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$88,769,000**
WATER SUPPLY SYSTEM - WATER METERING AND SCADA CONTROL VAULTS				
4" Magnetic or ultrasonic flow meter	3	EA	$29,000	$87,000
Pre-cast concrete vault	3	EA	$29,000	$87,000
Electrical and SCADA integration	3	EA	$282,000	$846,000
Site grading and fencing for each vault	3	EA	$141,000	$423,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$1,443,000**
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - MEHAMEHA ROAD (ROAD N) IMPROVEMENTS				
HECO Manhole, 6' x 15'	12	EA	$79,000	$948,000
HECO Handhole, 4' x 6'	11	EA	$48,000	$528,000
HT Manhole, 6' x 15'	12	EA	$79,000	$948,000
HT Handhole, 4' x 6'	11	EA	$48,000	$528,000
Spectrum Handhole, 3' x 5'	12	EA	$33,000	$396,000
Spectrum Pullbox, 2' x 6'	11	EA	$13,000	$143,000
Primary Switch Pad, 17'x22'	2	EA	$27,000	$54,000
Ductline, 14-way (6-5",8-4"), Conc. Enc.	3,800	LF	$2,000	$7,600,000
Ductline, 6-way (2-5",4-4"), Conc. Enc.	1,850	LF	$1,000	$1,850,000
HECO Cabling Charge	3,800	LF	$1,200	$4,560,000
Roadway Light Pole Assembly, 30' Pole, Amber LED	44	EA	$31,000	$1,364,000
Lighting Pullbox	46	EA	$7,100	$326,600
Transformer Pad, 3 Phase, 10'x10'	2	EA	$8,000	$16,000
Transformer Pad, Single Phase, 3.5'x4.5'	1	EA	$2,000	$2,000
Metering Equipment Cabinet	3	EA	$10,000	$30,000
Lighting Ductline, 2-2"C, 4#2, 1#2 GND	4,800	LF	$350	$1,680,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$20,973,600**

PROJECT COST SUMMARY

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - KAMAAINA ROAD IMPROVEMENTS				
HECO Manhole, 6' x 15'	12	EA	$79,000	$948,000
HECO Handhole, 4' x 6'	11	EA	$48,000	$528,000
HT Manhole, 6' x 15'	12	EA	$79,000	$948,000
HT Handhole, 4' x 6'	11	EA	$48,000	$528,000
Spectrum Handhole, 3' x 5'	12	EA	$33,000	$396,000
Spectrum Pullbox, 2' x 6'	11	EA	$13,000	$143,000
Primary Switch Pad	2	EA	$226,000	$452,000
Ductline, 14-way (6-5",8-4"), Conc. Enc.	3,700	LF	$2,000	$7,400,000
Ductline, 6-way (2-5",4-4"), Conc. Enc.	1,850	LF	$1,000	$1,850,000
HECO Cabling Charge	3,700	LF	$1,200	$4,440,000
Roadway Light Pole Assembly, 30' Pole, Amber LED	44	EA	$31,000	$1,364,000
Lighting Pullbox	46	EA	$7,100	$326,600
Transformer Pad, 3 Phase, 10'x10'	2	EA	$8,000	$16,000
Metering Equipment Cabinet	2	EA	$10,000	$20,000
Lighting Ductline, 2-2"C, 4#2, 1#2 GND	4,700	LF	$350	$1,645,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$21,004,600**
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - NORTH-SOUTH PARKWAY (ROAD B)				
HECO Manhole, 6' x 15'	16	EA	$79,000	$1,264,000
HECO Handhole, 4' x 6'	15	EA	$48,000	$720,000
HT Manhole, 6' x 15'	16	EA	$79,000	$1,264,000
HT Handhole, 4' x 6'	15	EA	$48,000	$720,000
Spectrum Handhole, 3' x 5'	16	EA	$33,000	$528,000
Spectrum Pullbox, 2' x 6'	15	EA	$13,000	$195,000
Primary Switch Pad	2	EA	$226,000	$452,000
Ductline, 14-way (6-5",8-4"), Conc. Enc.	5,500	LF	$2,000	$11,000,000
Ductline, 6-way (2-5",4-4"), Conc. Enc.	2,550	LF	$1,000	$2,550,000
HECO Cabling Charge	5,500	LF	$1,200	$6,600,000
Roadway Light Pole Assembly, 30' Pole, Amber LED	68	EA	$31,000	$2,108,000
Lighting Pullbox	70	EA	$7,100	$497,000
Transformer Pad, 3 Phase, 10'x10'	3	EA	$8,000	$24,000
Metering Equipment Cabinet	3	EA	$10,000	$30,000
Lighting Ductline, 2-2"C, 4#2, 1#2 GND	6,500	LF	$350	$2,275,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$30,227,000**

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - SOUTH FIREBREAK ROAD AND MEMHAMEHA (ROAD N) IMPROVEMENTS				
HECO Manhole, 6' x 15'	22	EA	$79,000	$1,738,000
HECO Handhole, 4' x 6'	21	EA	$48,000	$1,008,000
HT Manhole, 6' x 15'	22	EA	$79,000	$1,738,000
HT Handhole, 4' x 6'	21	EA	$48,000	$1,008,000
Spectrum Handhole, 3' x 5'	22	EA	$33,000	$726,000
Spectrum Pullbox, 2' x 6'	21	EA	$13,000	$273,000
Primary Switch Pad	3	EA	$226,000	$678,000
Ductline, 14-way (6-5",8-4"), Conc. Enc.	7,500	LF	$2,000	$15,000,000
Ductline, 6-way (2-5",4-4"), Conc. Enc.	3,500	LF	$1,000	$3,500,000
HECO Cabling Charge	7,500	LF	$1,200	$9,000,000
Roadway Light Pole Assembly, 30' Pole, Amber LED	96	EA	$31,000	$2,976,000
Lighting Pullbox	98	EA	$7,100	$695,800
Transformer Pad, 3 Phase, 10'x10'	4	EA	$8,000	$32,000
Metering Equipment Cabinet	4	EA	$10,000	$40,000
Lighting Ductline, 2-2"C, 4#2, 1#2 GND	10,400	LF	$350	$3,640,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$42,052,800**
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - PUMP STATION AND FORCE MAIN FOR DLNR INDUSTRIAL BUSINESS PARK				
HECO Manhole, 6' x 15'	1	EA	$79,000	$79,000
HECO Handhole, 4' x 6'	1	EA	$48,000	$48,000
HT Handhole, 4' x 6'	2	EA	$48,000	$96,000
Ductline, 4-way (4-4"), Conc. Enc.	500	LF	$710	$355,000
Transformer Pad, 3 Phase, 10'x10'	1	EA	$8,000	$8,000
HECO Cabling Charge	500	LF	$570	$285,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$871,000**
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - TEMPORARY DECENTRALIZED WWTP FOR THE DLNR BUSINESS PARK				
HECO Manhole, 6' x 15'	2	EA	$79,000	$158,000
HECO Handhole, 4' x 6'	4	EA	$48,000	$192,000
HT Handhole, 4' x 6'	2	EA	$48,000	$96,000
Ductline, 4-way (4-4"), Conc. Enc.	1,000	LF	$710	$710,000
Primary Switch Pad, 17'x22'	1	EA	$27,000	$27,000
Transformer Pad, 3 Phase, 10'x10'	3	EA	$8,000	$24,000
HECO Cabling Charge	1,000	LF	$570	$570,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$1,777,000**

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - OFF-SITE/ADJACENT REVERSE OSMOSIS PLANT				
HECO Manhole, 6' x 15'	1	EA	$79,000	$79,000
HECO Handhole, 4' x 6'	1	EA	$48,000	$48,000
HT Handhole, 4' x 6'	2	EA	$48,000	$96,000
Ductline, 4-way (4-4"), Conc. Enc.	500	LF	$710	$355,000
Primary Switch Pad, 17'x22'	1	EA	$27,000	$27,000
Transformer Pad, 3 Phase, 10'x10'	1	EA	$8,000	$8,000
HECO Cabling Charge	500	LF	$570	$285,000
SCADA for Brackish Well and RO Plant	1	EA	$282,000	$282,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$1,180,000**
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - OFF-SITE POTABLE WATER STORAGE TANK AND BOOSTER PUMP STATION				
HECO Manhole, 6' x 15'	1	EA	$79,000	$79,000
HECO Handhole, 4' x 6'	1	EA	$48,000	$48,000
HT Handhole, 4' x 6'	2	EA	$48,000	$96,000
Ductline, 4-way (4-4"), Conc. Enc.	500	LF	$710	$355,000
Transformer Pad, 3 Phase, 10'x10'	1	EA	$8,000	$8,000
HECO Cabling Charge	500	LF	$570	$285,000
SCADA for Potable Well, Storage Tank, and Booster Pump Station	1	EA	$282,000	$282,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$1,153,000**
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM - WATER METERING AND SCADA CONTROL VAULTS (1 LOCATION)				
HECO Handhole, 4' x 6'	1	EA	$48,000	$48,000
HT Handhole, 4' x 6'	1	EA	$48,000	$48,000
Ductline, 4-way (4-4"), Conc. Enc.	300	LF	$710	$213,000
Transformer Pad, 3 Phase, 10'x10'	1	EA	$8,000	$8,000
HECO Cabling Charge	300	LF	$570	$171,000
TOTAL OPINION OF PROBABLE COST (TOPC),	**1**	**LS**		**$488,000**

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL

PROJECT COST SUMMARY TABLE

Includes prime and sub markups.

ROADWAY AND ACCESS	$96,350,000
STORM DRAINAGE	$94,565,000
SANITARY SEWER SYSTEM	$61,397,000
WATER SUPPLY SYSTEM	
CONNECTION TO EXISTING DWS SYSTEM	$4,352,000
OFF-SITE PRODUCTION WELL DEVELOPMENT IN HAIKU AQUIFER	
PHASE 1 (EXPLORATORY WELL)	$5,883,500
PHASE 2 (PRODUCTION WELL & TRANSMISSION)	$26,505,000
DLNR INDUSTRIAL BUSINESS PARK ON-SITE DISTRIBUTION	$27,160,000
OFF-SITE/ADJACENT BRACKISH WELL DEVELOPMENT	$6,569,400
OFF-SITE/ADJACENT REVERSE-OSMOSIS TREATMENT FACILITY	$37,492,000
OFF-SITE/ADJACENT WATER STORAGE TANK AND BOOSTER PUMP STATIONS	$57,261,000
OFF-SITE/ADJACENT WATER STORAGE TANK (ALTERNATE)	$88,769,000
WATER METERING AND SCADA CONTROL VAULTS	$1,443,000
ELECTRICAL SUPPLY AND DISTRIBUTION SYSTEM	
MEHAMEHA ROAD (ROAD N) IMPROVEMENTS	$20,973,600
KAMAAINA ROAD IMPROVEMENTS	$21,004,600
NORTH-SOUTH PARKWAY (ROAD B)	$30,227,000
SOUTH FIREBREAK ROAD AND MEMHAMEHA (ROAD N) IMPROVEMENTS	$42,052,800
PUMP STATION AND FORCE MAIN FOR DLNR INDUSTRIAL BUSINESS PARK	$871,000

EXHIBIT A

P R O J E C T C O S T S U M M A R Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

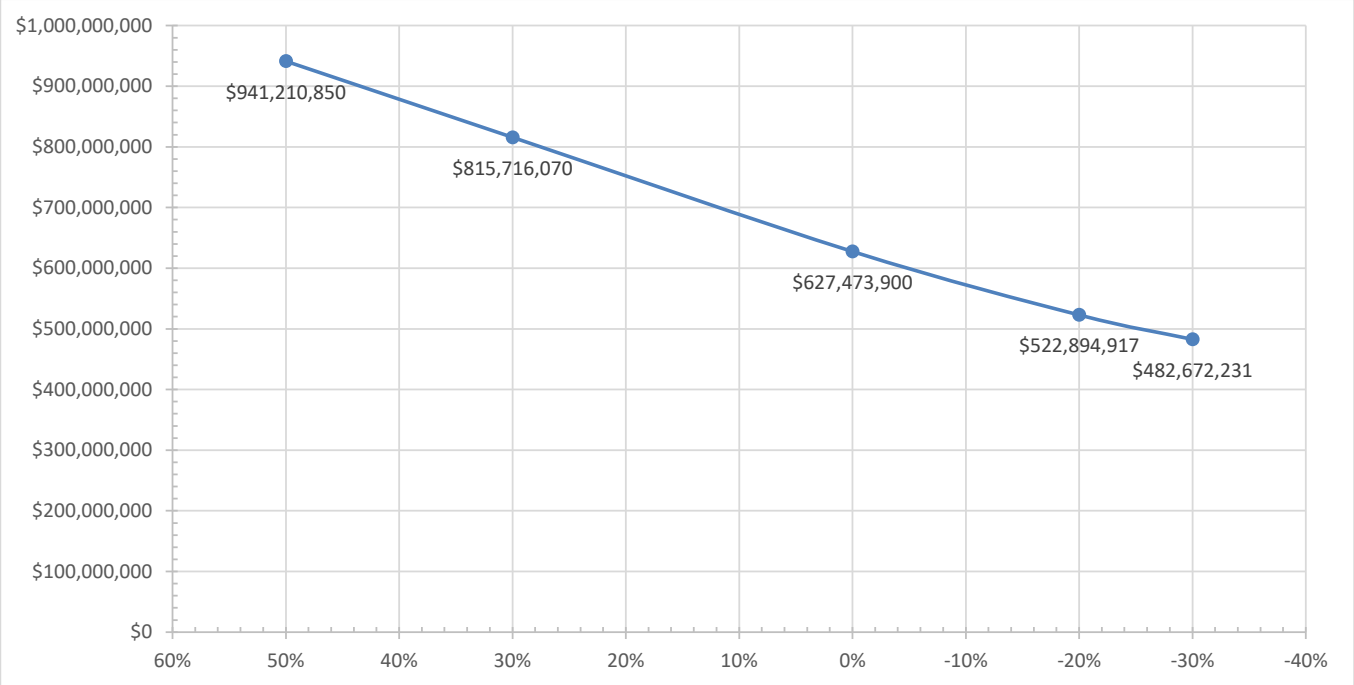
DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL TOTAL
TEMPORARY DECENTRALIZED WWTP FOR THE DLNR BUSINESS PARK				$1,777,000
OFF-SITE/ADJACENT REVERSE OSMOSIS PLANT				$1,180,000
OFF-SITE POTABLE WATER STORAGE TANK AND BOOSTER PUMP STATION				$1,153,000
WATER METERING AND SCADA CONTROL VAULTS (1 LOCATION)				$488,000
TOTAL ESTIMATED CONSTRUCTION COST,				**$627,473,900**

EXHIBIT A

E S T I M A T E D E X P E C T E D A C C U R A C Y

PROJECT:	**PULEHUNUI COMMUNITY DEVELOPMENT DISTRICT**			ESTIMATE NO.:	24-309
LOCATION:	MAUI, HAWAII	PROJECT NO.:	NA	DATE:	2/15/2026
ARCHITECT:	WILSON OKAMOTO CORPORATION	SUBMITTAL:	IMP	CHECKED BY:	C. STANLEY
QTY BY:	WILSON OKAMOTO CORPORATION	PRICES BY:	E. YAMAMOTO	DATE CHECKED:	2/15/2026

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL
ESTIMATED EXPECTED ACCURACY:				
TOTAL OPINION OF PROBABLE COST:	**1**	**LS**		**$627,473,900**
ESTIMATE CLASS:				**CLASS 5**



	Primary Characteristic	*Secondary Characteristic*		
ESTIMATE CLASS	**MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES** Expressed as % of complete definition	**END USAGE** Typical purpose of estimate	**METHODOLOGY** Typical estimating method	**EXPECTED ACCURACY RANGE** Typical variation in low and high ranges at an 80% confidence interval
Class 5	0% to 2%	Functional area, or concept screening	SF or m^2 factoring, parametric models, judgment, or analogy	L: -20% to -30% H: +30% to +50%
Class 4	1% to 15%	or Schematic design or concept study	Parametric models, assembly driven models	L: -10% to -20% H: +20% to +30%
Class 3	10% to 40%	Design development, budget authorization, feasibility	Semi-detailed unit costs with assembly level line items	L: -5% to -15% H: +10% to +20%
Class 2	30% to 75%	Control or bid/tender, semi-detailed	Detailed unit cost with forced detailed take-off	L: -5% to -10% H: +5% to +15%
Class 1	65% to 100%	Check estimate or pre bid/tender, change order	Detailed unit cost with detailed take-off	L: -3% to -5% H: +3% to +10%

Table 1 – Cost Estimate Classification Matrix for Building and General Construction Industries

EXHIBIT A

WILSON OKAMOTO
CORPORATION
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1907 South Beretania Street, Suite 400
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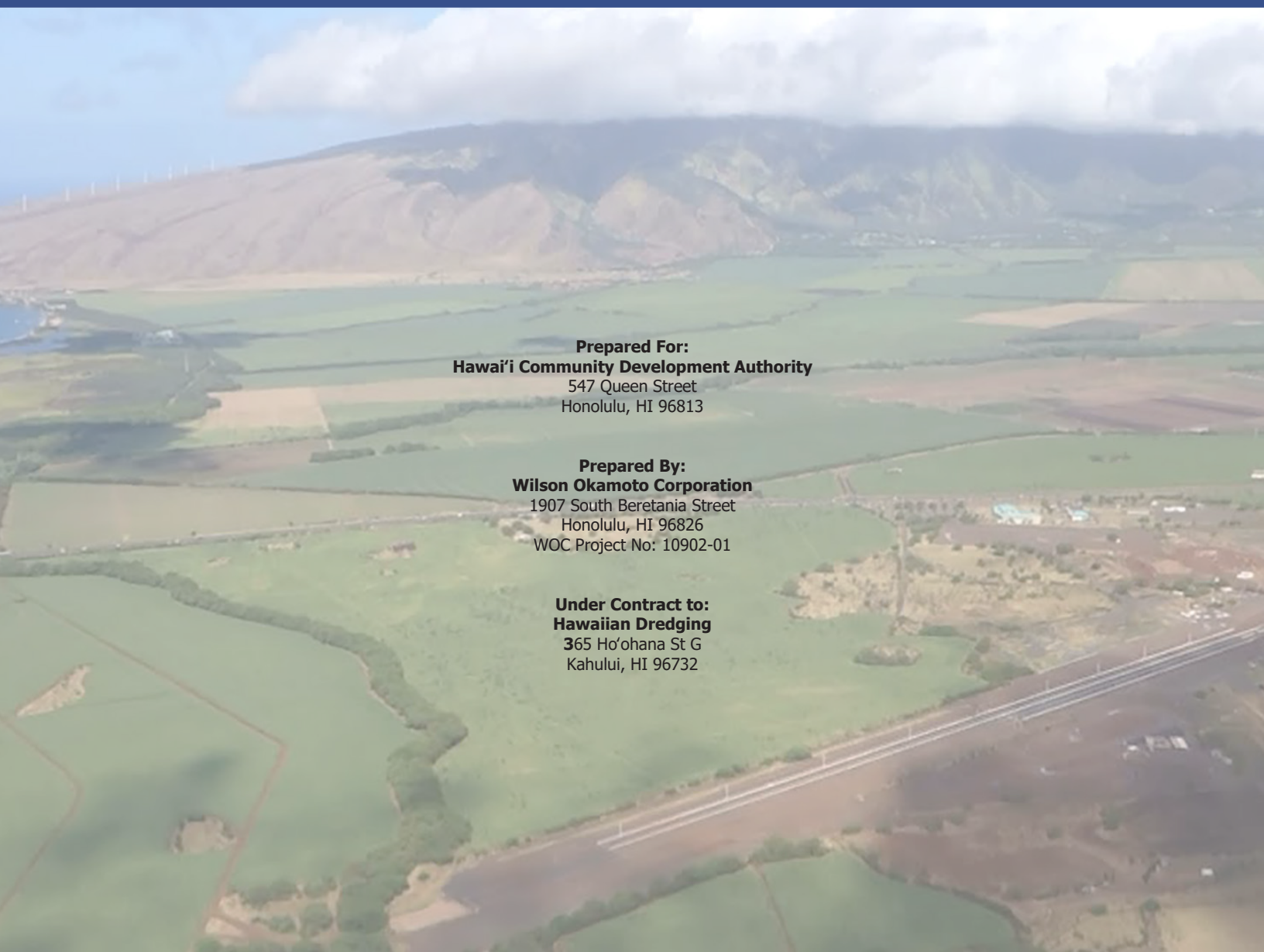
EXHIBIT B

PLANNING ASSESSMENT REPORT

Pūlehunui Community Development District

Revised February 2026



Prepared For:
Hawai'i Community Development Authority
547 Queen Street
Honolulu, HI 96813

Prepared By:
Wilson Okamoto Corporation
1907 South Beretania Street
Honolulu, HI 96826
WOC Project No: 10902-01

Under Contract to:
Hawaiian Dredging
365 Ho'ohana St G
Kahului, HI 96732

EXHIBIT B

Planning Assessment Report (Revised)

Pūlehunui Community Development District

Pūlehunui, Maui, Hawai'i

Prepared For:

Hawai'i Community Development Authority
547 Queen Street
Honolulu, HI 96813

Prepared By:

Wilson Okamoto Corporation
1907 South Beretania Street
Honolulu, HI 96826
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February 2026

EXHIBIT B

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1. EXECUTIVE SUMMARY

Overview

This Planning Assessment Report (PAR) provides a comprehensive baseline evaluation of existing conditions, applicable land use policies, infrastructure systems, and prior planning efforts relevant to the Pūlehunui Community Development District (CDD). Prepared pursuant to HCDA's RFP-HCDA-PUL-23-01 and Act 190 (2022), the PAR establishes a factual and technical foundation to support future infrastructure planning, environmental review, and inter-agency coordination within the District.

HCDA's role at Pūlehunui is advisory, facilitative, and infrastructure focused. Consistent with Act 190, HCDA is not proposing new land use designations, district rules, or zoning authority. Instead, future planning for the Pūlehunui CDD will be guided by existing County zoning, the South Maui Community Plan (SMCP), and all applicable State and County regulatory frameworks.

District Context

The PCDD encompasses approximately 988 acres of State-owned and privately-owned lands in Central Maui. Existing uses include the National Guard Armory, Pūlehunui Motorsports Park, and former plantation lands. Surrounding lands include County and State facilities, DHHL lands, Hawaiian Cement, Mahi Pono agricultural lands, and the Pūlehunui Industrial Park.

The region is strategically located along Maui Veterans Highway, within an area long identified for industrial, public/quasi-public, and employment-generating uses.

Purpose of the PAR

The PAR fulfills four functions:

1. Document existing land use, natural resources, infrastructure, and built conditions
2. Summarize prior studies, master plans, and environmental review documents
3. Identify system deficiencies and constraints affecting future development
4. Highlight planning, entitlement, and infrastructure considerations that HCDA and partner agencies must address moving into the environmental review and Infrastructure Master Plan (IMP) phases

The PAR is a planning assessment, not a decision-making document. It does not commit HCDA or any agency to a specific land use, program, concept, or entitlement path.

