SITE ASSESSMENT REPORT

VILLAGES OF LEIALI‘I
200-UNIT MULTI-FAMILY INFILL PROJECT

Lahaina, Maui, Hawai‘i
Tax Map Key: (2) 4-5-021: Portion of 003

January 18, 2017

Prepared for:
Hawai‘i Housing Finance and Development Corporation
State of Hawai‘i
677 Queen Street, Suite 300
Honolulu, Hawai‘i 96813

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2013.70.0500

1 PURPOSE

The purpose of this report is to assess the infrastructure constraints to development of about 200 multi-family rental housing units at the Villages of Leialiʻi, at Tax Map Key: (2) 4-5-021:003. See Figure 1 – Location Map, following the text of this report.

2 DEVELOPMENT DESCRIPTION

The density for multi-family housing development is between 15 to 20 dwelling units per acre. A 200-unit development will require approximately 10 to 14 acres, excluding roadway infrastructure.

3 DEVELOPMENT CONSTRAINTS

Development at the Villages of Leialiʻi is currently constrained by the County of Maui's Urban Growth Boundary, which limits development to the south-western portion of the site. The existing water system in the area is serviced from the 1.5 million gallon Wahikuli Tank with a floor elevation of 235-feet, which limits the water service zone to below the 130-foot elevation due to minimum pressure requirements to the development. Figure 2, following the text of this report, superimposes the Urban Growth Boundary and the 130-foot elevation onto the Land Use Plan Concept Two from the *Villages of Leialiʻi Phase A Supplemental Master Plan Report* dated March 2011, herein referenced to as the Master Plan. The project area boundary encompasses approximately 50 acres for potential development.

4 TRANSPORTATION

Roadway access into the project area boundary is limited to Keawe Street, Wahikuli Road or Kapunakea Street. Keawe Street is a two-lane road that connects between Honoapiʻilani Highway and the Lahaina Bypass Highway. Earthwork, pavement, curbs and gutters and sidewalks would be required for an intersection from the proposed project site to Keawe Street. Wahikuli Road and Kapunakea Street extends through the existing residential neighborhood from Honoapiʻilani Highway, which is the roadway connecting West Maui to Central and East Maui. There is a County of Maui property (TMK: 4-5-035:037) and a private property (TMK: 4-5-011:011) with a road easement between the end of Kapunakea Street and the Leialiʻi property, which would have to be improved for roadway access. The County of Maui property (TMK: 4-5-035:037) is currently paved.

A second access to Keawe Street could be provided if Mill Street is extended approximately 700-feet to the project site through the private property (TMK: 4-5-011:011) in the road easement. See Appendix A for the off-site road system excerpted from the Master Plan. The project should conduct a traffic study to assess the impact on the adjacent roads to determine if off-site intersection improvements, such as traffic signalization, will be required for the development.

5 DRAINAGE

Existing drainage in the area sheet flows from east (mauka) to west (makai) and in a southerly direction toward Kapunakea Street. A cane haul road along the west (makai) boundary of the site directs runoff toward Keawe Street. Runoff reaching Keawe Street is captured in catch basins along the road and discharges into Kahoma Stream through a triple 5-foot x 2.67-foot reinforced concrete box culvert. See Appendix B for Existing Drainage Conditions excerpted from the Master Plan.

The Master Plan for Leialiʻi proposed on-site detention basins along the west (makai) boundary of the project. The on-site detention basins would provide runoff water quality treatment, reduce developed runoff rates leaving the site to pre-development values, and/or reduce developed runoff to rates that can be conveyed by downstream drainage structures. The proposed project could provide a buffer area between the existing residential community to provide for detention and/or retention basins to handle the increase in runoff from the proposed project. The buffer area could be large enough to allow future expansion of the detention basins for the future development of Leialiʻi. One or all of the triple 5' x 2.67' reinforced concrete box culvert could also be extended approximately 700-feet to the Leialiʻi site to convey excess runoff from the project to Kahoma Stream. See Appendix B for Proposed Drainage System which shows the extension of the reinforced concrete box culverts and the detention basin, which is excerpted from the Master Plan.