Alignment With County & State Plans

The District is entirely within the State Agricultural District and zoned Agriculture under Maui County Code Title 19. The South Maui Community Plan (May 2025 Draft) proposes Employment Center (EC) and Public/Quasi-Public (PQP) community plan designations over portions of the PCDD. These designations allow for:

- Industrial, logistics, and employment uses (EC)
- Governmental, public safety, and institutional uses (PQP)

County zoning amendments would be required before urban-type development could occur. HCDA acknowledges the County's regulatory authority and intends to coordinate zoning consistency under County-led processes, not replace them.

Summary of Key Findings

Land Use & Entitlement Considerations

- The District currently lacks urban zoning and requires zoning amendments for most contemplated State programs (public safety, industrial, veterans home, business park).
- Agricultural zoning limits the scale and type of development; County approvals will be necessary to implement infrastructure and State facility needs.
- No SMA permit is required; the District is outside the SMA and shoreline area.
- Chapter 343 environmental review will be required for all State actions.

Infrastructure Constraints

Roadways

- Internal roads are unimproved; external reliance on Maui Veterans Highway, Nopu Street, and Kamaaina Road creates capacity and access challenges.
- No transit service currently exists in the vicinity.

Water Resources

- Water supply is a significant constraint; DWS Central System capacity is limited.
- Surface water opportunities (Ha'ikū Ditch / Reservoir) and groundwater feasibility require additional study and coordination with CWRM, EMI, DHHL, and Mahi Pono.

Wastewater

- No County treatment plants have capacity for the District.
- A new regional wastewater reclamation facility is the preferred alternative.

Drainage

- No existing regional drainage infrastructure; natural drainage relies on gulches.
- Portions near Kolaloa Gulch fall within Flood Zone A.

Electric/Telecom

- Hawaiian Electric facilities require substantial upgrades to serve full buildout.

- Sandwich Isles Communications has existing telecommunications presence near DHHL lands.

Environmental & Cultural Resources

- No critical habitat is located within the District.
- Prior archaeological surveys identify plantation-era and military features; no traditional Hawaiian sites identified to date.
- Detailed surveys will be required in the EIS.

Opportunities

- Consolidation of State facilities (public safety complex, veterans' home, industrial park) creates shared-infrastructure efficiencies.
- SMCP designations (EC and PQP) align with long-standing State facility needs.
- Inter-agency collaboration enables regional solutions for water, wastewater, and mobility.

Constraints

- Agricultural zoning and State Land Use Agricultural District restrictions limit allowable uses until zoning actions are completed.
- Water availability is uncertain and may constrain phasing.
- Infrastructure investments require multi-agency coordination and financing.

2. INTRODUCTION

This Planning Assessment Report (PAR) has been prepared by Wilson Okamoto Corporation (WOC) at the request of the Hawai'i Community Development Authority (HCDA). The HCDA, established by the Hawai'i State Legislature in 1976, is tasked with planning, regulating, and implementing development in specially designated community districts throughout the State of Hawai'i.
In 2022, the Legislature identified public lands in and near Pūlehunui, Maui, as underutilized, presenting opportunities for redevelopment and enhanced land use. To address these opportunities, Act 190 (Gov. Msg. No. 1291), signed into law on June 27, 2022, created the Pūlehunui Community Development District (Pūlehunui CDD). This legislation enables the HCDA to arrange for the planning, development, and maintenance of these underdeveloped public lands. Act 190 also designate the HCDA to serve as the planning and redevelopment agency for the district on behalf of the State of Hawai'i.

Pursuant to the State of Hawai'i Department of Business, Economic Development, and Tourism (DBEDT) Request for Proposal Solicitation # RFP-HCDA-PUL-23-01, the purpose of this PAR is to evaluate existing conditions, land use information, and documentation relevant to the Pūlehunui CDD. The report examines the alignment of prior planning efforts with Act 190's goals and identifies potential deficiencies or opportunities to support the planning and development of the district. This assessment will serve as a foundational resource for achieving HCDA's objectives of fostering sustainable growth and maximizing the potential of the Pūlehunui CDD.

2.1 District Vision

The HCDA's goal is to efficiently utilize the land and resources of Pūlehunui in a sustainable and environmentally responsible way while preserving and celebrating the region's historic and cultural heritage. The animated planning, design, and construction of roadways and supporting infrastructure will follow best practices in harmony with the desires and best interests of the people of Maui.

The HCDA is not intending to impose or promulgate its own rules and zoning authority in Pūlehunui . Anticipated development will follow existing county, state, and federal guidelines for the area. The HCDA is committed to working closely with Department of Hawaiian Home Lands (DHHL) and other landowners to ensure a collaborative approach during the proposed action. By building and cultivating strong relationships within current adjacent property owners, HCDA aims to create solutions that respect the land, its heritage, and the needs of the local community.

2.2 Project Objectives

The HCDA aims to create a district development plan which incorporates State and County of Maui planning initiatives, addresses environmental and cultural resource concerns, and directs the design of infrastructure improvements in the Pūlehunui CDD. The design, permitting, and construction of the anticipated infrastructure improvements in the Pūlehunui CDD or regionally, shall support the developments on State lands within the Pūlehunui CDD.

2.3 Additional Planned Initiatives

The following planned initiatives in the District, developed by State and county agencies with the input from the people of Maui , will guide the HCDA and the contractor in its long-term community development planning and implementation of infrastructure improvements within the Pūlehunui CDD. Infrastructure improvements in the District or regionally that benefit State lands in the Pūlehunui CD may support some or all of the initiatives listed below:

1. Relocation of the Maui Community Correctional Center to the Pūlehunui CDD;
2. Development of a judiciary complex to serve the new Maui Correctional Center;
3. Development of land owned by the State of Hawaii including the Department of Land & Natural Resource's Industrial and Business Park;
4. Inter-connectivity with adjoining agricultural designated lands, and land owned by the Department of Hawaiian Home Lands;
5. Redevelopment and improvements at the Maui Raceway Park and Recreational Area;
6. Preservation of archeological, and cultural resources in the District;
7. Development of a Hawai'i State Veterans Home; and
8. The development and expansion of infrastructure and utility services to the District including, potable water resources, recycled water (R-1) resources, sewer and/or wastewater treatment, electrical power, telecommunications, roadways, and cultural resources.

As inter-agency coordination progresses, other developments on state-owned land may be served by this project.

2.4 Location and Surrounding Region

The Pūlehunui CDD is located in the central region of Maui (See Figure 1). Regionally, land uses surrounding this area are quite varied and reflect both the traditional and modern aspects of Maui's development. The area surrounding Pūlehunui includes a mix of industrial, agricultural, and commercial uses. This includes light industry, warehouses, and commercial businesses that support the local economy and infrastructure. Key industrial sites include the Central Maui Baseyard, a 50-acre area within a designated Urban Growth Boundary located within the Pūlehunui region. However, it is not part of the CDD and is leased for both light and heavy industrial uses. Another key site is the Pu'unēnē Heavy Industrial Subdivision, a restricted industrial zone used primarily for manufacturing and other industries. Agricultural uses include sugarcane and pineapple fields, as well as the cultivation of other fruits, vegetables, and specialty crops. To the north and west, Mahi Pono manages extensive Important Agricultural Lands (IAL) designated for long-term agriculture, producing diversified crops and sustaining agricultural operations. In the broader Pūlehunui region, there are residential areas including suburban neighborhoods and rural homes. These areas offer a range of housing options from single-family homes to larger estates. The area is connected by major roads and highways, such as the Maui Veterans Highway (Route 311) which facilitates transportation and access between various parts

of Maui. There are also connections to the main town of Kahului, which serves as a commercial hub.

Pūlehunui is within the telephone service of Hawaiian Telcom along with the telephone and cable television (CATV) service area of Sandwich Isles Communication. In support of telecommunications, Sandwich Isles Communications operates a transmission tower and support building in Pūlehunui, which provides direct service to nearby DHHL communities.

The Pūlehunui CDD encompasses four (4) Tax Map Key (TMK) parcels that comprise a total area of 988.14 acres of lands privately owned or owned/managed by various state agencies, as further described in Table 1 below and shown in Figure 2:

Table 1: Pūlehunui Community Development District	
Landowner / Managing Agency	**Tax Map Key (TMK)**
MP Central A, LLC	(2) 3-8-008:007
DLNR	(2) 3-8-008:001 (por.)
	(2) 3-8-008:038;
	(2) 3-8-008:001 (por.)
DAGS / PSD	(2) 3-8-008:037 (por.)
	(2) 3-8-008:001 (por.)

Existing uses within the PCDD includes the Pu'unēnē Armory and the Pūlehunui Motorsports Park. The Armory serves as a National Guard training and emergency response site, contributing occasional noise from Chinook and Black Hawk rotary-aircraft (helicopter) operations. The Motorsports Park is a recreational site with a popular drag strip that holds multiple racing events annually.

The western border of the PCDD is bounded by Maui Veteran's Highway. The Maui Humane Society and DHHL lands referred to as Pūlehunui North (further discussed in Section 4.3) are located just across the highway. The northern border of the PCDD is bounded by Kamaaina Road which separates the PCDD from existing agricultural and industrial uses. S. Firebreak Road and Nopu Street run along the western border, facilitating access to Pūlehunui Industrial Park, Hawaiian Cement, and the Haiku Ditch reservoir. Waikapu Stream bisects the southern portion of the PCDD from east to west. Beyond the stream, DHHL lands referred to as Pūlehunui South (further discussed in Section 4.3) borders the southern PCDD boundary.

3. SUMMARY OF LAND USE INFORMATION

3.1 State of Hawai'i Land Use Plans and Policies

3.1.1 Chapter 205, HRS, State Land Use Law

The State Land Use Law, Chapter 205, Hawai'i Revised Statutes (HRS), is intended to preserve, protect, and encourage the development of lands in the State for uses that are best suited to the public health and welfare of Hawai'i's people. Under Chapter 205, HRS, all lands in the State of Hawai'i are classified by the State Land Use Commission (LUC) into one of four major categories of State Land Use Districts. These districts are identified as the Urban District, Agricultural District, Conservation District, and Rural District. Permitted uses within the districts are prescribed under Title 12, Chapter 205 (Land Use Commission), HRS, and the State Land Use Commission's Administrative Rules prescribed under Title 15, Subtitle 3, Chapter 15 HAR.

The Pūlehunui CDD is sited entirely within the State Land Use Agricultural District (See Figure 3).

The Agricultural District encompasses lands intended for cultivation of crops, aquaculture, raising livestock, development of wind energy facilities, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) – in essence, lands with significant potential for agriculture uses. Golf courses and golf-related activities approved by a county before July 1, 2005, may be allowed in this district, otherwise development of any such new facilities would be prohibited.

Uses permitted in the highest productivity agricultural categories are governed by statute. Uses in the lower-productivity categories – C, D, E or U – are established by the Commission and include those allowed on A or B lands as well as those stated under Section 205-4.5, HRS.

Non-agricultural uses within the State Land Use Agricultural District, may be permitted through the issuance of a Special Permit. Special Permits allow for uses not principally permitted in the Agricultural District, provided they align with the broader objectives of preserving agricultural land while addressing community needs. If the Pūlehunui CDD involves non-agricultural activities; obtaining a Special Permit will be a necessary step to ensure compliance with State and County regulations. Coordination with the County of Maui Planning Department and potentially the State Land Use Commission will be required to assess the compatibility of the Pūlehunui CDD with the surrounding agricultural uses and determine any necessary conditions or mitigations.

3.1.2 Chapter 205A, HRS, Hawai'i Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program was created through passage of the Coastal Zone Management Act of 1972. The U.S. Congress enacted the CZM Act to assist states in better managing coastal and estuarine environments. The CZM Act provides grants to states that develop and implement federally approved CZM plans. The goal of the CZM Act is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." Hawai'i's CZM Act, adopted as Chapter 205A, HRS, provides a basis for protecting, restoring, and responsibly developing coastal communities and resources. In Hawai'i, the "coastal zone management area" refers to all lands within the area extending seaward from the shoreline to the furthest limit of the state's police power and management authority, including the territorial sea. The Project Area is not situated within the Special Management Area (SMA) as

designated by the COM. Therefore, SMA permits will not be required to implement the Pūlehunui CDD.

3.1.3 Chapter 343, HRS, Hawai`i Environmental Policy Act

The Environmental Policy Act, Chapter 343, HRS, establishes a system of environmental review which ensures that environmental concerns in the State of Hawaii are given appropriate consideration in addition to economic and technical consideration in decision making. A project or action is subject to a Chapter 343 process through an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) if it applies to the following triggers:

1. The use of state or county lands or funds;
2. Any proposed use of land within the conservation state land use district;
3. Any proposed use or development within the shoreline area;
4. Any proposed use within any historic site as designated in the National Register or Hawai'i Register;
5. Any proposed use within the Waikiki Special District;
6. Any proposed amendments to the existing county general plan where the amendment would result in designations other than agriculture, conservation, or preservation, except actions proposing any new County general plan or amendments to the existing County general plan initiated by the County;
7. Any proposed reclassification of any land classified as a conservation district by the State land use commission under Chapter 205, HRS;
8. Any proposed new, or the modification of existing, helicopter facilities with the State that may, by way of their activities, affect:
    a. Any land classified as a conservation district by the State land use commission;
    b. A shoreline area; or
    c. Any historic site as designated in the National Register or Hawai'i Register
9. Any proposed wastewater treatment unit, except an individual wastewater system or wastewater treatment unit serving fewer than fifty single-family dwellings or the equivalent;
10. Any proposed water-to-energy facility;
11. Any proposed landfill;
12. Any proposed oil refinery; or
13. Any proposed power-generating facility

Chapter 343, HRS, was enacted to establish a policy to encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and

enrich the understanding of the ecological systems and natural resources important to the people of Hawai'i.

This project shall trigger Chapter 343 compliance due to its use of state lands and funds. However, the specific nature of this compliance will depend on the full scope of the final proposed action and its potential for significant environmental impact. Depending on these factors, the project may require either an Environmental Assessment (EA) or a more comprehensive Environmental Impact Statement (EIS) to ensure compliance with Chapter 343, HRS.

3.2 County of Maui Land Use Plans and Policies

3.2.1 Maui County General Plan

The Maui County General Plan (General Plan) provides a series of ordinances that help direct the future growth and policy creation in the county. The General Plan acts as an over-arching values statement and is an umbrella policy document for the Countywide Policy Plan (CWPP), the Maui Island Plan (MIP) and the nine Community Plans. These documents are designed to be a key resource for County staff in assuring that the goals and policies of these plans are reflected in day-to-day operations. Enforcement of the plans comes in a variety of ways, including specific land-use regulations, which involve the application of county, state and federal ordinances, and the review and processing of development projects that help direct the future growth and policy creation in the County.

The Maui Island Plan (MIP) provides a more detailed, island-specific vision that reflects the island's unique challenges and opportunities. The HCDA's planned objectives in Pūlehunui are consistent with many of the MIP's goals, particularly in areas of land use, infrastructure, and cultural preservation:

- **Land Use and Zoning:** The HCDA plans to develop State lands within the Pūlehunui CDD while adhering to existing county, state, and federal guidelines. This aligns with the MIP's focus on sustainable land use, ensuring that development does not exceed the island's capacity to support growth while maintaining environmental and cultural integrity.
- **Infrastructure and Connectivity:** The MIP emphasizes the importance of robust transportation and utility infrastructure to support growth. The HCDA's planned improvements, including roads, water, sewer, and electricity, align with this goal, ensuring that infrastructure development supports the broader needs of the island while connecting with neighboring lands and communities.
- **Cultural and Historic Preservation:** The HCDA's goal of preserving cultural and archaeological resources in the district complements the MIP's objective to protect and celebrate Maui's cultural heritage. This supports the General Plan's values of maintaining the island's identity while accommodating growth.

3.2.2 Countywide Policy Plan

The Countywide Policy Plan, adopted in March 2010, is a comprehensive policy document guiding the development of Maui County through the year 2030. It establishes broad goals and objectives

that set the direction for the County's future, serving as a framework for the Maui Island Plan and the nine Community Plans. The General Plan's core themes include the following initiatives:

1) Protect the natural environment;
2) Preserve local cultures and traditions;
3) Improve education;
4) Strengthen social and healthcare services;
5) Expand housing opportunities for residents;
6) Strengthen local economy;
7) Improve parks and public facilities;
8) Diversify transportation options;
9) Improve physical infrastructure;
10) Promote sustainable land use and growth management; and,
11) Strive for good governance.

Key Objectives for Pūlehunui:

- **Environmental Protection & Sustainability**: The HCDA prioritizes sustainable land use and environmental responsibility, aligning with the CWPP's goal to protect Maui's natural environment and manage growth responsibly.
- **Cultural Preservation**: The HCDA's focus on preserving cultural and archaeological resources in the Pūlehunui CDD supports the CWPP's commitment to safeguarding local cultures and traditions.
- **Economic Development**: Infrastructure improvements and the development of an industrial business park in Pūlehunui support the CWPP's objectives to strengthen the local economy, create jobs, and expand housing opportunities.
- **Infrastructure & Connectivity**: The planned development of essential infrastructure (water, sewer, roads, etc.) supports the CWPP's goal of improving physical infrastructure and diversifying transportation options, ensuring the area is well-equipped to accommodate future growth.
- **Public Services & Governance**: The HCDA's collaborative approach with stakeholders ensures good governance, transparency, and community engagement, reflecting the CWPP's emphasis on inclusive decision-making and strengthening public services.

3.2.3 Maui Island Plan

The Maui Island Plan (MIP), adopted in December 2012, identifies and addresses many factors that influence the physical, social, and economic development of the island, as well as identifying areas appropriate for future urbanization and revitalization. The MIP also identifies and addresses key environmental, housing, and economic development issues relevant to Maui's current and

future generations. The MIP, a key component of the County's General Plan, outlines a long-term vision for growth and development on the island. It provides a framework for balancing development with environmental stewardship and cultural preservation, particularly in areas like Pūlehunui, which have significant historical and agricultural value. The Maui Island Community Plans reflect the unique characteristics of each Community Plan Area, including the Kihei-Makena community, which encompasses Pūlehunui. The HCDA's planned objectives for the Pūlehunui CDD are closely aligned with the MIP's guiding principles, especially regarding sustainability, housing, economic development, and cultural preservation.

Key Objectives for Pūlehunui:

- **Sustainable Development & Environmental Stewardship**: The HCDA's commitment to sustainable land use in the Pūlehunui CDD aligns with the MIP's goal of promoting development that respects the island's environment. This includes responsible infrastructure planning and minimizing environmental impact.
- **Cultural Preservation**: The MIP emphasizes the importance of preserving cultural and historical resources, which is reflected in the HCDA's plan to protect archaeological sites and traditional practices within Pūlehunui, an area rich in historical and cultural value.
- **Economic Development**: The HCDA's infrastructure improvements and development of an industrial business park support the MIP's objectives to strengthen Maui's economy, particularly in areas identified for future growth like Pūlehunui.
- **Urbanization & Revitalization**: The MIP identifies areas suitable for urbanization, and the HCDA's development of the Pūlehunui CDD, with its planned public services, infrastructure, and business park, is in alignment with the MIP's goals for revitalizing and developing key areas on the island.
- **Community Characteristics**: The HCDA's approach respects the unique characteristics of the Kihei-Makena community (which includes Pūlehunui) by ensuring that development complements both the existing agricultural landscape and the needs of local residents.

3.2.4 Kīhei-Mākena Community Plan

The Kīhei-Mākena Community Plan is one of nine community plans tailored to address the unique aspects of different regions within Maui. The plan was adopted in 1998 and designates land uses within Pūlehunui to ensure continuity in development while preserving the character and needs of the community. The HCDA's objectives for the Pūlehunui CDD align with the principles set forth in the plan, particularly in the areas of land use, community character preservation, and responsible development.

Key Objectives for Pūlehunui:

- **Land Use & Development Continuity**: The HCDA's development of the Pūlehunui CDD follows the land use designations in the Kīhei-Mākena Community Plan, ensuring that development occurs in a way that respects the region's zoning and promotes orderly growth.

- **Preserving Community Character**: The HCDA is committed to preserving the character of Pūlehunui, an area that holds historical, agricultural, and cultural significance. The planned development will respect these aspects, ensuring that growth enhances, rather than disrupts, the established community values.
- **Sustainable Infrastructure & Community Needs**: The HCDA's focus on sustainable infrastructure improvements, including water, sewer, and transportation, aligns with the Community Plan's goals of supporting responsible development that meets the region's long-term needs while protecting the environment and local resources.
- **Supporting Local Agriculture & Economy**: The HCDA's efforts to interconnect the Pūlehunui area with surrounding agricultural lands and create an industrial business park support the plan's objective of fostering economic growth while preserving agricultural opportunities.

3.2.5 South Maui Community Plan

The South Maui Community Plan is an updated version of the Kīhei-Mākena Community Plan, reflecting the region's evolving needs and challenges. A draft of this plan was presented in February of 2024, but the final plan has yet to be finalized. The South Maui Community Plan offers a current vision for the future of South Maui, outlining guidance for land use, environmental stewardship, and community development. It aims to ensure sustainable growth while preserving the area's cultural and natural resources.

Key Objectives for South Maui region:

- **Complete and Connected Transportation Network:** Focuses on improving mobility through expanded transportation options, including bike, pedestrian, and public transit networks, to reduce reliance on cars and alleviate congestion.
- **Ready and Resilient Systems:** Emphasizes the need for sustainable infrastructure to support growing demands while mitigating risks from climate change-related hazards such as flooding, erosion, and drought.
- **Mauka to Makai Watershed Management**: Adopts a holistic approach to land management inspired by the Native Hawaiian ahupua'a system. The goal is to restore watersheds, reduce pollution, and enhance resilience against extreme weather events.

Additionally, the South Maui Community Plan proposes new county zoning designations for the Pūlehunui CCD. While portions of the Pūlehunui CDD shall remain within the Agricultural Zoning designation, the South Maui Community Plan also introduces the Employment Center (EC) and Public / Quasi-Public (PQP) zoning designations (See Figure 4).

The EC community plan designation is intended to encourage a range of employment uses. These areas may also include amenities that serve the employees that work there. Development in these areas should include ample multimodal options and may include some parks or civic spaces. Retail and/ or commercial uses that serve regional needs beyond the area of the RC are not permitted.

Development must follow the scale and character of the surrounding area until design standards are established by the Council.

The PQP community plan designation is intended to provide facilities for public use or benefit. Many of the uses in this designation are also allowed in other districts, but this designation is typically for planned or existing larger-scale government, non-profit, or educational uses.

3.2.6 County of Maui Zoning

Title 19, Article II of the COM Code, also known as the Comprehensive Zoning Ordinance (CZO), provides regulations and standards for land development and the construction of buildings and other structures in the COM. In accordance with the land use directives of the HRS, the revised charter of the COM (1983), as amended, and the general plan and the community plans of the county. The CZO will encourage orderly development that is compatible with Maui's scenic beauty and environment, and promote and protect the health, safety, and welfare of the people of the county.

The Maui County Zoning Administration and Enforcement Division (ZAED) administers the enforcement of State and County land use laws, codes, regulations, and the general and community plans. The Zoning Administration and Enforcement serves as primary departmental advisory and information branch regarding the interpretation and application of codes, ordinances, decision and orders, and other matters of enforcement.

According to the CZO, the Pūlehunui CDD is currently situated entirely within the Agriculture district (See Figure 5). The purpose of the Agriculture district is to:

1. Implement Chapter 205, HRS, and the goals and policies of the Maui County general plan and community plans;
2. Promote agricultural development;
3. Preserve and protect agricultural resources; and
4. Support the agricultural character and components of the County's economy and lifestyle.

The intent of the agricultural district is to:

9. Reduce the land use conflicts arising from encroachment of nonagricultural uses into agricultural areas;
10. Mitigate rising property values of farmlands to make agricultural use more economically feasible;
11. Discourage developing or subdividing lands within the agricultural district for residential uses, thereby preserving agricultural lands and allowing proper planning of land use and infrastructure development;
12. Discourage establishment of nonagricultural subdivisions;

13. Ensure that the rezoning of land from the agricultural district shall be open for public debate and in the overall public interest, as evidenced by conformance with the Maui County general plan and community plan land use designations and policies, State land use law, this chapter and good planning practices; and
14. Notify the public that lands within the agricultural district are used for agricultural purposes. Owners, residents, and other users of such property or neighboring properties may be subjected to inconvenience, discomfort, and the possibility of injury to property and health arising from normal and accepted agricultural practices and operations. Such normal and accepted agricultural practices and operations include but are not limited to noise, odors, dust, smoke, the operation of machinery of any kind, including aircraft, and the storage and disposal of manure. Owners, occupants, and users of such property or neighboring properties shall be prepared to accept such inconveniences, discomfort, and possibility of injury from normal agricultural operations.

Within this zoning district, permitted uses are primarily focused on agricultural production and related activities to preserve agricultural lands and promote farming operations. Key permitted uses within the Agricultural District include:

1. Primary Agricultural Activities:
    a. Cultivation of crops (fruits, vegetables, flowers, etc.)
    b. Raising livestock, poultry, and aquaculture
    c. Forestry and other agricultural uses
2. Accessory Uses:
    a. Farm dwellings and employee housing directly supporting agricultural operations
    b. Agricultural retail structures for selling farm products grown on-site
    c. Agricultural tourism activities (e.g., farm tours)
3. Special Uses (with a Special Use Permit):
    a. Agricultural processing and storage facilities
    b. Renewable energy projects (e.g., solar farms)
    c. Public and quasi-public facilities supporting agricultural operations
4. Conditional Uses (Requiring a County Conditional Permit - CP):
    a. Certain commercial activities related to agriculture
    b. Limited industrial uses tied to agricultural production

While the HCDA's planned objectives align with many county planning goals, the agricultural zoning restrictions present challenges. If aspects of the project require rezoning from Agriculture to Urban or Rural, this will involve a public process and compliance with Maui's General and Community Plans. The CZO also discourages non-agricultural subdivisions and development that

conflicts with agricultural activities. Proposed projects must demonstrate compatibility with agricultural uses or justify the necessity for rezoning. Further, any rezoning efforts must include transparent community engagement.

4. EXISTING CONDITIONS

4.1 Climate

The climate in Pūlehunui, Maui, is relatively stable throughout the year, typical of much of Hawai'i's semi-tropical environment. Although Maui experiences a range of microclimates, Pūlehunui generally enjoys mild, consistent temperatures with moderate humidity and steady trade winds from the north and northeast. Average temperatures in Pūlehunui fluctuate modestly, from a high of about 88°F in September, the warmest month, to around 63°F in February, the coolest month, according to weather data gathered from the nearby Kahului Airport. Rainfall in Maui varies considerably by region; northeastern shores receive the bulk of precipitation, while central and southern areas, like Pūlehunui, tend to remain dry. Kahului Airport records an annual rainfall average of approximately 18.23 inches, with January typically being the wettest month and June the driest. Whereas Pūlehunui could experience less than 10 inches of rain per year.

4.2 Topography

The topography of each site plays a crucial role in determining the placement, layout, and design of the facility, as well as the associated costs of site preparation and construction. Sites with a relatively flat topography, having a slope ranging from 0 to 8 percent, are preferred over sites with significant variations in elevation (See Figure 6). Sites with slopes between 8 to 14 percent are less desirable, but construction practices can be used to mitigate potential issues. Generally, areas with significant slopes (greater than 14 percent) are to be avoided. Within the Pūlehunui CDD, the only areas with this level of slope are located around the southern edge of the district near the Kolaloa Gulch drainage.

4.3 Soils

Three major soil suitability studies evaluate the physical characteristics of land and their corresponding productivity for agricultural use in Hawai'i. These studies are:

- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's Soil Survey
- University of Hawai'i Land Study Bureau's Detailed Land Classification
- State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH) system

Figure 7 shows the soil classifications by the USDA Natural Resources Conservation Service Soil Survey. The Pūlehunui CDD includes the following soil types:

- Ewa silty clay loam, 0 to 3 percent slopes (EaA): well drained, low runoff
- Ewa cobbly silty clay loam, 0 to 3 percent slopes (EcA): well drained, low runoff
- Ewa cobbly silty clay loam, 3 to 7 percent slopes (EcB): well drained, low runoff

- Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2): well drained, high runoff
- Waiakoa silty clay loam, 3 to 7 percent slopes (WeB): well drained, medium runoff
- Alae sandy loam, 3 to 7 percent slopes (AaB): excessively drained, low runoff
- Pulehu clay loam, 0 to 3 percent slopes (PsA): well drained, low runoff
- Pulehu cobbly silt loam, 0 to 3 percent slopes (PrA): well drained, low runoff
- Pulehu silt loam, 0 to 3 percent slopes (PpA): well drained, low runoff
- Alae cobbly sandy loam, 0 to 3 percent slopes (AcA): excessively drained, low runoff
- Alae cobbly sandy loam, 3 to 7 percent slopes (AcB): excessively drained, low runoff

Soils with moderate to low runoff, stable compositions, and less propensity for erosion are typically the most suitable for construction projects, requiring less intensive groundwork and offering more reliability for foundational support.

The productivity rating system developed by the University of Hawai'i Land Study Bureau (LSB) categorizes soils into five classes, ranging from "A" to "E." Class "A" represents soils with the highest agricultural productivity, indicating the best conditions for crop growth, while Class "E" represents soils with the lowest productivity, suggesting limited agricultural potential. This classification helps in assessing the suitability of land for agricultural use based on factors such as fertility and capability to support crops. In the proposed project area, the majority of the land falls under the lowest productivity category, indicating limited suitability for agricultural purposes.

4.4 Wetlands

Wetlands are areas often covered by surface or groundwater, which support vegetation or aquatic life adapted to moist or seasonally moist soil conditions. Disturbing or losing these areas can lead to negative outcomes, such as habitat destruction, increased risk of flooding, and diminished groundwater replenishment. Developing lands classified as wetlands also demands significant time and resources to adhere to regulatory reviews and approvals.

Within the project area there is one defined non-perennial stream flowing from east to west, referred to as Waikapu Stream (See Figure 8). Additionally, there are irrigation ditches (Haiku Ditch) and an irrigation reservoir (Haiku Reservoir) that are remnants from previous and current use for plantation agriculture. Avoiding ditches and gulches for new developments is advisable due to several environmental, safety, and engineering reasons. These areas serve as natural drainage pathways during rainfall, and development in these areas can obstruct natural flow paths, increasing the risk of flooding. Additionally, these areas are prone to erosion, are vital habitats for wildlife, and serve as natural filters that purify water. Development in proximity to or directly on ditches and gulches may also require additional ongoing maintenance, which could increase long-term costs and liability for developers and property owners.

4.5 Historic and Cultural Resources

The preservation and protection of sensitive natural and cultural resources are of critical importance in Hawai'i. Avoiding potentially sensitive areas is an important first step in the planning process. According to the information from USFWS IPaC, several listed species may be present near the project area, including the endangered Hawaiian hoary bat, Hawaiian Petrel, Hawaiian Stilt and the threatened Newell's Shearwater. However, Pūlehunui CDD does not contain critical habitat for rare, threatened, or endangered species.

The entire district was previously utilized for plantation agriculture and was subject to associated land disturbance. Previous archaeological surveys in the area have identified historic resources associated with military use (Naval Air Station Pu'unēnē) and plantation agricultural use, but no historic properties related to traditional Hawaiian use of the lands or culturally sensitive remains were identified.

For the purposes of this screening analysis, none of the areas within the district were identified as containing sensitive natural or cultural resources. Detailed natural and cultural resources surveys will be conducted as part of the environmental impact statement for the Pūlehunui CDD

4.6 Natural Hazards

The risks associated with flood hazards, tsunami evacuation zones, and areas exposed to sea level rise must be carefully considered when selecting development sites. Floodwater and tsunamis can significantly impair the facility's operations, endanger security, and threaten the safety of occupants, in addition to causing structural damage. Coastal regions are becoming more susceptible to inundation and erosion, emphasizing the importance of choosing sites that are not severely exposed to sea level rise risks.

Figures 9, 10, and 11 highlight areas prone to floods, tsunamis, and a potential 3.2-foot increase in sea level, respectively. None of the district is within the 3.2-foot sea level rise exposure area. Only a small portion of the Kolaloa Gulch drainage in the southwest corner of the district falls within the floodplain (Flood Zone A: Areas with a 1% annual chance of flooding). Additionally, the southwest border of the district along Maui Veterans Highway lies within the extreme tsunami evacuation zone. However, the majority of the Pūlehunui CDD is not located within a sea level rise, flooding, or tsunami hazard area.

4.7 Infrastructure

The following sections of this PAR address and outline the existing conditions of roadway, water, wastewater, drainage, and electrical infrastructure within the Pūlehunui Community Development District (Pūlehunui CDD). These sections are based on available information sourced from existing documents, which are further detailed in Section 4 of this PAR. All technical studies—including traffic, electrical, hydrology, water resources, and wastewater assessments—have been completed by the subconsultant teams. The findings from each have been fully incorporated into this PAR and the accompanying IMP.

4.7.1 Roadway Infrastructure

External to the project area, north-south traffic through the Pūlehunui region is primarily served by Maui Veterans Highway and supplemented by local roadways such as Mehameha Loop and Nopu Street. Internal to the project area, existing roadways include the Kamaaina Road, portions of South (S.) Firebreak Road and Motor Sports Park Access Road. A brief description of the existing roadways in the vicinity of the project are included below.

External Roadways

- *Maui Veterans Highway* - Maui Veterans Highway or Route 311 (formerly referred to as Mokulele Highway) is a predominantly four-lane, two-way State of Hawaii principal arterial generally oriented in the north-south direction. The north end of Maui Veterans Highway starts as a continuation of Puunene Avenue continues south and terminates at the intersection with North Kihei Road where it becomes Piilani Highway. It should be noted that in the vicinity of the project, there is a stub out along the northbound direction of the highway approximately 1,700 feet south of the intersection with Kamaaina Road. The stub out segment is unstriped and measures approximately 100 feet long.
- *Mehameha Loop* - Mehameha Loop is a predominantly two-lane, two-way County of Maui roadway located west of Maui Veterans Highway that intersects the highway at two locations. On the north end of the roadway, Mehameha Loop intersects the highway at the intersection with Kamaaina Road then continues southward past the Maui Humane Society and intersects the highway again on the south end of the roadway at the intersection with the Motor Sports Park Access Road.
- *Nopu Street* – Nopu Street is an unstriped, two-way roadway generally oriented in the north-south direction that provides access through the Pūlehunui Industrial Park. This roadway originates at S. Firebreak Road and continues southward towards its terminus at a cul-de-sac on the south side of the industrial park. It should be noted that there are a number of speed humps currently installed along the roadway alignment within the industrial park.

Internal Roadways

- *Kamaaina Road* - Kamaaina Road is an unstriped, two-way roadway generally oriented in the east-west direction that runs along the north side of the Pūlehunui CDD. Kamaaina Road originates at the intersection with Maui Veterans Highway and Mehameha Loop (North) and continues east until its terminus at S. Firebreak Road.
- *S. Firebreak Road* - S. Firebreak Road is an unstriped, two-way State of Hawaii road that runs along the east side of the Pūlehunui CDD. This road originates north of Kamaaina Road as a generally north-south oriented roadway that transitions to a generally east-west roadway east of Nopu Street. It should be noted that there is a gate located along the roadway west of Nopu Street that constricts the roadway width to one lane, but the roadway widens beyond the gate and provides access to the nearby Hawaiian Cement Base yard and the Pūlehunui CDD parcel TMK (2) 3-8-008-001. In addition, it should be noted that north of Kamaaina

Road, S. Firebreak Road is an unpaved, access-controlled roadway providing access to adjacent agricultural areas.

- *Motor Sports Park Access Road* - Motor Sports Park Access Road (also known as the Maui Raceway Park Access Road and Pūlehunui Motorsports Park Access Road) is an unstriped two-way roadway State of Hawaii roadway that provides access to the Army National Guard Armory and the Maui Raceway Park. The roadway originates at the at the intersection with Maui Veterans Highway and Mehameha Loop (South) and continues east till it's terminus near the Maui Motocross Track. It should be noted that there is an existing connection between this roadway and Nopu Street that is currently gated.

Intersections

Maui Veterans Highway, Mehameha Loop (North), and Kamaaina Road

Maui Veterans Highway intersects Mehameha Loop (North) and Kamaaina Road near the north end of the Pūlehunui CDD. At this signalized intersection, the northbound and southbound approaches along Maui Veterans Highway have an exclusive left-turn lane, two through lanes, an exclusive right-turn lane. The eastbound approach of Mehameha Loop (North) has one lane that serves all traffic movements, while the westbound approach on Kamaaina Road includes an exclusive right-turn lane and a shared through and left-turn lane.

Maui Veterans Highway and Mehameha Loop (South)

Near the south end of the Pūlehunui CDD, Maui Veterans Highway intersects Mehameha Loop (South) and the Motor Sports Park Access Road. At this unsignalized intersection, the northbound approach along Maui Veterans Highway has an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane while the southbound approach has an exclusive left-turn lane, one through lane, and a shared through and right-turn lane. The eastbound approach from Mehameha Loop (South) includes a stop-controlled lane that serves all traffic movements while the westbound stop-controlled approach from the Motor Sports Park Access Road includes an exclusive right-turn lane and a shared through and left-turn lane.

S. Firebreak Road Intersections with Kamaaina Road and Nopu Street

S. Firebreak Road intersects Kamaaina Road near the north end of the Pūlehunui CDD and Nopu Street near the Pūlehunui Industrial Park. At the unsignalized intersection with Kamaaina Road, the approaches along S. Firebreak Road includes one lane that serves all allowable turning movements. As previously noted, S. Firebreak Road is unpaved north of this intersection with access controlled on the north and east sides of the intersection. The Kamaaina Road approach of this intersection includes a stop-controlled lane that serves all allowable traffic movements. It should be noted that given the limited paving on the north and east sides of the intersection, the intersection appears to function more like a curved transition between Kamaaina Road and S. Firebreak Road.

At the intersection with Nopu Street, the southbound approach from S. Firebreak Road is uncontrolled while the northbound approach from Nopu Street has one stop-controlled lane that

serves all turning movements. The westbound approach of the intersection also has one stop-controlled lane that serves all turning movements.

Multimodal Facilities

Pedestrian Facilities

Pedestrian facilities in the vicinity of the Pūlehunui CDD are currently limited to an existing shared-use path along the east side of Maui Veterans Highway. The path starts at the intersection with Hoerle Street near Kahului and extends southward beyond the transition of Maui Veterans Highway to Piilani Highway. In the vicinity of the Pūlehunui CDD, a grass buffer separates the travel way from the paved shared-use path. Pedestrian crossings at the intersections with Mehameha Loop (North) and Kamaaina Road are facilitated by marked crosswalks and signalized pedestrian crossings while those at the intersection with Mehameha Loop (South) and the Motor Sports Park Access Road are facilitated by marked crosswalks. Within the Pūlehunui CDD, there are currently no improved pedestrian facilities provided along Kamaaina Road, S. Firebreak Road, or the Motor Sports Park Access Road.

Bicycle Facilities

As previously mentioned, there is an existing shared-use path along the east side of Maui Veterans Highway with a grass buffer separating the travel way from the path. This path accommodates pedestrian and bicycle traffic along the highway with crossings at the existing intersections facilitated by marked crosswalks and a traffic signal system at the intersection with Mehameha Loop (North) and Kamaaina Road. Within the Pūlehunui CDD, there are currently no dedicated bicycle facilities provided along Kamaaina Road, S. Firebreak Road, or the Motor Sports Park Access Road with all bicyclists required to share the travel way with vehicular traffic.

Transit Facilities

Transit service in the vicinity is provided by the "Maui Bus" which is operated by Roberts Hawaii under a public-private partnership with the County of Maui. The Maui Bus public transit service consists of twelve (12) bus routes that operate seven days a week, including all holidays. These routes provide transit service in and between the Central, South, West, Haiku, Kula and Upcountry Maui communities. It should be noted that although there are transit routes that utilize Maui Veterans Highway such as the Kihei Island (Route 10), there are currently no bus stops located in the vicinity of the Pūlehunui region.

In addition to the Maui Bus public transit service, Maui Bus also offers the Maui Bus ADA Paratransit program, Maui Bus Commuter Service, and the Maui Economic Opportunity, Inc. (MEO) Human Services Transportation. The Maui Bus ADA Paratransit Program is an advanced reservation, curb-to-curb service for people with disabilities who are unbale to use the regular fixed route public transit service. These services are available along corridors that are within three-fourths of a mile on each side of each fixed Maui Bus route. Maui Bus Commuter Service is designed for early morning and evening commuters and augments the existing Maui Bus public transit service. The commuter service includes four commuter routes, all operated by Roberts Hawaii. The Haiku-Wailea Commuter Route travels along Maui Veterans Highway, but similar to

the Maui Bus Route 10, the commuter route has no stops in the vicinity of the Pūlehunui CDD. Finally, the MEO operates the Human Services and Maui Bus Paratransit Services, which provides specialized service throughout Maui County, including door-through-door service to clients living within three-quarters of a mile of the fixed route.

4.7.2 Water Resources

An assessment of water resources within the Pūlehunui region was completed in January 2025 by INTERA Inc. The goal of this assessment was to evaluate existing water resources and systems currently in place, highlight limitations with the existing structure, and identify broader obstacles or concerns that may limit how the Pūlehunui site is developed. The information outlined in this report will help determine how strategies for managing water resources can guide future development and achieve water resilience. The completed assessment shall be summarized in the following sections and appended to this PAR as Appendix A.

Surface Water Resources

Water supply remains a key concern for Pūlehunui. The County of Maui Department of Water Supply (DWS) services some users, including the Armory, through a connection to the Central Water System, which sources water from the ʻĪao and Waiheʻe Aquifers and treated surface water. The Pūlehunui Regional Project is projected to require 1.36 MGD of water, with primary demand driven by industrial and commercial uses.

Hawaiʻi's State Water Code (HRS §174C) governs water allocation, balancing commercial, municipal, and traditional Hawaiian uses while ensuring long-term resource sustainability. The Commission on Water Resource Management (CWRM) regulates groundwater and surface water withdrawals, with evolving legal frameworks that could impact future supply.

Options for accessing potential surface water resources include the available base flow in streams or ditches, reallocating permitted uses, improving ditches, capturing high stream or ditch flows, and stormwater flow. Near the study area, the Na Wai ʻEhā surface water features consist of perennial flow from:

- Waikapū Stream,
- Waiheʻe River,
- Waiehu Stream, and
- Wailuku River.

The upper reaches of the Na Wai ʻEhā streams flow perennially due to groundwater discharge, and the lower reaches generally lose streamflow to the subsurface. Non-perennial surface waters within the study area include the Kolaloa Gulch, Pulehu Gulch, Keahuaiwi Gulch, and tributaries of Waikapu Stream. The Kolaloa Gulch runs through the southern part of the Pūlehunui CDD. Kealia Pond is located southwest and the Kanaha Pond is located north of the site. Watersheds in Central and East Maui include the Hapapa, Iao, Kailua Gulch, Kalialinui, Pohakea, Waiakoa, Waiehu, Waihee, and the Waikapū.

The East Maui Irrigation (EMI) transmission system is made up of 24 miles of ditches and 50 miles of tunnels, weirs, flumes, small dams, ditches, and stream diversion intakes. The four license areas for the EMI include: Nahiku, Ke'anae, Honomanu and Huelo. The revocable permits associated with these licenses are issued by the DLNR yearly but there is a more recent proposal for a long-term water license for the EMI, which would allow private oversight of the system for a 30-year period.

The EMI system consists of 36 streams. Thirty-four (34) of these streams have had stream water diversions from the EMI system. The EMI system was originally constructed to irrigate sugarcane plantations in east and central Maui, dating back to the late 1800s. EMI is allotted a certain volume of water for agricultural and domestic use. EMI provides water to the County of Maui DWS, County of Maui Agricultural Park, Historic/Industrial Uses, Diversified Agriculture, and reserves water for reservoir, fire protection, system losses, etc.

In the Na Wai 'Ehā area, surface waters are primarily diverted through the Wailuku Water Company, LLC (WWC; previously Wailuku Sugar) ditches and Mahi Pono (previously Hawaiian Commercial & Sugar Co.) reservoir/ditch system. There are seven active diversions: one located on South Waiehu Stream, two on Waikapū Stream, two on Wailuku River, and two on Waihe'e River.

The Haiku Ditch is a primarily tunneled system spanning 9.7 miles. The Ha'ikū Ditch that crosses the Pūlehunui CDD site and discharges into the Hawaiian Commercial & Sugar Company (HC&S) reservoir, known as Ha'ikū Reservoir. Due to the proximity to the Pūlehunui CDD, the Ha'ikū Ditch and Reservoir are considered to be the most feasible surface water resources for water diversion on site. As it is operated currently, the Ha'ikū Ditch occasionally runs dry in the summer months when irrigation demand is high and available surface water is low.

Groundwater Resources

Pūlehunui is in the Kahului and Pā'ia Aquifer Systems The aquifer system boundaries are defined by the CWRM and are used to delineate areas of groundwater recharge and source analysis, as well as in calculating a groundwater sustainable yield for each aquifer to manage water usage allocation.

The isthmus area on Maui, or Central Maui, is bound by older Mauna Kahālāwai volcanics to the west and the younger Haleakalā volcanics to the east. These volcanics are overlain by thin sedimentary deposits – thicker and consolidated deposits overlaying the older Wailuku Basalt of Mauna Kahālāwai, and thinner, generally unconsolidated deposits overlaying younger Kula volcanics and Honomanū Basalts of Haleakalā.