6 POTABLE WATER

The existing Department of Water Supply (DWS) 1.5 million gallon (MG) Wahikuli Tank reservoir at elevation 235-feet located within Leialiʻi services the existing Wahikuli Subdivision west (makai) of Leialiʻi . The water service zone serviced by the Wahikuli Tank is below the 130-foot elevation to provide a minimum 40 pounds per square inch service pressure. Water lines loop around the existing subdivision. See Appendix C for the existing potable water system. There is a 16-inch water line in Wahikuli Road to the 1.5 MG Wahikuli Tank reservoir. There are 8-inch water lines in Fleming Road and Kapunakea Street, and there is a 12-inch water line in Keawe Street.

Water availability in the area is on a first come first serve basis. The average daily demand for a multi-family development is 560 gallons per unit, for a total of 112,000 gallons for 200 units. If the project is 100-percent affordable (purchase or rental), DWS indicated that water service could be provided to the development. However, the water availability will be subject to the water availability at the time the construction plans are submitted to the DWS.

7 SEWER SYSTEM

The County of Maui Department of Environmental Management (DEM) owns and operates the existing wastewater system in the vicinity of the Leialiʻi project site to the County's

Lahaina Wastewater Reclamation Facility (WWRF). The existing wastewater transmission system between the project site and the WWRP consist of gravity sewer lines within the existing subdivision, and three (3) wastewater pumping stations (WWPS), sewer force mains and gravity transmission lines along Honoapiʻilani Highway. See Appendix D for the existing sewer system.

The gravity sewer lines within the existing subdivision extend along Kapunakea Street up to Nahale Place and within the internal roads along Kahoma Street

As noted in the Master Plan, the Lahaina Wastewater Reclamation Facility (WWRF) has an operating capacity of about 6.5 million gallons per day (MGD) with plans to expand to 9 MGD. In 2011, the WWRF was treating about 5.4 MGD. The WWRF does not currently have the capacity to serve all proposed projects in the Lahaina area. Guaranteed allocation occurs only at the time individual unit building permits are issued.

DEM was not able to confirm the existing wastewater system and WWRF has available capacity for the development. Further discussions with DEM are required to determine available capacity and connection points to the existing wastewater system. An alternate to connecting to the existing wastewater system would be to construct an on-site wastewater treatment plant for treating the wastewater to R-1 water (significant reduction in viral and bacterial pathogens) for on-site reuse as irrigation water. For backup disposal of the R-1 water, injection wells would be required near the wastewater treatment plant.

8 RECLAIMED WATER SYSTEM

At the Lahaina WWRF, wastewater is treated to R-1 water for reuse or disposal. R-1 water is recycled water that has been oxidized, filtered and exposed to a disinfection process. A 16-inch reclaimed water line extends from the Lahaina WWRF along Honoapiʻilani Highway and Kualapa Loop to the Royal Kāʻanapali Golf Course, approximately 2 miles from the proposed project site in Leialiʻi. See Appendix D for the existing reclaimed water system.

The County of Maui Wastewater Reclamation Division (WRD) prefers to distribute R-1 water to locations that are closer to the WWRF in order to limit costs associated with pumping the water. WRD was not able to confirm whether R-1 water would be available for the development. However, due to the distance from the project site to the existing reclaimed water system, it is not anticipated that reclaimed water would be available for the project.

9 ELECTRICAL SYSTEMS

Maui Electric Company (MECO) presently serves the Lahaina area from the Lahaina Substation located on Lahainaluna Road, and has distribution lines from Puukolii Substation located in the Kāʻanapali Area. Because of recent developments within Lahaina, the Lahaina Substation, which was identified as being near capacity in 2011, may not have sufficient capacity to support this development. If MECO confirms the insufficient capacity, it is probable that MECO will request the dedication of the substation site in Leialiʻi, north of Leialiʻi Parkway. MECO would initiate an application with the State Public Utilities Commission for permission to expend funds in excess of $2.5 million for development of the substation and 69 kilo-volt line extensions.