'A'ā and pāhoehoe flows are very permeable and form good aquifers. Thick or ponded lava flows are less permeable and act as impediments to groundwater flow. While dikes and faults also occur in the subsurface and surface of Maui, they are not present in the central region of focus and are mainly concentrated in the mauka portions of the island and along rift zones. All of these geologic features may affect groundwater flow in Maui. Hawaiian hydrogeology is categorized by Izuka et al. (2018) into four principal settings:

- Freshwater lens (basal aquifer) in highly permeable lava flows. These are often located in shield stage volcanics throughout the Hawaiian Islands and are a valuable resource in Maui in the Honomanū and Wailuku Basalts.
- Dike-impounded groundwater associated with rift zones and calderas. These are not significant sources of groundwater in the area of focus.
- Perched groundwater. These are not a significant source of groundwater in the areas of focus.
- Caprock groundwater. Caprock groundwater is found in marine and subaerial sediments along the coast.

There are two potential water bearing units within the study area – Caprock and Honomanū Basalt. While Kula Volcanics are also present in the eastern Central Maui area, the possible perched aquifers are relatively small compared to the basal aquifers of the underlying basalt.

The caprock is composed of consolidated and unconsolidated deposits of sands, gravels, and eolian sands. These caprock units overlay the highly permeable Honomanū Basalts. The consolidated and unconsolidated deposits have relatively low permeability apart from coralline limestone deposits. A layer of saprolite and older alluvium separates the Wailuku Basalt from the Honomanū Basalts along an unconformity. The basal freshwater lens is relatively thin throughout the isthmus, and groundwater discharges from the aquifer on the northern and southern coasts.

Groundwater hydraulic units have been established by the CWRM to provide a consistent basis for managing the State's groundwater resources. The system divides the islands into Aquifer Sectors and Aquifer Systems. The aquifers on West Maui are divided into two main sectors, each encompassing multiple hydraulically connected management systems (CWRM, 2018). The Central Aquifer Sector extends from the western portion of the isthmus tracing from the western edge of the Kahului Bay down to Mā'alaea. It then extends to the southwestern rift zone of Haleakalā for its southern boundary and up the coast to Haiku tracing mauka along the northeastern rift zone. The sector is divided into four aquifer systems: Kahului, Pā'ia, Makawao, and Kama'ole. Aquifer Sectors are usually delineated by structural geologic boundaries, although sometimes anthropogenic boundaries influence sector and system boundaries. Aquifer Systems are components of sectors and may be hydraulically connected. The boundaries between Kahului, Pā'ia, and Makawao are designated mostly on historical agricultural practices.

The Kahului Aquifer System makes up the portion of the isthmus mostly covered by alluvial deposits. Its main water source is the thin basal aquifer lens in the Honomanū volcanics, from which both fresh and brackish water pumpage are reported. Groundwater levels range from 2 to 6 ft msl and is mainly recharged through irrigation runoff from the EMI System and Wailuku Irrigation Company. Recharge due to rainfall is insignificant due to minimal rainfall along the western flank of East Maui and along the isthmus.

The Pā'ia Aquifer System extends up the northwestern flank of Haleakalā to about 1500 ft msl elevation. It is bound by the Waiakoa stream to the south and the northeastern Haleakalā rift

system to the north. Its delineation from the Makawao aquifer system follows along the sugarcane agriculture extent boundary.

The CWRM records indicate there are 243 water wells in the Pā'ia and Kahului Aquifer Systems as of March 2024. Of the records collected, 132 are characterized as active. Active wells are categorized as agriculture (n=18), domestic (n=16), industrial (n=33), irrigation (n=51), and municipal (n=14) uses. The other 111 records are categorized as observation (n=17), unused (n=41), and abandoned (n=53). The freshwater is sourced through the basal aquifer lens in the Honomanū volcanics.

Existing Water Supply System

There is no existing water system distribution within the DLNR-IBP and a few transmission mains surrounding CDD. An existing Department of Water Supply (DWS) 8-inch waterline in Kamaaina Road provides water to the Hawaiian Cement parcel (TMK: 3-8-008:031), and 12-inch waterline connected to a 36-inch transmission main provides service for the Puunene Army National Guard Armory. Additionally, there are existing 8-inch, 12-inch, and 36-inch transmission mains located in Maui Veterans Highway

4.7.3 Wastewater Systems

Existing Wastewater Infrastructure

There are currently no existing wastewater facilities serving the Project Area. The area is generally undeveloped with limited infrastructure, and any new systems constructed would primarily serve future development.

The County of Maui Wastewater Reclamation Division (WWRD) does not have a sewer collection system or wastewater treatment facility within the project vicinity. The nearest WWRD facilities are the Wailuku-Kahului Reclamation Facility (WKRF) and the Kīhei Wastewater Reclamation Facility (KWRF). The WKRF, located approximately seven miles north of the Pūlehunui Community Development District (CDD), has a design capacity of 7.9 million gallons per day (MGD) and is operating near capacity with no expansion currently planned. The KWRF, located about five miles south of Pūlehunui along Pi'ilani Highway, has a design capacity of 8.0 MGD and an estimated current flow of 4.9 MGD. However, WWRD has indicated that approximately 7.0 MGD is already permitted. As such, there is a need to construct an independent wastewater system to serve the Pūlehunui CDD and surrounding developments.

Near the Project Area, the Pūlehunui Industrial Park Wastewater Treatment Plant (WWTP) currently provides treatment for offsite domestic wastewater. The facility has a permitted maximum capacity of 20,000 gallons per day (GPD), with plans to increase capacity to approximately 40,000 GPD to accommodate additional flows. Following treatment, liquid effluent is currently disposed of via two injection wells located near the WWTP. Proposed improvements include installation of a pretreatment facility for domestic wastewater and an absorption (leach) field to replace the use of injection wells for primary effluent disposal. The existing injection wells would remain in service as a backup system.

According to State of Hawai'i data, there is one Class IV on-site disposal system (OSDS) within the Pūlehunui Industrial Park and several Class I, II, and III systems in the surrounding area.

Alternatives for wastewater treatment were evaluated as part of regional infrastructure planning efforts (refer to Section 4, *Existing Documentation*). Options considered included treatment at the existing County-owned WWRD facilities (WKRF or KWRF) or construction of a new regional facility to serve the Project Area and nearby developments. Based on the findings of these studies and coordination with agency stakeholders, the preferred alternative—Alternative 2A-1—is the construction of a new regional wastewater reclamation facility. The DHHL anticipates that a regional approach to wastewater infrastructure will be preferred, unless individual agency or project-specific constraints necessitate separate development timelines.

Criteria to Estimate Wastewater Flows

To determine the infrastructure capacity needed to serve potential wastewater customers within the Project Area, estimates of wastewater generation were developed based on applicable County and State design standards. The planning criteria used for estimating wastewater flows reflects a combination of the County of Maui Wastewater Reclamation Division (WWRD) *Wastewater Flow Standards* and the *Design Standards of the Department of Wastewater Management* (dated July 1993), as well as applicable provisions from the City and County of Honolulu (CCH) *Wastewater System Design Standards* (2017) and Hawai'i Administrative Rules (HAR) §11-62 wastewater generation factors.

These standards provide the basis for calculating projected wastewater flows at full buildout of the Project Area and for establishing appropriate design parameters for the proposed wastewater system. The resulting criteria and flow assumptions are summarized in Table 2.

Based on the application of these standards, the projected average daily wastewater flow is approximately 618,000 gallons per day (GPD) at full buildout. This estimated flow will be used to design and size the proposed wastewater collection, treatment, and disposal systems for the Project Area. Detailed wastewater flow calculations and supporting assumptions are provided in the 2025 Final Infrastructure Master Plan (IMP) prepared for the project.

Table 2: Wastewater Planning Criteria

Planning Element	Criteria
Wastewater Flow and Load From New Sewer Areas	
Ratio of Net Area to Gross Area[(1)]	0.85
Population Density (persons/unit)[(2)]	
Single Family	4.0
Multi Family	2.8
Equivalent Populations (capita/acre)[(2)]	
Community Business	140
Light Industrial	100
Wastewater Generation by Type of Establishment (gallons/capita/day)[(3)]	

Table 2: Wastewater Planning Criteria	
Institutions other than hospitals (per bed space)	125
Country clubs (per non-residential member present)	25
Average Dry Weather Flow (gallons/capita/day)[2]	
Base Sanitary Flow	70
Ground Water Infiltration	
Gravity Sewer Systems	35
Low Pressure Sewer Systems	5
Peak Base Sanitary Flow Factor[2]	2.5
Peak Wet Weather Infiltration/Inflow (gallons/day/acre)[2,4]	3,000

Notes:

1. Gross area is the portion of the parcel's net area which is developable and to which equivalent populations apply. Ratio of net to gross area is based on engineering judgement.
2. CCH Standards, Chapter 2 Design of Gravity Sewers (2017).
3. HAR Chapter 11-62 Appendix D Tables, Table I (2014).
4. For certain land uses, i.e. parks and golf courses, where not much infrastructure will be built, inflow and infiltration is applied to the area 25 feet to either side of sewer mains or laterals.

Existing sewer flows in the vicinity of the Planning Area were obtained from prior studies and reports or were estimated based on known existing land use and flow factor. Existing sewer flows are summarized in Table 3.

Table 3: Existing Sewer Flow

Land Use Description	Gross/Net Area (acres)[1]	Future Intended Land Use	Equivalent Population Factor (capita/acre)	Equivalent Population	Average Base Flow Factor	Average Daily Flow (gpd)[2]	Note
Pūlehunui Industrial Park				560[3]		20,000[3]	Outside of Planning Area
TMK 238008001 (southwest)	30[4]/25.5	Commercial	140	3,570	105 gpcpd	249,900	Existing Hawaii Army National Guard Armory – Office and storage
Maui Raceway Park		Special Use		1,100[5]	25 gpcpd[6]	27,500	Concessions and restrooms

Notes:

1. Assumes 0.85 gross to net area.
2. City and County of Honolulu Standards, assuming gravity collection system, unless otherwise noted.
3. Existing capacity of WWTP to accommodate approximately 560 persons within the Pūlehunui Industrial Park (Valley Isle Pumping, April 2021, *Final Environmental Assessment (FEA) for the Proposed Wastewater Pretreatment Facility and Wastewater Treatment Plant Improvements at Pūlehunui Industrial Park*).
4. Portion of parcel includes a 29,912 square foot building (R.M. Towill Associates, May 2016, *Pu'unene Master Plan Update*).

5. The Maui Motorcycle Association's largest event attracted 900 visitors with 200 riders (R.M. Towill Associates, May 2016, *Pu'unene Master Plan Update*).
6. Assumes wastewater generated at Maui Raceway Park is similar to Country Club use estimates for wastewater generation from HAR 11-62.

4.7.4 Drainage

There are no existing drainage improvements at the Maui Raceway Park. With the exception of several paved areas, the ground surface at the project site is largely undeveloped or consists of former large-scale agricultural fields. As a result, surface runoff generally follows the area's natural topography and existing drainage patterns.

The Project Area and surrounding region were historically used for sugar cane cultivation until operations ceased in 2016. Since then, a mix of volunteer vegetation, including grasses and cane regrowth, has become established. Existing dirt roads once used for sugar operations remain visible, although many are now overgrown. The area's soils are generally well-drained with good infiltration capacity and contain cobbles and rocks, though solid bedrock lies deep below the surface. Shallow groundwater is not a concern in this area. The semi-arid climate results in higher rates of runoff from non-irrigated landscapes due to thinner groundcover.

The overall topography is relatively flat, with slopes generally ranging from one to two percent. The Project Area is surrounded by Pu'ulehu Gulch to the north, Kolaloa Gulch to the south, and Ha'ikū Ditch to the east. Camp 6 Ditch also traverses the DLNR parcel (TMK 3-8-008:001). The general drainage flow pattern follows the natural slope of the land in a southwest direction toward Keālia Pond and ultimately the Pacific Ocean.

Within Pūlehunui South, surface runoff is conveyed through three primary drainage systems at Maui Veterans Highway:

- An eight-cell, 12-foot by 8-foot box culvert at Kolaloa Gulch;
- A triple 12-foot by 6-foot box culvert near the center of the property; and
- A nine-cell, 12-foot by 8-foot box culvert at Keāhuaiwi Gulch to the south.

Approximately 90 percent of the property drains toward the triple 12-foot by 6-foot culvert near the property's center, about 10 percent drains to Keāhuaiwi Gulch, and less than one percent drains northward to Kolaloa Gulch. All systems ultimately discharge to Keālia Pond.

An unnamed drainageway bisects Pūlehunui South and conveys runoff from an offsite drainage area of roughly 2,000 acres. This drainageway has a defined channel across much of the site; however, near Maui Veterans Highway, the channel becomes indistinct and runoff disperses across level terrain—likely the result of historical grading for sugar cane cultivation. The drainageway ultimately discharges to the central box culvert fronting the property.

Runoff from the southwest corner of Pūlehunui South collects in a low area mauka of Maui Veterans Highway. Although a large box culvert was originally planned as part of highway improvements in the early 2000s, it was never installed. Without this culvert, runoff from this corner drains southward through an undersized 24-inch culvert located at an access drive near

the southwest corner of the property, then follows the highway ditch along the Monsanto frontage until reaching the Keāhuaiwi Gulch culvert approximately 1,000 feet to the south. This area lacks adequate drainage capacity, and supplemental on-site retention may be necessary to mitigate existing deficiencies.

Within the DLNR Industrial and Business Park, stormwater generally flows westward toward Maui Veterans Highway, where the slightly elevated roadway acts as a barrier to flow. Runoff is directed along the Haleakalā side of the highway to an existing culvert that conveys stormwater beneath the highway to a swale on the Pūlehunui North side. From there, runoff continues southward to a larger existing ditch that leads to Keālia Pond.

During larger storm events, the existing culverts along Maui Veterans Highway lack sufficient capacity, resulting in ponding and overflow that can cause runoff to overtop Raceway Park Drive before continuing southward. The lack of adequate downstream capacity fronting the DLNR Industrial and Business Park and at Raceway Park Drive presents a drainage challenge for both the DLNR and MRPSC project areas. Because of these capacity constraints, on-site retention and detention features may be required to ensure post-development runoff rates do not exceed existing conditions.

Additionally, three pairs of double 24-inch drain lines cross Maui Veterans Highway, conveying stormwater from the mauka side to the makai side of the highway. These conveyances contribute to the regional flow pattern directing runoff southwest toward Keālia Pond and the Pacific Ocean.

4.7.5 Electrical, Telephone Systems, and Cable Television Services

Electrical (power) service to customers within the project area is provided by the Hawaiian Electric Company (HECO).

HECO primary distribution overhead lines are run on joint use utility poles along the western side of Maui Veterans Highway. This overhead pole line system consists of a 12 kV circuit and secondary conductors. There are HECO sub-transmission (46 kV) conductors which run along the northern edge of the Maui National Wildlife Refuge Complex and then attach to the joint utility poleline along Maui Veterans Highway. The 46 kV conductors extend in the southerly direction along the joint pole line.

Available spare capacity of the existing 12 kV and 46 kV circuits is not known, but the June 2019 *Pūlehunui Regional Infrastructure Master Plan, Final Environmental Impact Statement* did indicate that a new HECO substation will eventually be required to support development within the Pūlehunui area. The timing for this substation will be dependent on the development types and timing of each development within the entire Pūlehunui area.

Commercial telephone and related telecommunications service to customers within the project area is provided by Hawaiian Telcom/Sandwich Isles Communications and potentially Charter Spectrum. The communications utility cables follow the alignment of the overhead HECO lines along Maui Veterans Highway.

It is anticipated that telecommunications utility services to support the Pūlehunui CDD can be extended from telecommunications cables routed along this overhead poleline.

Currently, there is no roadway lighting system along Maui Veterans Highway, nor within the Pūlehunui CDD area.

5. EXISTING ENVIRONMENTAL REVIEW DOCUMENTATION

Existing environmental review documentation for Pūlehunui provides a comprehensive foundation for coordinated regional development, highlighting multiple proposed projects and master planning initiatives that demonstrate strong complementary features and land use synergy. Key references include the 2023 Central Maui Wastewater Reclamation Facility Environmental Impact Statement Preparation Notice (EISPN); the 2021 Final Environmental Assessment and Finding of No Significant Impact (FEA–FONSI) for wastewater improvements at Pūlehunui, which outlines wastewater system enhancements to support existing and future developments; the 2019 Pūlehunui Regional Infrastructure Master Plan and Final Environmental Impact Statement (FEIS), which evaluates infrastructure systems such as wastewater, water supply, and roadway improvements to accommodate planned industrial and commercial uses; the 2016 Final Environmental Assessment for the Division of Forestry and Wildlife (DOFAW) Baseyard, which proposes an expanded facility to support forestry and wildlife operations; the 2016 Pūlehunui Master Plan Update prepared by the Department of Parks and Recreation, integrating recreational and park facilities within the broader regional framework; and the 2010 Maui Public Regional Safety Complex EISPN.

The collective study areas assessed within these documents are illustrated in Figure 12, which depicts the updated project boundaries overlaid with projected zoning designations per the South Maui Community Plan. This figure also serves as the Pūlehunui Land Use Plan for assessment under the Infrastructure Master Plan (IMP). Each referenced document will be further summarized in the following sections, with additional discussion of ongoing and future state-led initiatives presented in Section 5, to be updated as new project details emerge.

5.1 Central Maui Wastewater Reclamation Facility (EISPN)

In July 2023, the County of Maui Department of Environmental Management (DEM) submitted an Environmental Impact Statement Preparation Notice (EISPN) proposing the development of a Central Maui Wastewater Reclamation Facility (WWRF) and an onsite Soil Aquifer Treatment (SAT) basin. The facility is planned for approximately 14.9 acres of former agricultural lands located between Honoapiʻilani Highway and Kuihelani Highway and is designed to address wastewater needs for existing and planned developments in the Waikapū/Wailuku area, as well as State of Hawaiʻi projects in Pūlehunui. The project also includes offsite infrastructure improvements such as a wastewater pump station (WWPS) near the Kehalani master-planned community, a sewage pipeline connecting the WWPS to the WWRF, portions of a sewage pipeline and R-1 recycled water transmission line linking the WWRF to the future Waikapū Country Town development, and an access road to the WWRF.

The proposed WWRF aims to reduce wastewater flows currently managed by the Wailuku-Kahului WWRF, which serves as the main wastewater treatment facility for the Central Maui region. By

redistributing these flows, the new facility will alleviate pressure on the existing infrastructure while supporting regional growth. The majority of the project components are situated within undeveloped lands and rights-of-way (ROW) owned by the County of Maui. Exceptions include the Kehalani WWPS, which is proposed on the periphery of an existing stormwater basin parcel owned by the County, and portions of pipeline alignments that traverse lands currently owned by private landowners.

In total, the proposed WWRF and related infrastructure improvements encompass a project area of approximately 21.5 acres, providing critical wastewater management infrastructure to support regional development and State infrastructure goals.

The proposed Central Maui WWRF will have a design capacity of 4 million gallons per day (mgd) of wastewater. The wastewater treatment process will involve preliminary screening and grit removal, biological nutrient removal using activated sludge, filtration to remove solids, and UV disinfection to eliminate bacteria and viruses. Residual solid waste will be disposed of at the Central Maui Landfill, while treated effluent will meet R-1 recycled water standards for agricultural irrigation and other non-potable uses.

5.2 Wastewater Improvements at Pūlehunui (FEA-FONSI)

In May 2021, the County of Maui Department of Public Works (DPW) submitted a Final Environmental Assessment (EA) for the proposed Wastewater Improvements at Pūlehunui. The project, proposed by Valley Isle Pumping (VIP), includes the development of a new wastewater pretreatment facility, improvements to an existing wastewater treatment plant (WWTP), and associated infrastructure on privately owned land within the Pūlehunui Industrial Park. VIP, which provides pumping services for cesspools, septic systems, and other waste applications on Maui, aims to enhance operational efficiency through the proposed improvements.

The new pretreatment facility, to be located on Parcel 17, will process up to 20,000 gallons per day (GPD) of wastewater, including residential septage, sewer sludge, and other domestic waste collected by pump trucks. The facility will include screening and dewatering equipment, such as a 2,000-gallon grit chamber, a 29,500-gallon receiving and equalization tank, pumps, grinders, a polymer mixing system, and a belt press with associated control systems. Solid waste generated during pretreatment will be classified and disposed of at a landfill or other appropriate site, while the liquid effluent will be conveyed approximately 650 feet via a new force main to the existing WWTP on Parcel 30 for further treatment and disposal. A lift station located in the southwest corner of Parcel 17 will facilitate this transfer.

The existing private WWTP at the Pūlehunui Industrial Park, located on Parcel 30, was originally designed to handle up to 20,000 GPD of domestic wastewater to accommodate flows from subdivision lots in the industrial park. The facility consists of two 10,000 GPD activated sludge units operating in parallel. Treated effluent is currently disposed of via two injection wells near the WWTP, while collected solids are transported to the County-owned Wailuku-Kahului Wastewater Reclamation Facility (WWRF) for disposal.

To accommodate the additional liquid effluent from the new pretreatment facility, VIP proposes to expand the WWTP's capacity to 40,000 GPD by installing two additional 10,000 GPD activated sludge units. The proposed improvements also include replacing the use of injection wells with a new absorption (leach) field for primary effluent disposal, while retaining the existing injection wells as a full backup system. These enhancements will ensure the facility can efficiently manage increased wastewater flows and improve overall waste processing in the Pūlehunui Industrial Park.

5.3 Pūlehunui Regional Infrastructure Master Plan (FEIS)

In June 2019, the Department of Hawaiian Homelands (DHHL) submitted a Final Environmental Impact Statement (FEIS) for the Pūlehunui Regional Infrastructure Master Plan. The FEIS proposed a regional infrastructure master plan on behalf of DHHL, the Department of Land and Natural Resources (DLNR), and the Department of Accounting and General Services (DAGS) on behalf of the Department of Public Safety (PSD). This master planning effort involved a coordinated analysis of infrastructure alternatives for water, wastewater, drainage, and key roadways within the Pūlehunui area. The analysis evaluated regional, sub-regional, and independent approaches to infrastructure development to ensure efficient and sustainable planning.

DHHL anticipated that regional infrastructure improvements would benefit State-managed lands and associated proposed developments in Pūlehunui. The effort aligns with the 2014 Memorandum of Understanding (MOU) between DHHL, DLNR, DAGS, and PSD, under which these agencies agreed to collaborate on joint infrastructure financing, planning, and development. This cooperative approach aimed to achieve economies of scale and deliver significant economic benefits to the Maui community. The Infrastructure Regional Study Area encompasses approximately 1,584 acres across eight parcels managed by the MOU parties (see Table 4).

Table 4: 2019 FEIS Infrastructure Regional Study Area

Managing Agency	Tax Map Key (TMK)	Anticipated Use
DHHL	(2) 3-8-008-008; (2) 3-8-008-035; (2) 3-8-008-036	Pūlehunui North
	(2) 3-8-008-034;	Pūlehunui South
DLNR	(2) 3-8-008-001 (por.)	DLNR Industrial and Business Park
	(2) 3-8-008-038; (2) 3-8-008-001 (por.); (2) 3-8-008-020	Anticipated to remain fallow

Table 4: 2019 FEIS Infrastructure Regional Study Area		
Managing Agency	**Tax Map Key (TMK)**	**Anticipated Use**
DAGS/ PSD	(2) 3-8-008-037 (por.) (2) 3-8-008-001 (por.)	Maui Regional Public Safety Complex

The FEIS also proposed specific land use programs within the DHHL project areas, identified as "Pūlehunui North" and "Pūlehunui South," totaling approximately 830 acres across four parcels. Historically, these lands were leased to Alexander & Baldwin, Inc. (A&B) for sugarcane cultivation until 2016, when A&B ceased operations. Prior to sugarcane production, much of the region was part of the Naval Air Station Puʻunēnē.

Planned land uses include commercial and light industrial activities, with up to 135 acres allocated at Pūlehunui North, including 40 acres for a potential cultural center or visitor attraction and five acres for a possible hotel. Pūlehunui South will accommodate approximately 115 acres of commercial/industrial use, supporting retail, agribusiness processing, and marketing of agricultural goods. Large contiguous commercial lots at Pūlehunui North could support a visitor attraction, cultural center, business hotel, or other major commercial use, while smaller lots are designed for flexible retail and light industrial applications.

These developments aim to build capacity within the local small business community by providing spaces for businesses or beneficiary organizations to produce and sell products in a central, highly visible location near Maui Veterans Highway. Approximately 30 to 40 acres of open space are planned for drainage needs at Pūlehunui North. At Pūlehunui South, the majority of the land will support agriculture, with open spaces dedicated to crops that preserve visual resources and maintain business visibility.

5.4 Department of Land and Natural Resources Industrial and Business Park (FEIS)

In March 2019, the Department of Land and Natural Resources (DLNR) submitted a Final Environmental Impact Statement (FEIS) for the proposed DLNR Industrial and Business Park. The project includes light industrial, commercial, and public/quasi-public uses, supported by the development of required infrastructure systems. Major components involve creating small, medium, and large lots designed to accommodate a range of future lessees, including industrial, commercial, government, and nonprofit entities. The lots will be leased to generate revenue for DLNR programs, with a primary focus on light industrial uses and limited commercial activities, driven by market demand and tenant interest.

The DLNR Industrial and Business Park covers approximately 280 acres. The site plan includes small lots (less than one acre) along Kamaʻaina Road and the adjacent interior roadway, mid-sized lots (one to less than three acres), and larger lots (three to five acres) within the interior portions. A designated 20-acre site in the northeastern portion of the park is reserved for the Division of Forestry and Wildlife (DOFAW) administrative facilities and baseyard (see Section 4.5).

The conceptual plan allows flexibility in lot sizes, enabling DLNR to adjust lot dimensions based on the specific needs of future lessees while maintaining the overall subdivision layout.

The project also incorporates an internal roadway network, bicycle paths, and open space and drainage systems. Access to the park will be provided through a proposed signalized intersection off Maui Veterans Highway, as well as existing routes via Kama'aina Road, South Firebreak Road, and the County of Maui's Raceway Park access road, which connects to Maui Veterans Highway at Mehameha Loop. Pedestrian and bicycle access is supported by the existing bike and walking path along Maui Veterans Highway and the planned entryway off Kama'aina Road.

Water, wastewater, and drainage infrastructure will be constructed to serve the development. Additionally, a 100-foot landscaped buffer along Maui Veterans Highway and greenery throughout the park will provide visual relief and enhance the area's aesthetic appeal.

5.5 Division of Forestry and Wildlife Baseyard at Pūlehunui (FEA)

In October 2016, the Division of Forestry and Wildlife (DOFAW) of the Department of Land and Natural Resources (DLNR) submitted a Final Environmental Assessment (EA) for the proposed DLNR-DOFAW Baseyard at Pūlehunui. Currently, DOFAW operates from a 3.0-acre baseyard on Kuleana Street in Kahului. The 2016 Final EA outlined the proposal to develop a new 20.3-acre baseyard on State-owned land at Pūlehunui, identified as TMK No. (2)3-8-008:001. At full buildout, the baseyard will feature a variety of facilities and uses, including:

- A one-story office building with meeting space, fitness room, shower, locker room, and office areas
- Wildlife lab
- Warehouse
- Nursery and nursery office/greenhouse
- Dryland forest restoration area
- Heavy equipment parking
- Helicopter operations landing zone
- Equipment yard
- Fueling station
- Wash bay
- Training field
- Dozer and staging area
- Public and employee parking

The baseyard development will occur in two phases. Phase 1 will include the construction of the office building, warehouse, nursery, heavy equipment parking, an auto maintenance shop, and other related facilities. Phase 2 will complete the remaining components of the baseyard.

5.6 Pu'unene Master Plan Update (MP)

In May 2016, the COM Department of Parks and Recreation (DPR) and Department of Planning (PD) developed the Pu'unene Master Plan Update: A Plan for the Maui Motorsport Park The purpose of the plan was to update the 1995 Master Plan (*Puunene Airport Area Master Plan - MEO Transportation Facility*) prepared by Helber Hastert. The 2016 MP provided a description of existing conditions, an overall vision and concept for the site, and recommendations.

The Motorsport Park provides a unique opportunity to provide a space for recreational activities that are generally difficult to locate due to the noise, dust, and crowds that are generated during major events. It is likely the only location within the state that includes a range of recreational uses that are related to motorsports or something compatible (such as the radio-controlled model airplanes) with relatively few impacts on the surrounding areas. As such, the Motorsport Park includes the Maui Raceway Park, a 1-acre motorcross track for the Maui Motocross Association (MMA), a 14-acre go-kart facility for the Maui Go Karters Association (MGKA), the Maui Circle Track, a remote controlled flying field for the Maui RC Modelers, and a Sports Car Club Track for the Maui Sports Car Club of America (SCCA). Major events for these groups are typically scheduled at least a year in advance to ensure that there are no user conflicts.

The new plan maintained facilities for existing users and also introduced two new uses to the site including a historic preserve and day use facilities. The overall concept created a "recreational campus" that comprises motorsports facilities, light industrial uses, and related activities. It was thought that the site should provide the same character and feel of other parks on the island by incorporating street trees, pedestrian and bicycle facilities, and other typical park improvements. The new plan also included called for various infrastructure improvements including: a new water system service lines and water storage tanks, an on-site wastewater treatment facility, coordination with Maui Electric Company (MECO) to develop a new regional substation, streetlights and photovoltaic panels, a new fiberoptic telecommunications fable from the Hawai'ian Telcom Kahului Center Office. The plan recommended the creation of an association of user groups at the site to be responsible for overall management of the site and capital improvement projects through coordination with the DPR. The plan also recommended the consideration of a written agreement and management structure to guide organization of the park.

5.7 Maui Regional Public Safety Complex (EISPN)

In May 2010, the State DAGS submitted an EISPN for the proposed Maui Regional Public Safety Complex (MRPSC). The proposed action is the development of the new MRPSC jail facility within the former Puunene Airport area. MRPSC will serve pretrial, sentenced, and community workline and furlough inmates. The facility includes adult male and female detention housing and support facilities minimum security male and female housing and support facilities; and administrative offices. The master plan also sets aside undeveloped areas for future expansion.

The project site consists of portions of two adjacent, larger parcels identified as TMKs (2) 3-8-008:037 (222.63 acres) and (2) 3-8-008:001 (398.1 acres). The majority of the project site (39.7-acres) is located within TMK (2) 3-8-008:037. This parcel is owned by the State, but was placed

under the control and management of the County of Maui in 2003 for public and recreational uses pursuant to Governor's Executive Order (EO) 4024. Before the proposed project can be constructed, a new EO will be required to convey the project site back under the control of the State. Also, a 0.9-acre easement from the State will need to be granted for access to the project site along the existing access road. The remaining 0.6-acres of the project site is located within TMK (2) 3-8-008:001, which is also owned by the State and is under the administration of the State Department of Land and Natural Resources (DLNR). A land transfer from DLNR to PSD will be required for use of these lands.

The proposed MRPSC will initially include 608 bed spaces, and will provide space for future expansion to house up to 843 bed spaces. These bed spaces will be distributed between either the maximum and medium security housing or minimum security housing.

The maximum and medium security housing will be for pre-trial detainees and sentenced inmates. There will be 368 bed spaces (320 for males and 48 for females) within 216 cells, such that most of the cells, especially in medium security, will be double-bunked (two bed spaces per cell). There is no planned expansion of the maximum and medium security housing at full build out.

The minimum security housing will be a dormitory-type facility for inmates participating in programs to aid in their transition back into the community. Hence, there will be no individually secured cells. Community workline programs, where inmates work outside the jail facility in supervised crews, will occupy 120 bed spaces (72 for males and 48 for females). Furlough program participants, who work unsupervised in the community and return to the facility daily or intervals such as on weekends, will occupy 120 bed spaces (72 for males and 48 for females). At full build out (843 bed spaces), the community workline program will have 125 bed spaces (75 for males and 50 for females) and the furlough program will have 350 bed spaces (275 bed spaces for males and 75 for females).

The proposed facilities will include dayrooms for dining and passive recreation; an outdoor recreation exercise yard; multipurpose rooms for programs such as adult basic education, substance abuse treatment, and religious programs; and spaces for in-unit medical assessment and medication, interviews, case management reviews, and a law library. Kiosks will be located in the dayrooms for video visitation and telephone calls. Programs and services will be brought to the medium security housing modules to minimize detainee movement within the compound.

Access to the MRPSC will be via an existing roadway from Mokulele Highway. The access road will be repaved and signage provided. The perimeter of the site will be fenced and controlled access to the site will be provided through a single entrance driveway. Internal roadways within the facility are planned among components for circulation. Other infrastructure improvements will include on-site water tanks and a wastewater treatment facility that will provide tertiary-treated (R-1) reclaimed water for irrigation use on-site. A water commitment from the County of Maui will be required to provide potable water for the proposed project. Based on preliminary information provided by Maui Electric Company (MECO), the construction of a new regional electrical substation will be required to provide power to the proposed project and other

anticipated Pūlehunui area development. Maui Electric Company (MECO) is currently considering locations for substation placement.

6. OTHER IDENTIFIED / CURRENT EFFORTS

6.1 State Veterans Home

The State Department of Defense (DOD) Office of Veterans' Services (OVS) is currently considering the development of the Third Hawai'i State Veterans Home (3D SVH) in Maui. The OVS is the principal state office responsible for the development and management of policies and programs related to veterans, their dependents, and/or survivors. The OVS acts as a liaison between the Governor and veterans' organizations and also between the Department of Veterans Affairs and individual veterans. Their objectives are to assist veterans in obtaining State and federal entitlements, to supply the latest information on veterans' issues and to provide advice and support to veterans making the transition back into civilian life.

Under the 3D SVH Maui project, the OVS is considering a 60-bed Skilled Nursing Facility (SNF) / Intermediate Care Facility (ICF). The services provided are anticipated to include skilled nursing care, rehabilitation therapies, hospice care, long-term care, geriatric mental health, Alzheimer's care, dementia, respite and eventually adult day health. These services would be available to veterans, veterans' spouses and Gold Star parents.

The 3D SVH facility will be managed, operated and staffed the Oahu regional health care system or a state agency having a Maui affiliation. According to SB2837 SD2 HD1 CD1, the Maui state veterans' home shall be assimilated into a state agency having a Maui affiliation, in a manner that may be negotiated between the Oahu regional health care system or state agency having a Maui affiliation and the department of defense. Assimilation should occur no later than June 30, 2027. After assimilation, the physical assets and the ground lease of the Maui state veterans home shall become the property of and be managed by the agency into which the Maui state veterans home is assimilated.

A potential site is anticipated to be identified by December 2024. Requests for federal funding and 35% design completion are anticipated to be approved in July 2025.

6.2 Maui Jail

The Department of Accounting and General Services (DAGS) and the Department of Corrections and Rehabilitation (DCR) are proposing to develop the new Maui Jail. The Maui Jail is intended to be a new correctional facility, encompassing approximately 40-45 acres and accommodating approximately 300 beds. The purpose of the Maui Jail is to provide a safe, secure, and humane environment for the care and custody of adult male and female offenders originating from the County of Maui. This project is intended to replace the existing Maui Community Correctional Center (MCCC) in Wailuku and to house other PSD programs operating in Maui County.

The DAGS and PSD have since contracted HHF Planners to conduct a site selection analysis to identify potentially suitable sites for the proposed Maui Jail. It builds upon the search area identification study and the preliminary parcel scoring analysis that identified the Pūlehunui CDD as the preferred location for the Maui Jail. The decision to focus on potential sites at the Pūlehunui

CDD is also supported by the Maui Island Plan (2012), which calls for the relocation of the County jail to "an appropriate location in Pūlehunui." Based on an initial parcel scoring analysis, three areas within the Pūlehunui CDD have been identified for further evaluation against the prioritization criteria: constructability, visual impacts, transportation access, and conformance with land use plans. The three areas being evaluated include:

1. The MRPSC location proposed in the 2010 EISPN within TMK 2-38-008-037 owned by the State of Hawai'i, but currently conveyed to the County of Maui via EO 4024.
2. The mauka flag lot portion of TMK 2-38-008-001 owned by DLNR.
3. The northern portion of TMK 2-38-008-038 owned by DLNR

Based on initial evaluations, the Maui Jail location proposed in the 2010 EISPN generally scored the highest on the prioritization criteria. As the Maui Jail is still under consideration, ongoing coordination efforts are anticipated between DHHL, DLNR, DAGS, and PSD to manage overlapping infrastructure and regional needs.

7. PROJECT ALIGNMENT AND DEFICIENCIES

7.1 Land Use / Entitlements

To establish the proposed Pūlehunui CDD and facilitate the envisioned land uses beyond those currently permitted under existing State Land Use District designations, a State Land Use District Boundary Amendment (SLUDBA) will be required. This amendment, shifting the land from the "Agricultural" District to the "Urban" District, must be processed through the State of Hawai'i Land Use Commission (LUC) in accordance with the criteria outlined in Chapter 15-15-18, Hawai'i Administrative Rules (HAR).

If an SLUDBA is not pursued, the project would require both a LUC Special Use Permit (SUP) and a County Conditional Permit (CP) to allow for non-agricultural uses within the existing designation.

Additionally, the project site is currently zoned "Agricultural" by the County of Maui. Under Chapter 19.30A, Maui County Code (MCC), permitted uses within this zoning district are restricted to agricultural production, related accessory uses, and certain special uses. The envisioned mix of industrial, limited commercial, and public/quasi-public uses for the Pūlehunui CDD does not align with these permitted uses. As a result, a Change of Zoning (COZ) from "Agricultural" to a more suitable zoning designation will be required to enable the proposed development.

Coordination with the respective landowners and managing agencies will be necessary to facilitate the processing of the SLUDBA and COZ. The HCDA may choose to take an active role in this process by working with the appropriate stakeholders to facilitate the process and ensure alignment with planning objectives and regulatory requirements.

In addition to the State and County land use approvals described above, development within the proposed Pūlehunui CDD will be subject to a range of environmental, infrastructure, and construction-related permits and approvals. The specific permits required will depend on the types of projects selected for implementation, their locations, and the extent of improvements proposed.

To ensure compliance with applicable environmental regulations and technical standards, the following permits and approvals may be required from State and County agencies:

Table 5: Anticipated Permits and Approvals

Responsible Agency	Permit / Approval
Hawaii Community Development Authority	Chapter 343, HRS Compliance (as applicable to PCDD Infrastructure Improvements)
Department of Hawaiian Home Lands	Chapter 343, HRS Compliance (as applicable to DHHL lands)
State Department of Health – Clean Water Branch	National Pollutant Discharge Elimination System (NPDES) Permit
State Department of Health – Disability and Communication Access Board	Review for Accessibility Compliance
State Department of Health – Indoor and Radiological Health Branch	Community Noise Permit (if applicable)
State Department of Health – Safe Drinking Water Branch	New Raw Water Source Approval; Capacity Review
State Department of Health – Wastewater Branch	Review and Approval under HAR Chapter 11-62 (Wastewater System Construction and Operation)
State Department of Land and Natural Resources – State Historic Preservation Division (SHPD)	Chapter 6E, HRS Compliance
State Department of Land and Natural Resources – Commission on Water Resource Management (CWRM)	Surface Water Use Permit; Well Construction / Pump Installation Permit (if applicable)
State Department of Transportation (DOT)	Permit to Perform Work within a State Right-of-Way (ROW); Use and Occupancy Agreement; Permitted Access
County of Maui Department of Public Works (DPW)	Grading, Grubbing, Building, and Electrical Permits; Subdivision Approval; Construction Plan Review

Table 5: Anticipated Permits and Approvals	
Responsible Agency	**Permit / Approval**
County of Maui Department of Water Supply (DWS)	Water System Review and Approval
County of Maui Planning Department and/or Planning Commission	Change of Zoning (COZ); Conditional Permit (CP); Special Flood Hazard Development Permit (if applicable)
County of Maui Wastewater Reclamation Division (WWRD)	Review of Wastewater Connection, Capacity, and Reuse Requirements

During the Chapter 343, public review period, additional agency coordination will be initiated to confirm the permitting pathways, responsible parties, and sequencing of approvals for each component of the proposed CDD.

Additional permitting requirements may also be identified and addressed through ongoing consultation and comment periods associated with the Chapter 343, HRS, environmental review process. As individual projects advance to design and implementation, a permitting matrix should be developed to outline anticipated permits, required documentation, review durations, and dependencies between agency approvals. Early coordination with permitting agencies will help streamline the process, avoid duplication, and ensure that environmental compliance is maintained across all phases of planning and construction.

7.2 Infrastructure

To effectively determine the alignments and potential deficiencies of the proposed infrastructure improvements for the Pūlehunui CDD, it is essential to engage in comprehensive stakeholder and community outreach. This outreach will serve as the foundation for guiding the prioritization of infrastructure needs and ensuring that the project addresses the most pressing requirements of the community. Through inclusive discussions, public meetings, and consultations with local residents, community groups, and key stakeholders, the HCDA will gather valuable insights into the region's infrastructure priorities, preferences, and concerns. This process will also help identify any gaps or deficiencies in the current infrastructure that need to be addressed as part of the development.

By actively involving the Pūlehunui and broader Maui community in decision-making, the HCDA will ensure that the planned infrastructure improvements reflect the true needs of the residents, while aligning with the region's long-term goals for sustainability and growth. The community's input will help prioritize which infrastructure improvements should be implemented first, such as transportation networks, utilities, and community facilities, and guide decisions regarding their scale and capacity. This collaborative approach will foster a sense of ownership and ensure that the project is responsive to the needs of the people it aims to serve, ensuring the development is both beneficial and sustainable.

7.2.1 Roadway Infrastructure

The DLNR EIS identified potential deficiencies along Maui Veterans Highway in the vicinity of the Pūlehunui CDD including at the existing intersection with Mehameha Loop (North) and Kamaaina Road. In addition, deficiencies along Kamaaina Road, S. Firebreak Road, and Maui Raceway Park Access Road were also addressed. The following were the recommendations included as part of the DLNR EIS:

- Coordinate with the DOT to coincide buildout with the planned widening of Maui Veterans Highway to three (3) lanes in each direction. It should be noted that although the widening of the highway has been discussed in the past, it is not currently included in transportation planning documents for this area including the Statewide Transportation Improvement Program (STIP), Maui MPO Transportation Improvement Program (TIP), or the Hele Mai Maui 2040 Plan. In addition, during the development of the DHHL EIS, DOT directed the project to delete any assumption that the widening project would occur within the horizon of the DHHL project and indicated that the project should coordinate with DOT regarding its fair share of future regional improvements.

- Modify the intersection of Maui Veterans Highway with Mehameha Loop (North) and Kamaaina Road to provide additional and/or extended turning lanes. Exclusive turning lanes were recommended on the northbound and southbound approaches of the highway include double left-turn lanes on the southbound approach as well as exclusive turning lanes on the eastbound approach from Mehameha Loop (North). On the westbound approach from Kamaaina Road, double left-turn lanes, one through lane, and an exclusive right-turn lane along with a northbound acceleration lane was recommended. It should be noted that some of these recommended improvements were implemented when the highway was widened from a two-lane roadway to a four-lane roadway in 2008. In conjunction with this widening project, exclusive turning lanes were implemented on the highway approaches of this intersection along with an exclusive right-turn on the Kamaaina Road approach with a northbound acceleration along the highway.

- Install a traffic signal system at the intersection of Maui Veterans Highway with Mehameha Loop (South) and the Motor Sports Park Access Road and modify the intersection to provide exclusive turning lanes on all approaches of the intersection. It should be noted that some of these recommended improvements were implemented in conjunction with the aforementioned highway widening project including the installation exclusive turning lanes. Exclusive turning lanes were added to the northbound approach of the highway, an exclusive left-turn lane was added to the southbound approach, and an exclusive right-turn lane was included on the westbound approach from the Motor Sports Park Access Road.

- Upgrade Kamaaina Road, S. Firebreak Road, and the Maui Raceway Park Access Road to Maui County standards. It should be noted that the Maui Raceway Park Access Road is shown on area maps as the Motor Sports Park Access Road and also referred to as the Pūlehunui Motorsports Park Access Road in other documentation. Hereinafter the roadway will be referred to by its name as shown on area maps, the Motor Sports Park Access Road. In addition, it should also be noted that all three roadways are currently two-lane (unstriped),

two-way roadways with varying pavement conditions. Field investigations indicate that Kamaaina Road and S. Firebreak Road have relatively good pavement conditions that allow for the smooth progress of vehicular traffic while the Motor Sports Park Access Road has relatively good pavement conditions near the highway, but the pavement condition deteriorates to poor conditions past the connections to the Army National Guard Armory.

Although widening of Maui Veterans Highway is not anticipated at this time, consideration of the other recommendations for these existing facilities that have not yet been completed should be incorporated into future plans for the Pūlehunui CDD. These recommended improvements include the provision of additional lanes on the approaches of Kamaaina Road and the Motor Sports Park Access Road to the highway as well as upgrading the existing roadways east of the highway to Maui County standards.