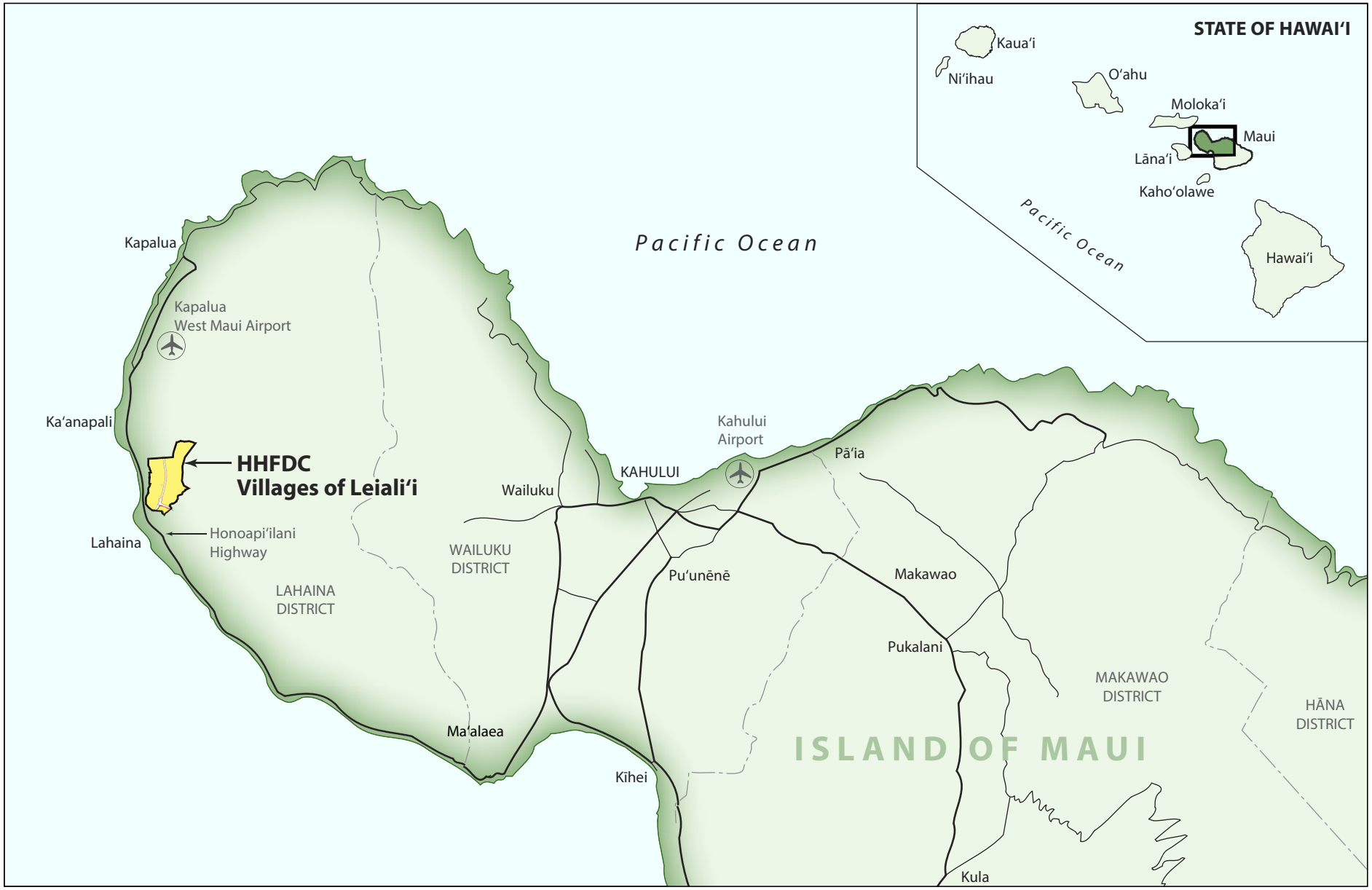
10 TELECOMMUNICATION SYSTEMS

Hawaiian Telcom (HTCO) and Charter Communications (Charter formerly known as Oceanic Time Warner Cable) presently serves the Lahaina area from their trunk cables on Honoapiʻilani Highway that have been extended underground through the facilities on Keawe Street. Both HTCO and Charter would likely extend fiber optic cables to serve this development and both companies have sufficient capacity for the proposed number of dwelling units.

11 CONCLUSION

A 200 unit multi-family affordable rental housing project could be developed at the Villages of Leialiʻi, occupying approximately 10 to 14-acres, below the 130-foot elevation between Keawe Street and Wahikuli Road. Further discussions are required with the County of Maui DEM and MECO to determine whether the existing wastewater and electrical infrastructure, respectively, have adequate capacity or whether additional improvements are required for the development. Information requested from DEM and MECO was not available at the time of completion of this report.