In addition, the DLNR EIS identified new planned roadways expected to be developed in conjunction with their project. These roadways included the following:

- East-west oriented access roadway between Maui Veterans Highway and S. Firebreak Road (hereinafter referred to as the "DLNR Access")
- North-south oriented connector roadway between Kamaaina Road and the Motor Sports Park Access Road
- One (1) internal connector roadway and four (4) additional local access roadways

The DLNR EIS also included the following recommendations:

- Coordinate with DHHL regarding the proposed new intersection on Maui Veterans Highway to ensure the proposed access roads for the DLNR project east of the highway (referred to as the "DLNR Access") and the DHHL project west of the highway (hereinafter referred to as the "DHHL Access") align and are acceptable to DOT. It should be noted that during the development of the DHHL EIS, DOT indicated that consultation meetings had been held with DHHL and DLNR where the new accesses were presented and agreed upon. In addition, it should be noted that in conjunction with the aforementioned widening of the highway from a two-lane roadway to a four-lane roadway a stub-out was provided along the highway between the Mehameha Loop (North)/Kamaaina Road and Mehameha Road Loop (South)/Motor Sports Park Access Road intersection, however this stub out does not currently align with the proposed DLNR Access/DHHL Access intersection location.
- Provide exclusive turning lanes along the northbound and southbound approaches of the highway including double turning lanes in both directions at the new DLNR Access/DHHL Access intersection. In addition, provide double left turn lanes, one through lane, and an exclusive right turn lane for the DLNR Access and DHHL Access at the intersection.
- Install a traffic signal system at the new intersection of Maui Veterans Highway with the DLNR Access and DHHL Access. The potential need for traffic signal optimization was noted at the intersections of Maui Veterans Highway with Mehameha Loop (North)/Kamaaina Road and Mehameha Loop (South)/Motor Sports Park Access Road once the new DLNR Access/DHHL

Access intersection is constructed to provide favorable throughput progression along Maui Veterans Highway.

In addition to the deficiencies and recommendations for the planned DLNR roadways, the EIS also noted an additional potential exterior roadway in the vicinity. The Kihei Mauka Bypass Collector Road was included in the Maui Island Plan General Plan 2030 as a new future bypass road that would run parallel to and east of Piilani Highway (shown as proposed by others in Figure 2). The DLNR EIS indicated that during development of the document, the County of Maui Department of Public Works indicated that the bypass road was not an active project being pursued. In addition, the Kihei Mauka Bypass Collector Road is not currently included in the STIP, Maui MPO Transportation Improvement Program (TIP), or the Hele Mai Maui 2040 Plan.

Although access to the areas east of Maui Veterans Highway is currently limited, additional roadway infrastructure is currently planned to provide additional east-west and north-south access within the district. These facilities should be incorporated into future transportation master plans for the Pūlehunui CDD. In addition, consideration should be given to opportunities to provide connectivity to existing and other planned developments including the adjacent DHHL development and the Pūlehunui Industrial Park.

Pedestrian Facilities

As mentioned previously, there is an existing shared-use path along Maui Veterans Highway. A review of transportation planning documents which include the STIP, Maui MPO TIP, and Hele Mai Maui 2040 indicates that there are no additional facilities currently planned for the Pūlehunui region. However, pedestrian facilities should be incorporated into future transportation master plans for the Pūlehunui CDD. These plans should take into account connectivity to existing and future facilities, and circulation as well as the incorporation of complete streets concepts to enhance the pedestrian environment. These concepts could include sidewalks, curb ramps, crosswalks, and landscaping and should be consistent with the guidelines included in the County of Maui Complete Streets Manual (2018).

Bicycle Facilities

As mentioned previously, there is an existing shared use path along Maui Veterans Highway. A review of transportation planning documents which include the STIP, Maui MPO TIP, Hele Mai Maui 2040, and the Bike Plan Hawaii Refresh Priorities and Implementation Plan indicates that there are no additional facilities currently planned for the Pūlehunui region. However, bicycle facilities should be incorporated into future transportation master plans for the Pūlehunui CDD. These facilities could include a diversity of bicycle facilities to serve all users including bike routes, dedicated bike lanes, and greenway connections. In addition, plans should also take into consideration connectivity to existing facilities as well as opportunities to provide connectivity to existing and other planned developments including the adjacent DHHL development and the Pūlehunui Industrial Park.

Transit Facilities

As mentioned previously, there are bus routes that currently travel through the Pūlehunui region along Maui Veterans Highway, however, there are no bus stops provided adjacent to the project site. A review of transportation planning documents which include the STIP, Maui MPO TIP, Hele Mai Maui 2040, and the "Getting On Board Maui Bus Route Study" indicates that there are no additional facilities currently planned for the Pūlehunui region. However, extension of the current transit routes into the Pūlehunui CDD or addition of new local routes along with associated bus stop facilities should be incorporated into future transportation master plans for the Pūlehunui CDD. It should be noted that during the development of the DLNR EIS the County of Maui suggested the inclusion of new bus stop(s) in the vicinity to serve the project site.

Proposed Transportation Recommendations

The proposed transportation framework for the Pūlehunui Community Development District (CDD) has been developed to promote safe, efficient, and connected mobility consistent with the County of Maui's Complete Streets Policy (Resolution 12-34) and the goals of the Maui Long Range Transportation Plan (*Hele Mai Maui 2045*). The recommendations are guided by the County of Maui Street Design Manual (2018) and emphasize balanced roadway design that accommodates vehicles, pedestrians, bicyclists, and transit users.

At a district scale, the transportation network will include upgrades to existing internal roadways—such as Kamaaina Road, S. Firebreak Road, and the Motor Sports Park Access Road—and the development of new internal collector and connector roads (Roads A, B, and C) that will serve as the primary spine corridors for circulation throughout the CDD. The network will be supported by smaller local streets and access roads that provide connectivity to future industrial, commercial, and public/quasi-public uses.

Multimodal improvements will include sidewalks, protected and standard bike lanes, and future transit stops designed to link the Pūlehunui CDD with the existing shared-use path along Maui Veterans Highway and other regional transportation facilities. The future Maui Bus network is anticipated to extend into the district, with stops generally spaced in accordance with the *Maui Bus Stop Planning Guide* to support accessibility and connectivity across the district.

Implementation of the roadway and multimodal improvements is anticipated to occur in phased increments consistent with the build-out of district infrastructure and development projects. Specific design standards, typical cross-sections, and phasing strategies are presented in greater detail in the Pūlehunui IMP which serves as the technical companion document to this PAR.

7.2.2 Water Resources

Surface Water Resources

Environmental and hydrological constraints affect streamflow in the area, which is supplied by surface runoff, rainfall, and subsurface flow. Generally, the lower reaches of the Na Wai 'Ehā streams lose water due to water seepage into the subsurface and may contribute to groundwater recharge (Oki, 2010). Decreased flow downstream of existing surface water diversions has

created challenges in maintaining the streamflow necessary to protect aquatic habitats, aesthetics, recreation, groundwater recharge, and cultural resources, creating surface water challenges between users.

To protect surface water resources, the CWRM is responsible for establishing instream flow standards (IFS) under the State Water Code Hawai'i Revised Statutes §174C on a stream-by-stream basis. The IFS is defined as the quantity of water necessary in a specific stream and during a specified time of year to maintain wildlife, aquatic life, water quality, aesthetic, recreational, and other beneficial instream uses. Interim instream flow standards (IIFS) are defined as stream flow quantity with consideration for natural variability at the time the administrative rules governing stream flow and conditions, established in 1988—HAR §13-169-44 for East Maui and HAR §13-169-48 for West Maui. In 2021, the CWRM amended IIFS for Na Wai Eha streams and issued surface water use permits to applicants including Mahi Pono and WWC.

The IIFS values set in 2021 were criticized for not incorporating all new downstream uses and account for stream restoration and the protection of instream traditional and customary Native Hawaiian rights. In June of 2024, the Hawai'i Supreme Court found that the CWRM failed to restore Na Wai Eha stream flows to original capacities through IIFS determinations following the closure of HC&S in 2016. The CWRM called for additional proceedings to justify the IIFS, leaving the IIFS the same until additional review and adjustments are made.

Mahi Pono obtained 50% of the EMI system in 2019, which provides irrigation water for their lands. Mahi Pono intends to expand operations throughout central Maui, including agriculture of citrus in areas surrounding the Pūlehunui CDD. In 2020, the reported EMI use was 24.5 MGD. At full build-out Mahi Pono expects to use 92.5 MGD, a demand that is almost four times higher than used in 2020. Almost all of the anticipated water need is dedicated to diversified agriculture. Mahi Pono has supplemented groundwater for surface water for crop irrigation using 12.7 million gallons of brackish water in 2020 but note that much of this brackish water is recharge from surface water use.

With the cessation of sugarcane cultivation on Maui, the assumption is that water previously used for irrigation may be used for other purposes. However, with competing needs for various water uses, it is important to consider the ecological needs and state-required mandates intended to protect the water resources in the ditch systems and streams. On November 8, 2024, the DLNR submitted a document to the Board of Land and Natural Resources regarding a 30-year term license covering the diversion of public surface water not to exceed 85.23 million gallons per day from Ko'olau Forest Reserve. The water used under this permit is subject to water availability under the IIFS and any reservations pursuant to the HRS. All other available water would be available for private use and oversight within the EMI system. Other stakeholders have expressed in interest in the water described in the proposed license, including the DWS, which under the proposed license, is allocated up to 6 MGD, averaged monthly.

DHHL has recently filed a petition for a reservation of 11.1785 MGD origination from the watershed of, and tributaries to, the East Maui Streams diverted by EMI for non-potable use in

Pūlehunui and Keokea-Wailuhli Hawaiian Home Lands. Some of this may serve as a potential source of water for the Pūlehunui CDD if it fits DHHL plans.

Ground Water Management Areas (GWMAs) and Surface Water Management Areas (SWMAs) are systems where additional CWRM regulation has been mandated. SWMAs are areas designated by the CWRM where users of surface water from streams, diversions, and ditches are required to obtain surface water use permits (SWUPs) to withdraw and use surface water. The remaining areas are regions where water rights are handled by common law with less oversight by the CWRM. The Pūlehunui CDD falls in a SWMA.

Groundwater Resources

"Sustainable Yield" is a metric used by the CWRM to quantify the amount of groundwater that can be withdrawn from an aquifer. It is defined as the "maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source" (HRS §174C-3, 2022). The CWRM relies on this data to quantify and monitor both groundwater and surface water demands. Sustainable Yield helps to identify areas with available water supply; this in turn, helps guide planning around land use and well development. For example, an aquifer with abundance of unallocated Sustainable Yield would be a better location for a new groundwater well, as opposed to an aquifer with little to no available Sustainable Yield. Note that fresh and brackish water withdrawals are counted against the Sustainable Yield, whereas caprock and saltwater withdrawals do not count against aquifer Sustainable Yields. Saltwater withdrawals are, in essence, an unlimited water supply resource.

The CWRM has established a Sustainable Yield of 1 MGD for the Kahului Aquifer system and 7 MGD for the Pā'ia Aquifer System within the Central Water Sector. Sustainable yield accounts for freshwater and brackish water withdrawals. Reported water use within the Kahului Aquifer System has consistently exceeded the sustainable yield since 2000. Water withdrawals have generally decreased over time, but withdrawals still exceeded sustainable yield in 2024. Further development of these aquifers is not recommended.

Pumping off-site from the Iao Aquifer was considered a possibility in a regionalized system in the 2018 DHHL PER However, the Iao Aquifer has historically been pumped to its Sustainable Yield of 20 MGD. It is also a Groundwater Management Area (GWMA) and it is unlikely that CWRM would permit more water use. Over pumping comes with potential risks. The USGS (2020) evaluated the potential for salt-water intrusion associated with pumping rates near the Sustainable Yield in the Iao Aquifer, noting an increase in chloride concentrations of pumped water and an increase in the thickness of the fresh to saltwater transition zone. The Iao Aquifer System is not recommended as a source for the project.

The CWRM uses estimates of recharge as an input to determine the Sustainable Yield for each aquifer system. Recharge values are also used to develop groundwater models to assess availability under different scenarios. Water availability throughout the Central Aquifer sector is limited due to its reliance on precipitation recharge from the rain shadow cast by Haleakalā. Mean annual groundwater recharge ranges between almost none to almost 25 inches, with most of the groundwater in the region recharged through excess irrigation. Based on a dry scenario, recharge

is projected to decrease throughout almost all aquifers in Maui, with decreases ranging by 59% to 72% by end of century. This report does not go into the various implications of climate change, but it is important to acknowledge the potential outcomes which reduce recharge and subsequent water availability.

Currently the Pā'ia or the Kahului aquifers are not designated Ground Water Management Areas (GMWAs), although designation is possible given the recent and consistent over-pumping. The Iao Aquifer system has been designated by the CWRM as a GWMA. This designation resulted from withdrawals in the aquifer meeting or exceeding 90% of the Sustainable Yield on a 12-month moving average basis. A GWMA designation may be triggered in Pā'ia and Kahului if withdrawals are not reduced.

Groundwater users are required to obtain Water Use Permits (WUPs) to withdraw groundwater. As defined in HAR §13-171-12, a WUP must be obtained to withdraw water from a GWMA. WUPs are required for freshwater, brackish water, and seawater quality wells. No withdrawal, diversion, impoundment, or consumptive use of water shall be made without a WUP.

CWRM has the authority to assess penalties for any violation of WUP requirements and for failure to comply with CWRM rules and orders, and for any violation of permit conditions. Despite an emphasis on the permit system, the CWRM has ultimate statewide jurisdiction over disputes regarding water resources, regardless of whether it is covered by a water management area (HAR §13-167-23). Areas outside of water management areas do not require WUPs for pumping wells; however, users are still required by law to report their pumpage to CWRM.

There has been recent discussion of whether the aquifer boundaries are valid or useful for hydrogeologic or administrative purposes. Recent research has revealed complexities in the island's groundwater systems, particularly on Hawai'i Island, where to the typical categorizations of groundwater are being challenged. This research suggests there are multiple stacked bodies of freshwater thousands of feet below sea level separated by seawater-saturated basalts on Hawai'i Island, meaning additional research is needed to confirm whether these freshwater bodies exist in other locations.

New research findings could influence the aquifer boundaries and Sustainable Yield designations. However, disadvantages may include greater challenges in managing GDE resources and the costs and risks associated with revisiting these components of the CWRM Water Resources Protection Plan (WRPP). There's also the risk of political or community pushback, as stakeholders might resist changes that alter water allocation or create uncertainty in permitting processes.

Former sugarcane and pineapple lands are a potential source of groundwater contamination. As such they are included in this analysis. Herbicides and fungicides containing arsenic, dioxin, ametryn, atrazine, and mercury are the primary chemicals of concern from sugarcane cultivation. These chemicals have not been found in Maui drinking water wells in the past 10 years, but these contaminants have been found in area wells historically.

A Phase I Environmental Site Assessment was conducted as part of the EIS (2019). This report identified several potential sources of contamination, including a possible underground storage

tank. There are also HEER sites in the Pūlehunui CDD, primarily associated with the Armory (Figure 2). These sites are "contaminated or potentially contaminated areas" as designated by the State Department of Health. The potential risk associated with using water near a potentially contaminated site should be considered, including the source, contaminants of concern, and potential for migration within the aquifer. Potential contamination of surface waterbodies is also a concern and should not be ruled out if surface water resources are used to support some or all Pūlehunui water needs.

Competing water needs and limited supply are critical factors in evaluating water resource management in Maui. Water availability is not uniform across aquifers, as is demonstrated by Sustainable Yield designations. At a state and county level, balancing the water availability with water demand is more essential than ever before, with pumpage either meeting or exceeding Sustainable Yield designations.

Based on current planning and the findings of the Pūlehunui IMP , total water demand for the district is estimated at up to 2 million gallons per day (MGD) at full buildout. This estimate accounts for potable, non-potable, and fire protection needs across industrial, commercial, and public/quasi-public land uses envisioned for the district.

Given the limited water availability and competing resource demands in Central Maui, a sustainable and diversified water strategy is essential. Potential approaches include:

- Collaboration with the Department of Water Supply (DWS) to extend service from the Central Maui Water System through new transmission mains and storage facilities;
- Development of site-specific groundwater or brackish wells with treatment systems to supplement potable water supply; and
- Integration of non-potable surface water or recycled water systems where feasible to offset potable demand.

To further evaluate long-term water source reliability and quality, INTERA, Inc. is being contracted to conduct a supplemental assessment of the regional aquifer system and provide site-specific source recommendations for future water supply development within or near the CDD.

Future coordination with CWRM, DWS, DLNR, and other stakeholders will be necessary to confirm sustainable yields, water allocations, and regulatory compliance under HRS Chapter 174C. Specific infrastructure concepts, including storage tanks, booster stations, and distribution improvements, are described in greater detail in the Pūlehunui IMP.

The proposed water supply infrastructure for the DLNR Industrial Business Park and Pūlehunui CDD aims to ensure a sustainable and reliable potable water source for current and future development in the area. Through the comprehensive design and implementation of proposed water transmission mains, groundwater production wells, reverse-osmosis treatment, storage tanks, and SCADA systems, it may be possible for this project to provide the foundation for meeting the growing needs of the industrial park and surrounding districts. Coordination with relevant agencies and adherence to environmental standards will be critical for the successful

delivery of the system. The complete process to deliver water to CDD will take 3 to 4 years. The consultant team will provide separate guidance on the timelines required for water source development in the infrastructure design phase.

At HCDA's request, INTERA, Inc. was contracted to conduct a regional hydrology overview, complete an aquifer-level assessment, and identify site-specific opportunities for future exploration. This effort supports HCDA's longstanding objective to identify and advance viable water source options for the region. Building on INTERA's initial high-level review of the Pūlehunui site and surrounding aquifer systems, Phase II will apply a defined set of regulatory and practical siting criteria to screen, evaluate, and rank aquifers and sub-regions with the greatest potential for future source development, while avoiding duplication of previous work. Screening criteria will be based primarily on the Hawaii Well Construction & Pump Installation Standards (HWCPIS) and Maui County Department of Water Supply policies and rules, and will include an emphasis on siting wells to minimize the potential for contamination from historic plantation agriculture (including pineapple cultivation) and other sources of pollution, thereby reducing the likelihood that treatment would be required. Practical criteria will include parcel size, shape, and topography; ground elevation to reduce saltwater intrusion risk; and land ownership and potential availability, with the intent of identifying up to three high-potential target zones suitable for exploratory well siting. This work also includes coordination with DLNR to align with the parallel study currently being conducted. Findings from this effort will be incorporated into future implementation planning efforts, as appropriate.

7.2.3 Wastewater Systems

Due to the absence of existing County wastewater infrastructure in the vicinity of the Pūlehunui CDD, a new wastewater collection and treatment system will be required to support future development. The County WWRD currently operates the nearest treatment facilities—the WKRF and the KWRF—both of which are operating near permitted capacity and are not expected to expand in the near term.

As such, the IMP recommends the development of an independent wastewater system designed to accommodate phased growth within the district and provide long-term service continuity. The system is projected to manage an average daily flow of approximately 618,000 GPD at full buildout.

The proposed wastewater infrastructure concept includes:

- Gravity collection systems and internal sewer mains to serve the DLNR Industrial and Business Park and adjacent parcels;
- Pump stations and force mains to convey wastewater to a future regional treatment facility; and
- A temporary decentralized wastewater treatment facility to serve initial phases of development until a permanent connection to the planned Central Maui Wastewater Reclamation Facility (WWRF) becomes available.

The long-term objective is to integrate the Pūlehunui wastewater system into the broader County network once the Central Maui WWRF is operational. This approach will allow the County to assume operation and maintenance responsibilities, promoting consistency with regional wastewater management strategies and minimizing long-term costs for individual landowners.

Implementation of the wastewater improvements will occur in phased stages, coordinated with roadway and utility construction as well as development timing within the CDD. System configuration, alignments, and detailed design parameters are provided in the Pūlehunui IMP.

At HCDA's direction, Carollo Engineers is being contracted to complete additional technical studies to support advancement of the project toward future implementation. This work is intended to supplement the Infrastructure Master Plan and strengthen implementation readiness, including further evaluation of long-term water sourcing and reuse considerations. As part of this effort, HCDA/SSFM requested that R-1 recycled water be considered, which would support irrigation demands in the Pūlehunui area and may require supporting infrastructure such as on-site storage. Coordination regarding treated effluent management at the Central Maui WWTP is also anticipated. These items were not included in the original Infrastructure Master Plan scope and are being advanced through this separate technical effort. Findings from the supplemental studies will be incorporated into future implementation planning efforts, as appropriate.

7.2.4 Drainage

Existing conditions in the area lack a defined storm drainage network, with natural runoff currently flowing southwest toward Keālia Pond through existing gulches and plantation-era ditches. Future development will require the construction of regional detention or retention basins to control stormwater discharge rates and maintain existing downstream flow conditions.

The proposed drainage system for the Pūlehunui CDD is designed to manage stormwater in a manner consistent with County of Maui drainage standards and best practices for Low Impact Development (LID). The system will support phased development within the DLNR Industrial and Business Park and adjacent parcels by capturing, detaining, and treating stormwater runoff generated from new impervious surfaces.

The drainage concept outlined in the IMP includes:

- Regional detention and retention basins strategically located within lower elevation drainage sub-basins to collect and manage runoff from new development areas;
- Vegetated and bioswale systems along new and existing roadways to promote infiltration, reduce flow velocity, and improve water quality; and
- Green infrastructure and LID features such as permeable paving, rain gardens, and vegetated swales to filter pollutants and increase groundwater recharge.

These drainage improvements will be implemented in stages, coordinated with roadway and site development, and subject to applicable County of Maui Department of Public Works (DPW) drainage design standards and permitting.

7.2.5 Electrical, Telephone Systems, and Cable Television Services

Existing electrical and telecommunications infrastructure within the Pūlehunui CDD is limited and primarily consists of overhead distribution lines extending along portions of Maui Veterans Highway and Kamaaina Road. These systems currently provide service only to select facilities, such as the Puʻunēnē Armory, and do not extend into the broader project area.

To support the planned development, new underground electrical and telecommunications systems will be constructed throughout the district in coordination with Hawaiian Electric and local service providers. The improvements will establish a modern and resilient utility backbone that can accommodate future growth while enhancing safety, reliability, and visual character.

Proposed improvements include:

- New underground 12-kV electrical distribution systems, including ductlines, manholes, and pad-mounted transformers, extended from existing Hawaiian Electric facilities along Maui Veterans Highway;
- Underground telecommunications ductbanks co-located with electrical infrastructure to support broadband, voice, and data services for future users; and
- Energy-efficient roadway lighting systems designed to meet the County of Maui Outdoor Lighting Ordinance, utilizing fully shielded luminaires to minimize light pollution.

Electrical and telecommunications infrastructure will be installed in phases, concurrent with roadway and utility improvements, and designed to meet County and utility company standards. Detailed design layouts, service connection points, and equipment specifications are presented in the Pūlehunui IMP.

8. COMMUNITY OUTREACH PLAN

A Draft Community Outreach and Management Plan (COMP) has been developed by Munekiyo Hiraga (MH) in February 2025. The Community Outreach Overview outlines the goals, objectives, target stakeholders, methods, phasing, and evaluation strategies for engaging the public and key agencies in the Pūlehunui CDD project. The COMP is summarized in the following sections and appended to this document as Appendix B.

Outreach Goals and Objectives

The plan aims to reach a broad audience by tailoring communication strategies to different stakeholder groups. Messaging will be developed collaboratively with HCDA and the project team to ensure alignment with infrastructure priorities and consistency with related projects. Key objectives include facilitating inter-agency collaboration, increasing public awareness, fostering relationships between the community and agencies, and ensuring clear communication with structured feedback mechanisms.

Target Stakeholders and Outreach Methods

The outreach effort will engage a diverse range of stakeholders, including government agencies, community organizations, landowners, businesses, and Native Hawaiian groups. Outreach methods will include a dedicated project website, stakeholder meetings, public meetings, visioning workshops, informational materials, and media outreach. Communication channels such as social media, newsletters, and press releases will ensure broad public engagement.

Outreach Phasing Plan

The outreach strategy follows a phased approach:

1. Phase I (Planning & Environmental Review): Focuses on inter-agency coordination, stakeholder identification, and public engagement through meetings and surveys. A project website will be launched to provide information and collect feedback.
2. Phase II (Pre-Construction): Involves continued outreach to agencies and stakeholders, sharing updates on project progress and commitments made in earlier phases.
3. Phase III (Construction): Prioritizes public updates on construction milestones via the website, newsletters, and media announcements. Public contact points for construction-related concerns will be established.
4. Phase IV (Post-Construction): No formal outreach activities are planned following project completion.

Monitoring and Evaluation

Engagement will be tracked through meeting participation, website traffic, and public feedback. MH will prepare post-event reports and quarterly summaries of outreach activities. Feedback mechanisms will allow for adjustments to outreach strategies as needed.

This structured approach ensures transparency, inclusivity, and ongoing public participation throughout the project's development.

9. NEXT STEPS

As the Pūlehunui CDD project progresses, the next steps will focus on refining key planning documents, developing clear messaging, and initiating stakeholder engagement to ensure a transparent and collaborative process.

1. Refine the Community Outreach and Management Plan (COMP)
    - Review and revise the draft COMP to develop a final deliverable that reflects stakeholder input and project objectives.
    - Continue discussions regarding the COMP's timeline to ensure outreach efforts align with project milestones.
    - Develop clear and consistent messaging for the COMP to effectively communicate project priorities to stakeholders and the public.
2. Initiate Stakeholder Engagement and Agency Collaboration

- Identify and engage key stakeholders, including government agencies, community organizations, and landowners, to foster collaboration.
- Establish a structured process for gathering input and addressing concerns related to the development of infrastructure improvements.

3. Schedule and Coordinate Community Outreach Opportunities
   - Plan and organize public meetings, stakeholder discussions, and workshops to educate and engage the community.
   - Utilize multiple outreach methods, including a project website, informational materials, and media engagement, to ensure broad participation.
   - By advancing these efforts, the project team will strengthen inter-agency coordination, refine planning strategies, and build public awareness, ensuring a well-informed and engaged community throughout the project's development.

10. REFERENCES

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Pūlehunui Community Development District

FIGURE 1- PROJECT LOCATION MAP

EXHIBIT B

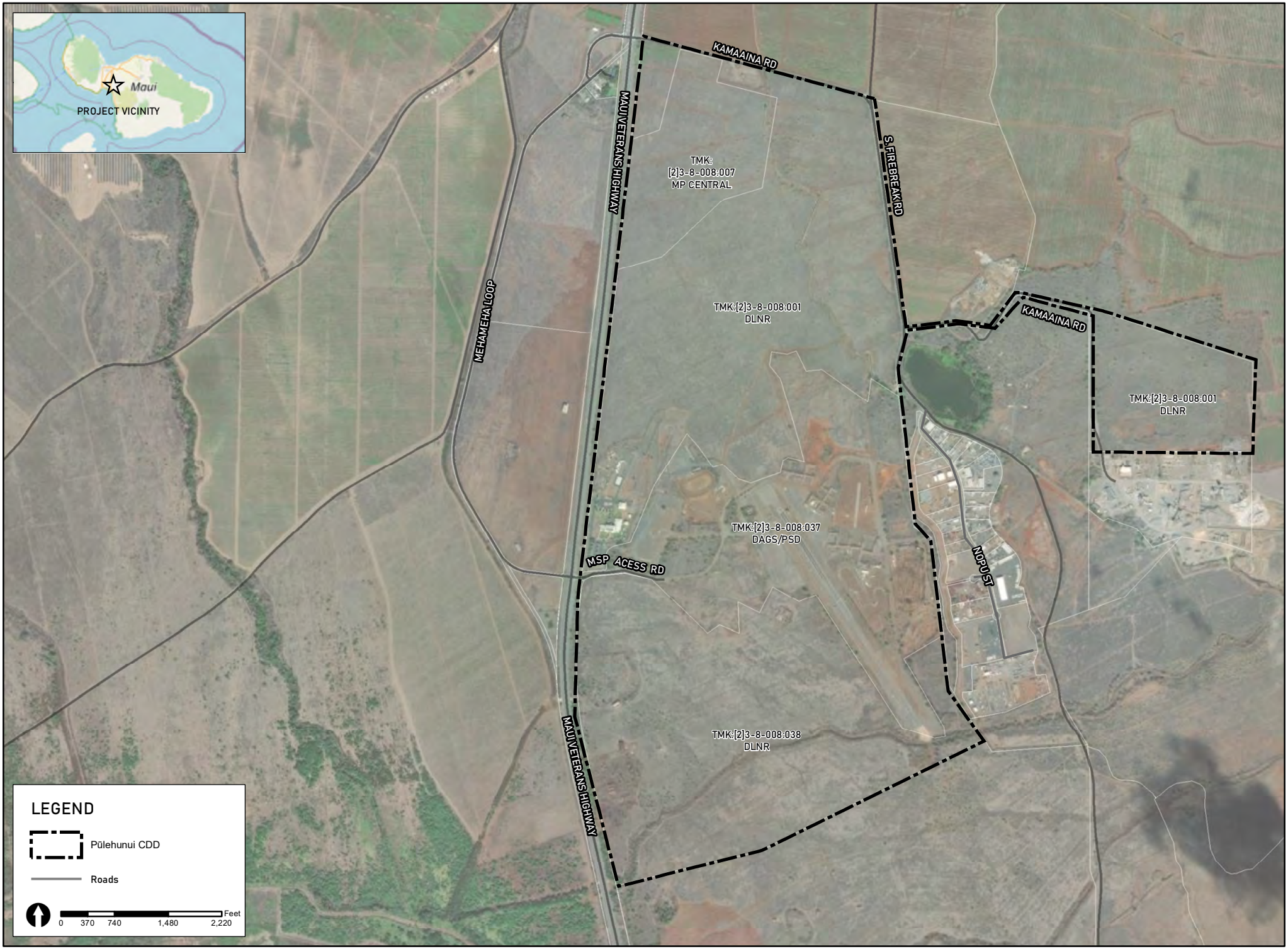

FIGURE 2- COMMUNITY DEVELOPMENT DIS EXHIBIT B DARIES

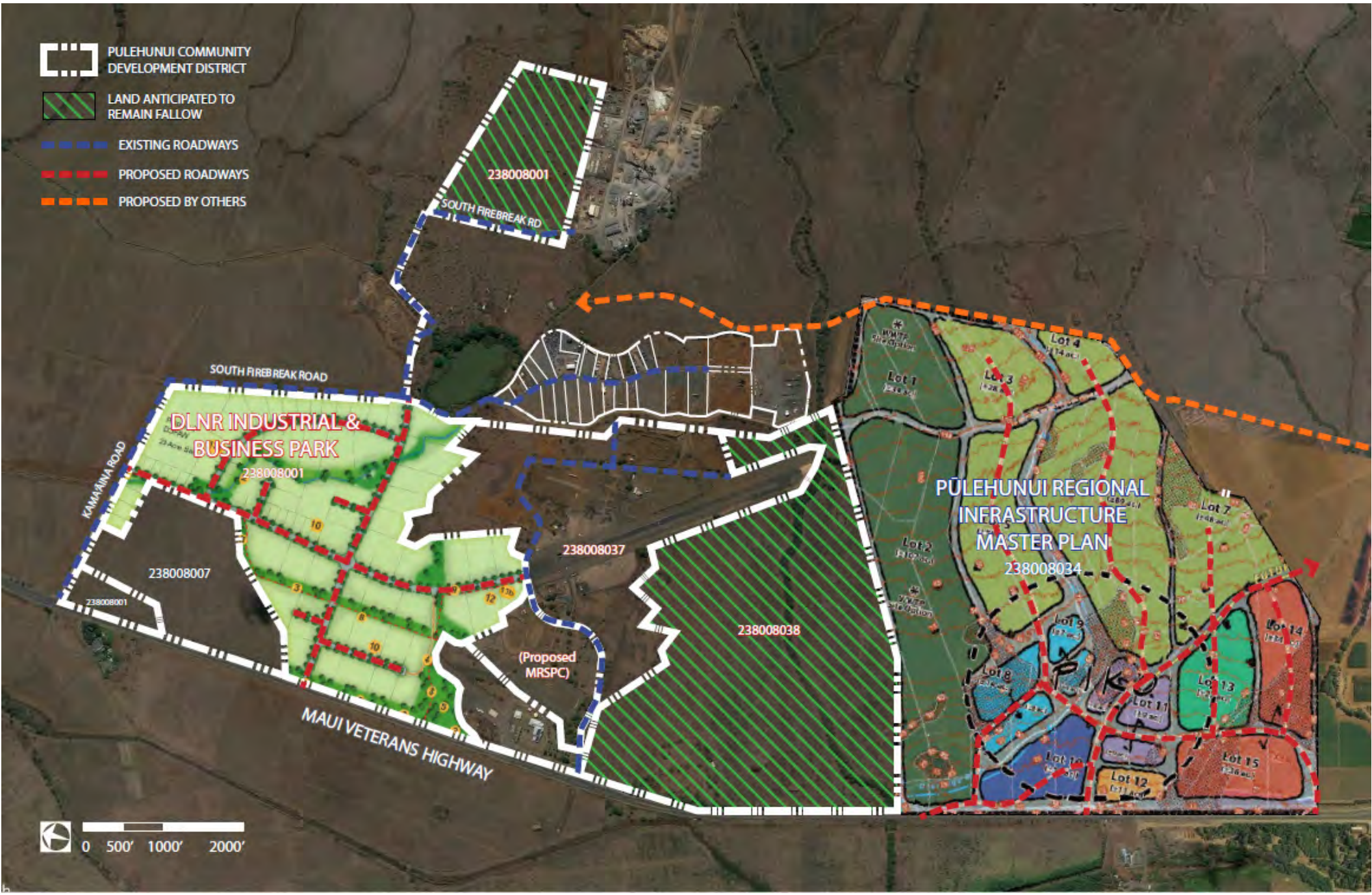

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FIGURE 3- STATE LAND USE DISTRICT