FIGURES



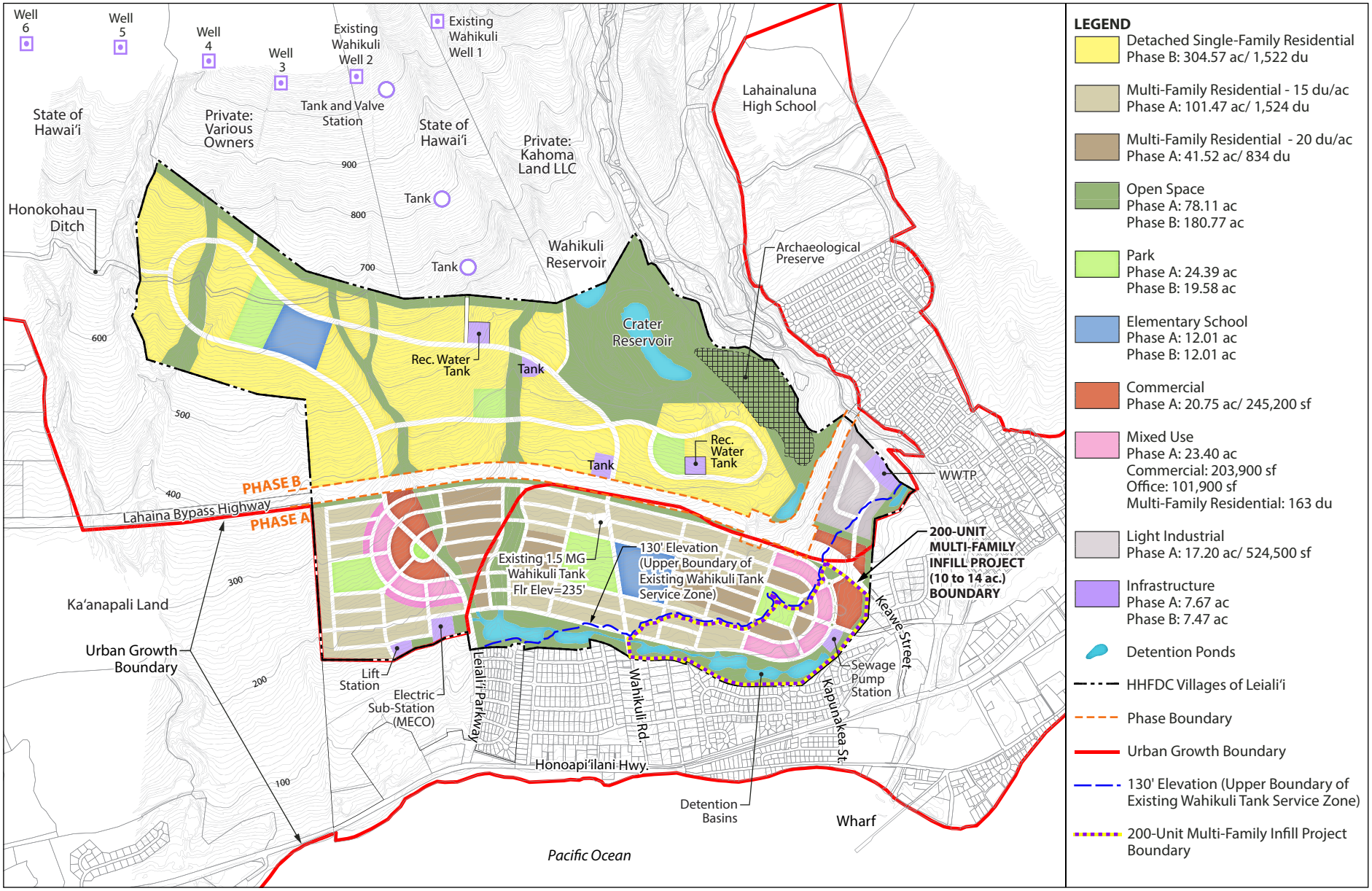
BELT COLLINS

NORTH

0 1 2 4
SCALE IN MILES

FIGURE 1
LOCATION MAP

Villages of Leiali'i
200-Unit Multi-Family Infill Project
January 2017