EXHIBIT B

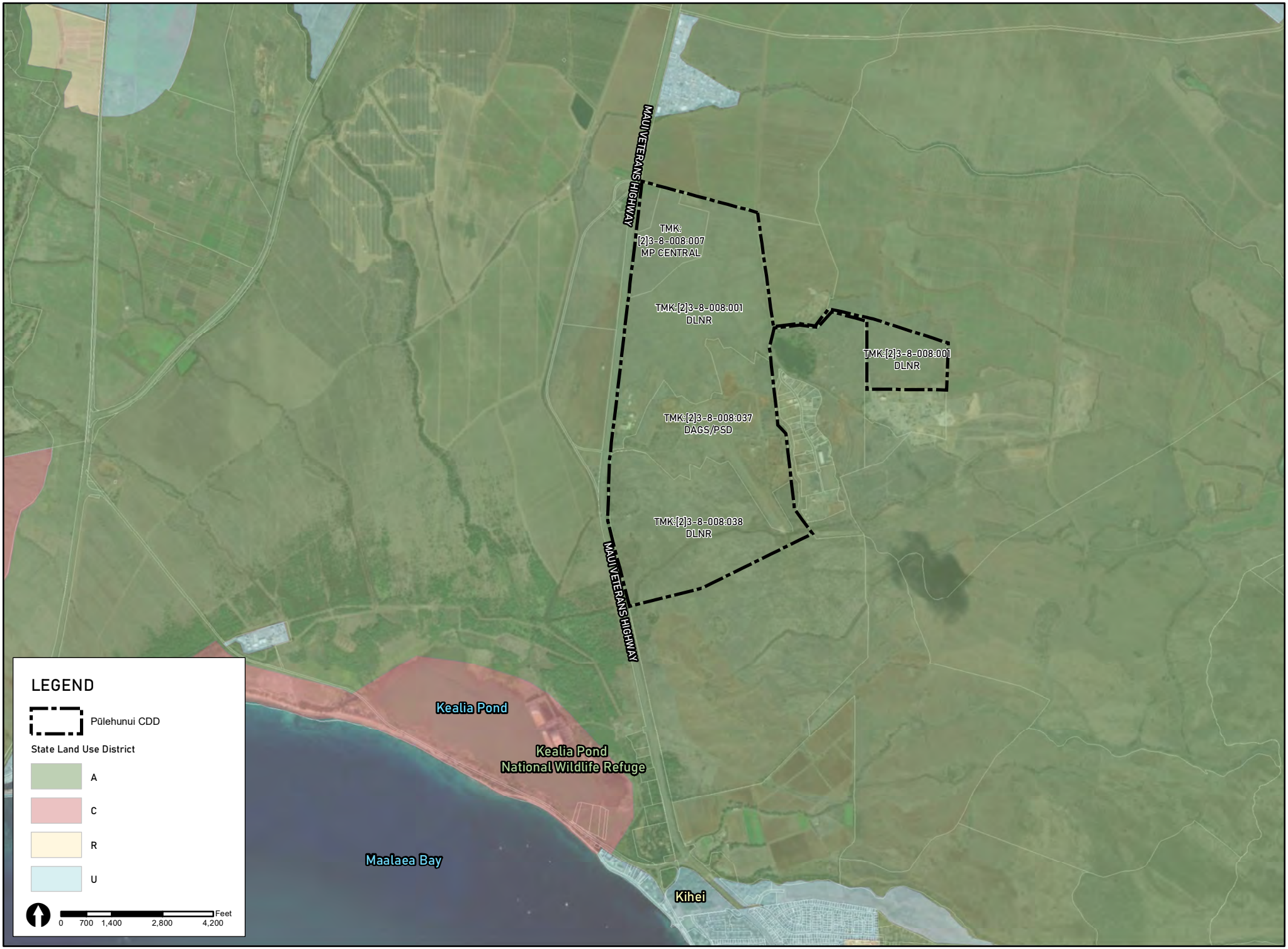

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FIGURE 4- SOUTH MAUI COMMUNITY PLAN EXHIBIT B SIGNATIONS

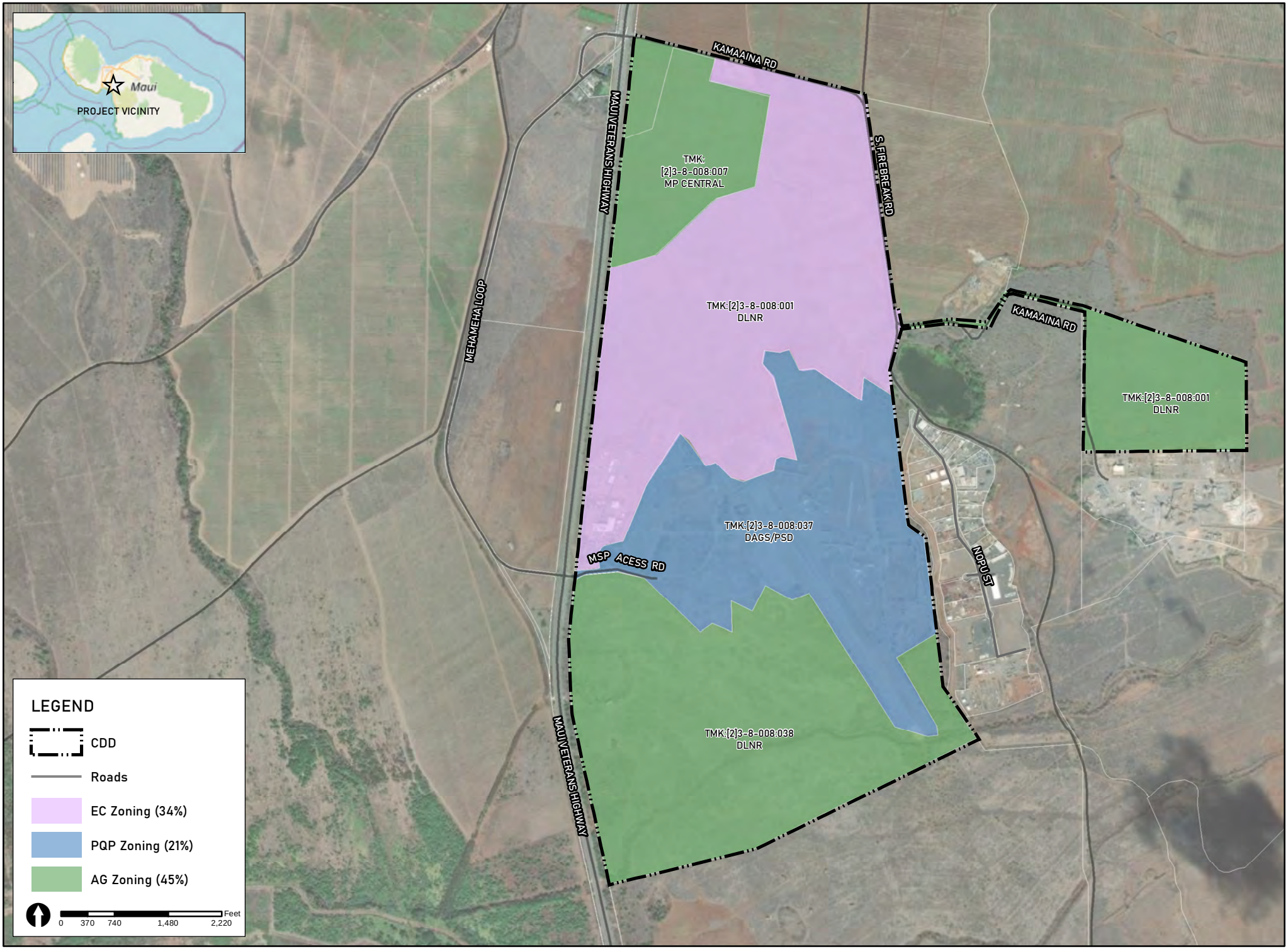

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FIGURE 5- COUNTY OF MAUI CURRENT ZON EXHIBIT B

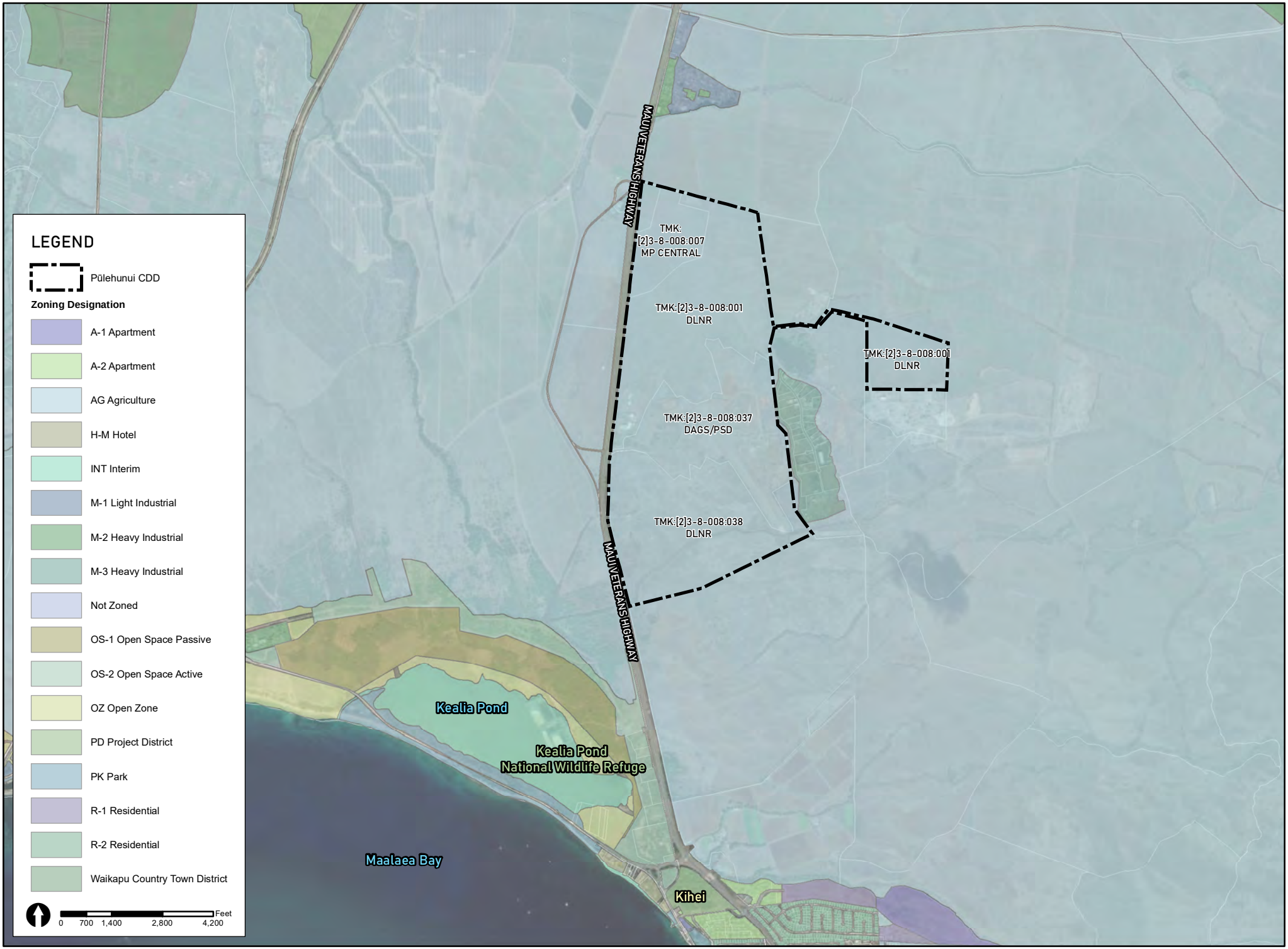

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FIGURE 6- TOPOGRAPHY

EXHIBIT B

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FIGURE 7- SOILS

EXHIBIT B

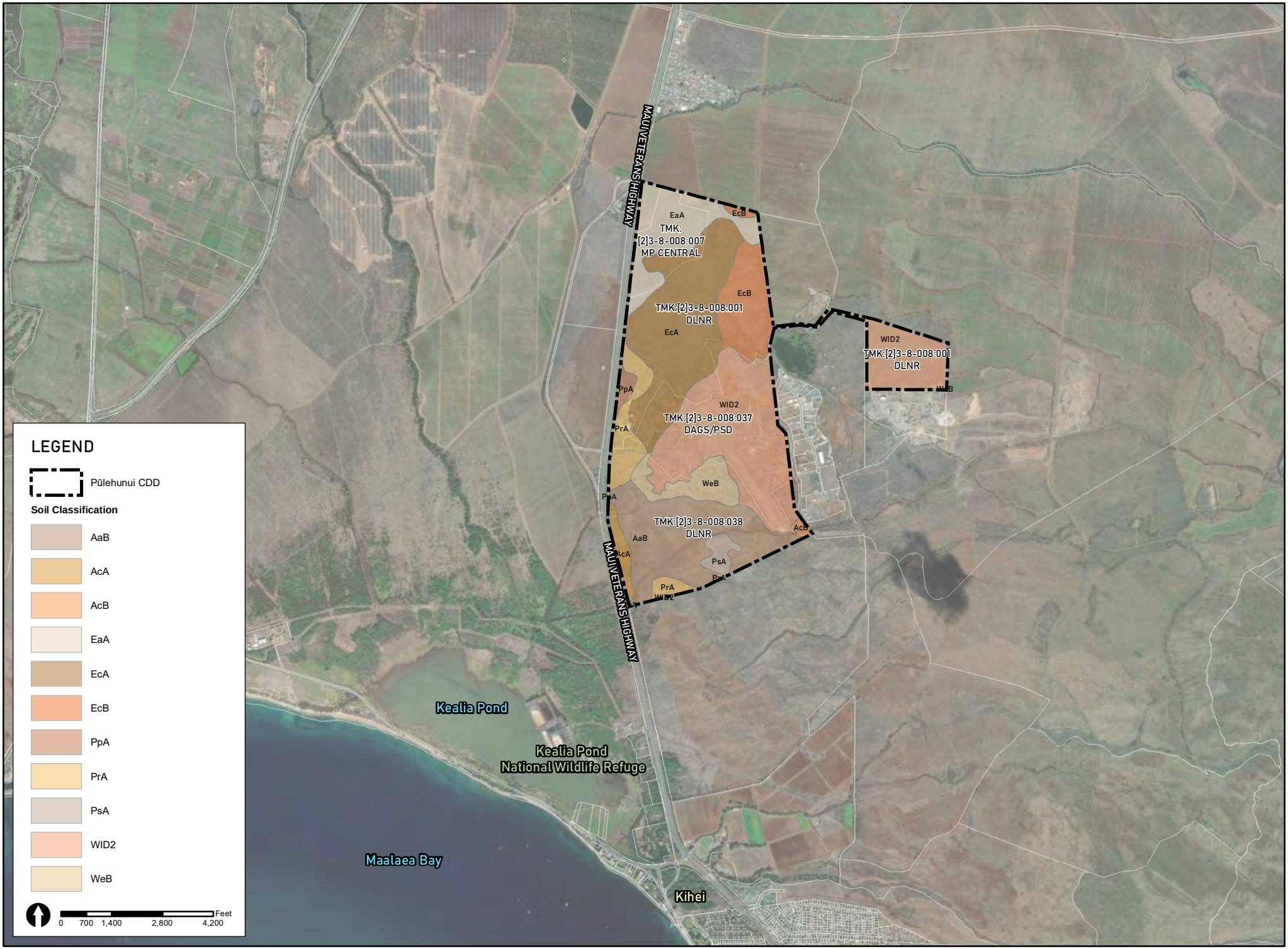

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FIGURE 8- WETLANDS

EXHIBIT B

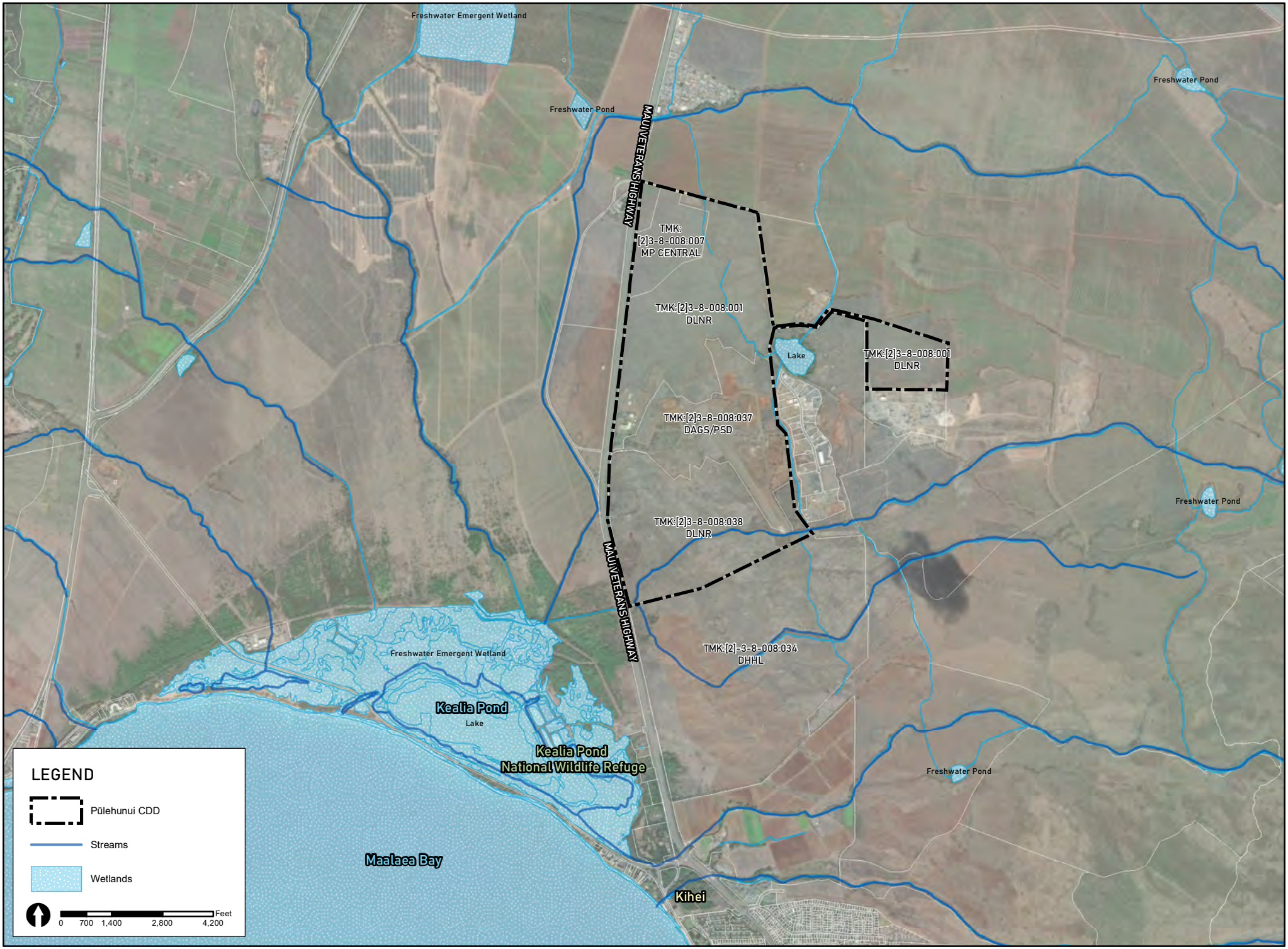

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FIGURE 9- FLOOD INSURANCE RATE MAP **EXHIBIT B**

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FIGURE 10- TSUNAMI EVACUATION ZONES **EXHIBIT B**

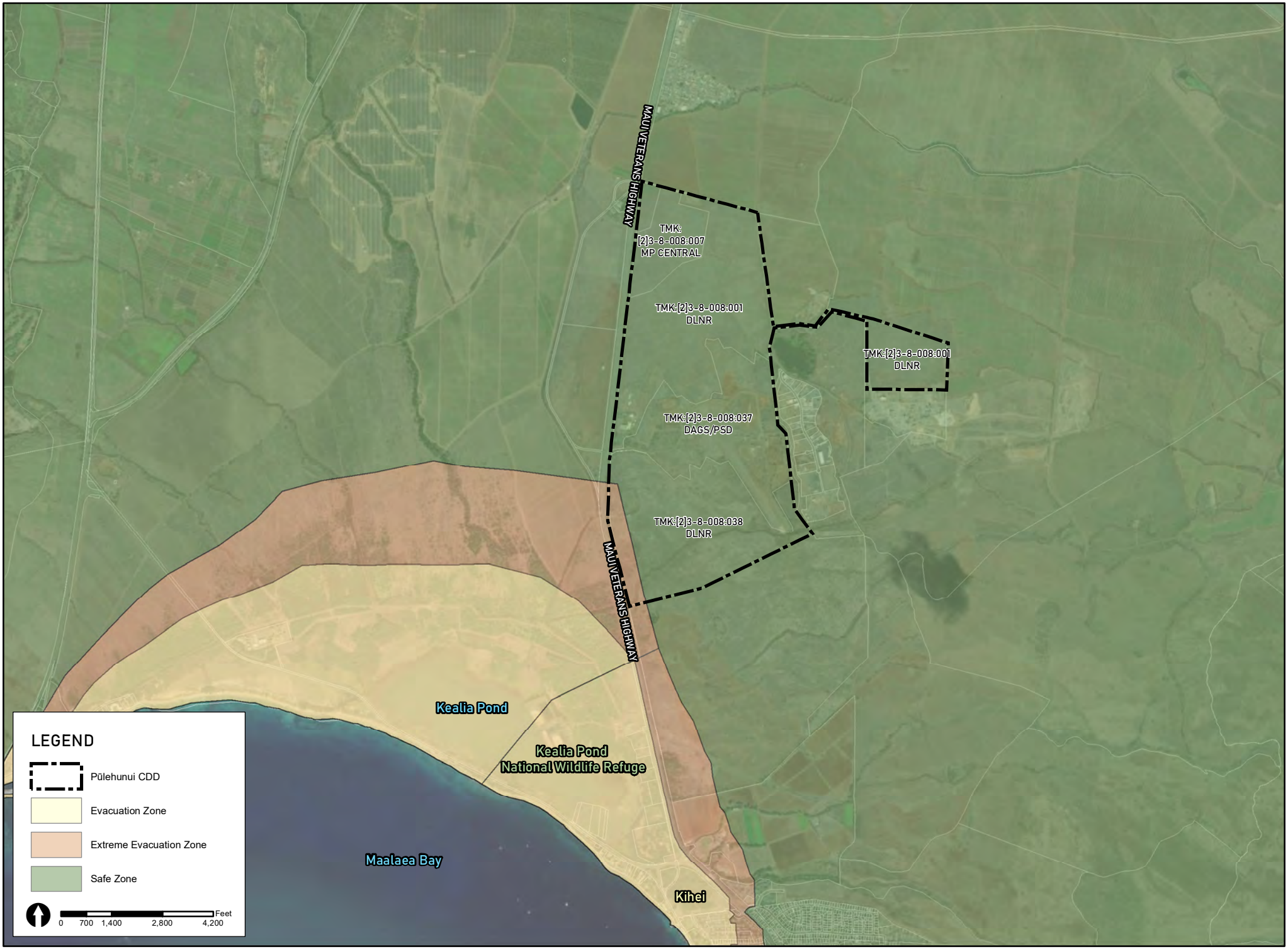

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FIGURE 11- SEA LEVEL RISE EXPOSURE AR **EXHIBIT B**

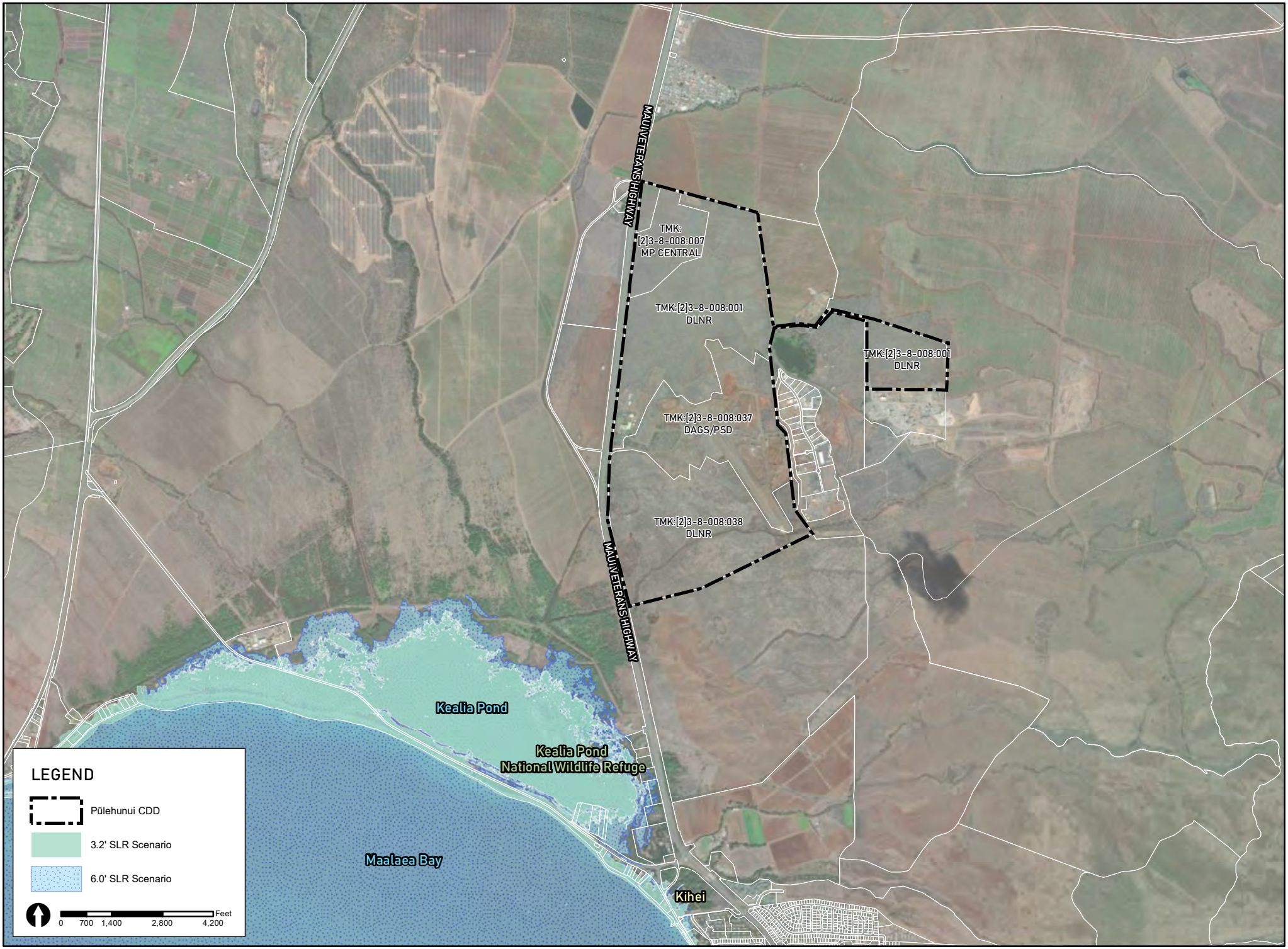

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FIGURE 12- EXISTING STUDY AREAS

EXHIBIT B

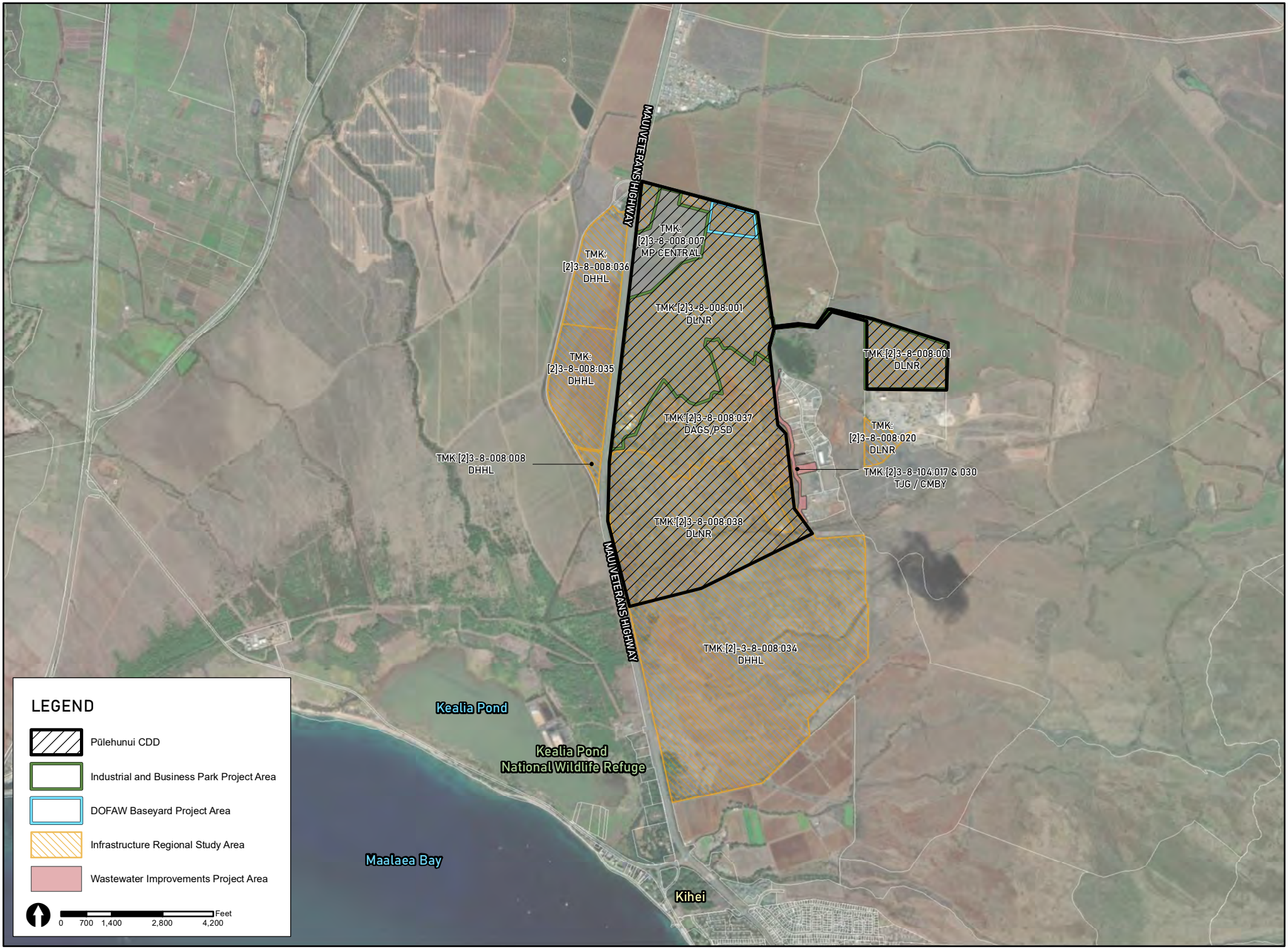

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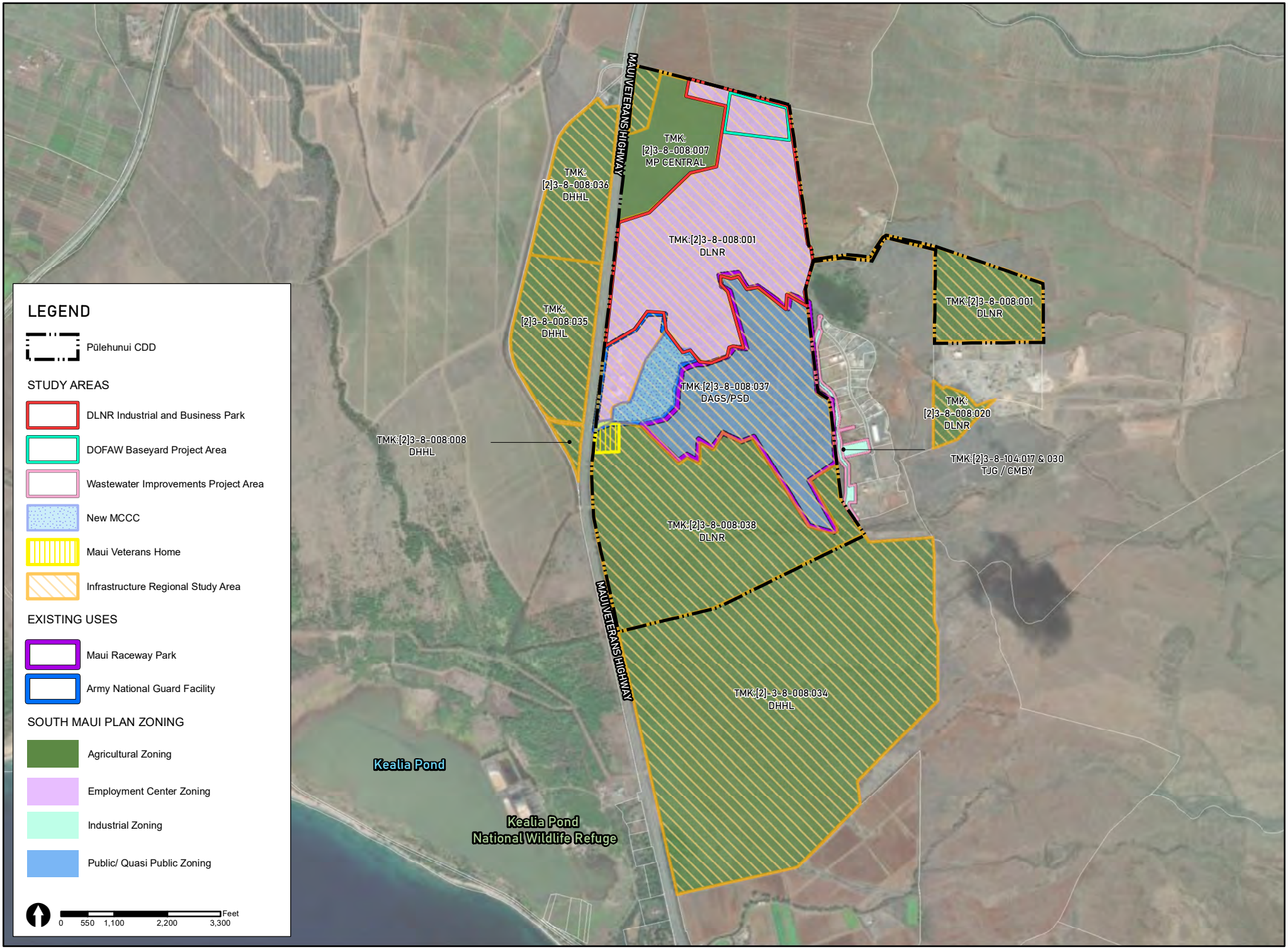
FIGURE 12- LAND USE PLAN (STUDY AREAS + MAUI CP ZONING)

EXHIBIT B



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