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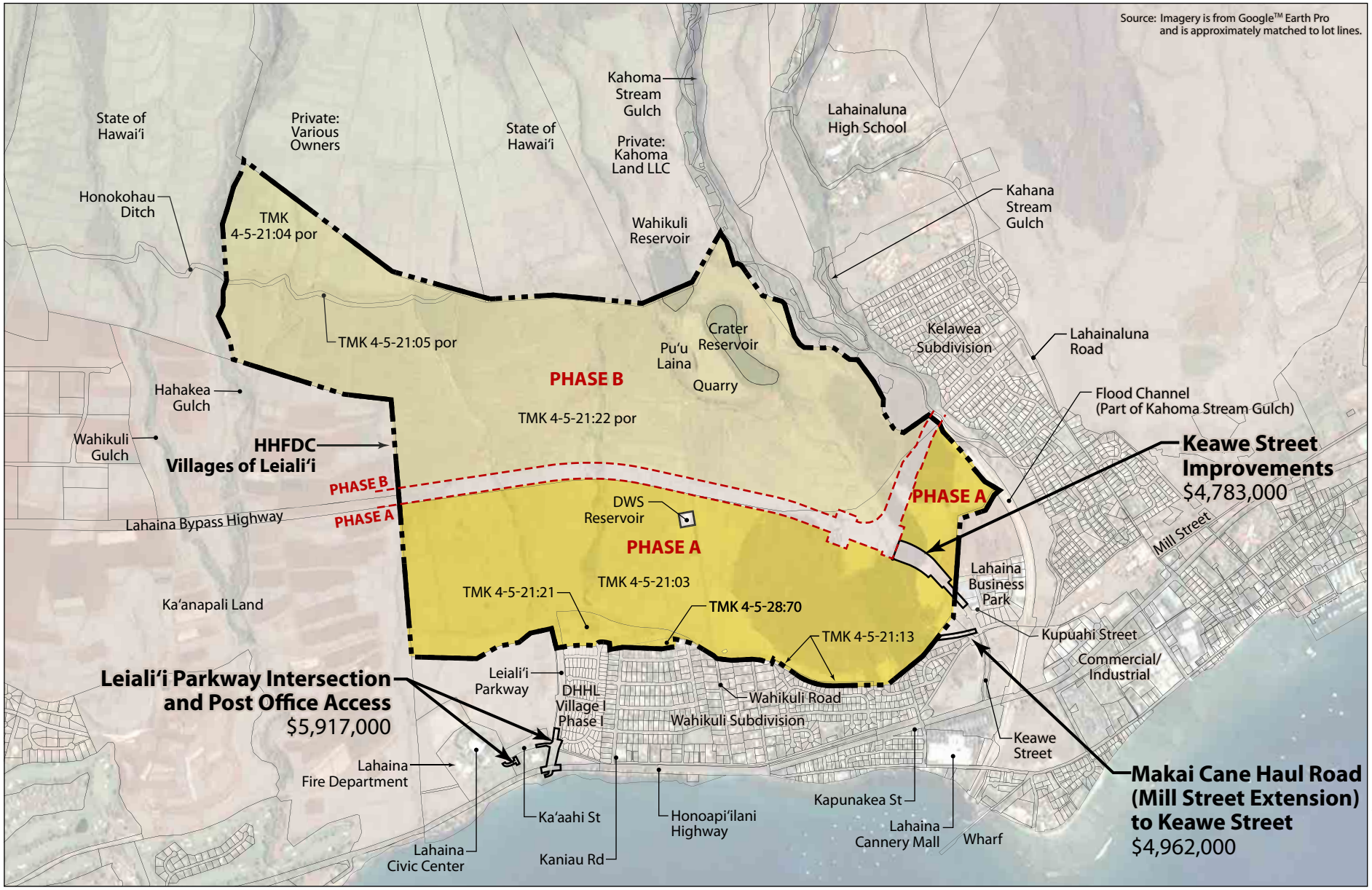
SCALE IN FEET

Note: Lot lines shown are approximate and for illustrative purposes. Imagery is from Google Earth Pro and is approximately matched to lot lines.

FIGURE 2
LAND USE PLAN CONCEPT TWO

Villages of Leiali'i
200-Unit Multi-Family Infill Project
January 2017

APPENDIX A
TRANSPORTATION



BELT COLLINS

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SCALE IN FEET

LEGEND

- HHFDC Villages of Leiali'i
- Phase Boundary
- Phase A
- Phase B

Figure 3-2
OFF-SITE ROAD SYSTEM

Villages of Leiali'i
Phase A Supplemental Master Plan Report
March 2011

APPENDIX B
DRAINAGE

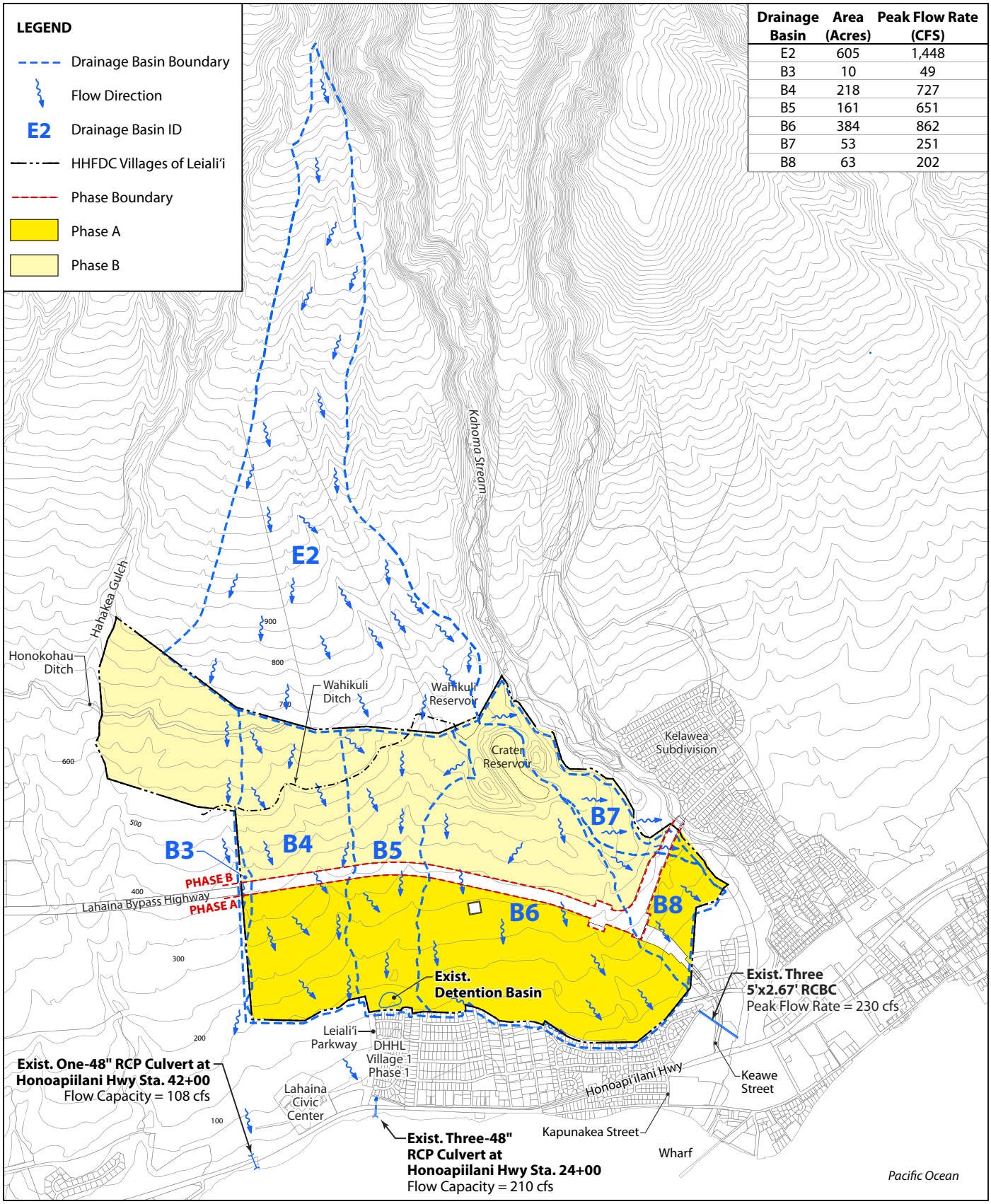

Figure 3-3
EXISTING DRAINAGE CONDITIONS

Villages of Leiali'i
Phase A Supplemental Master Plan Report
March 2011

BELT COLLINS

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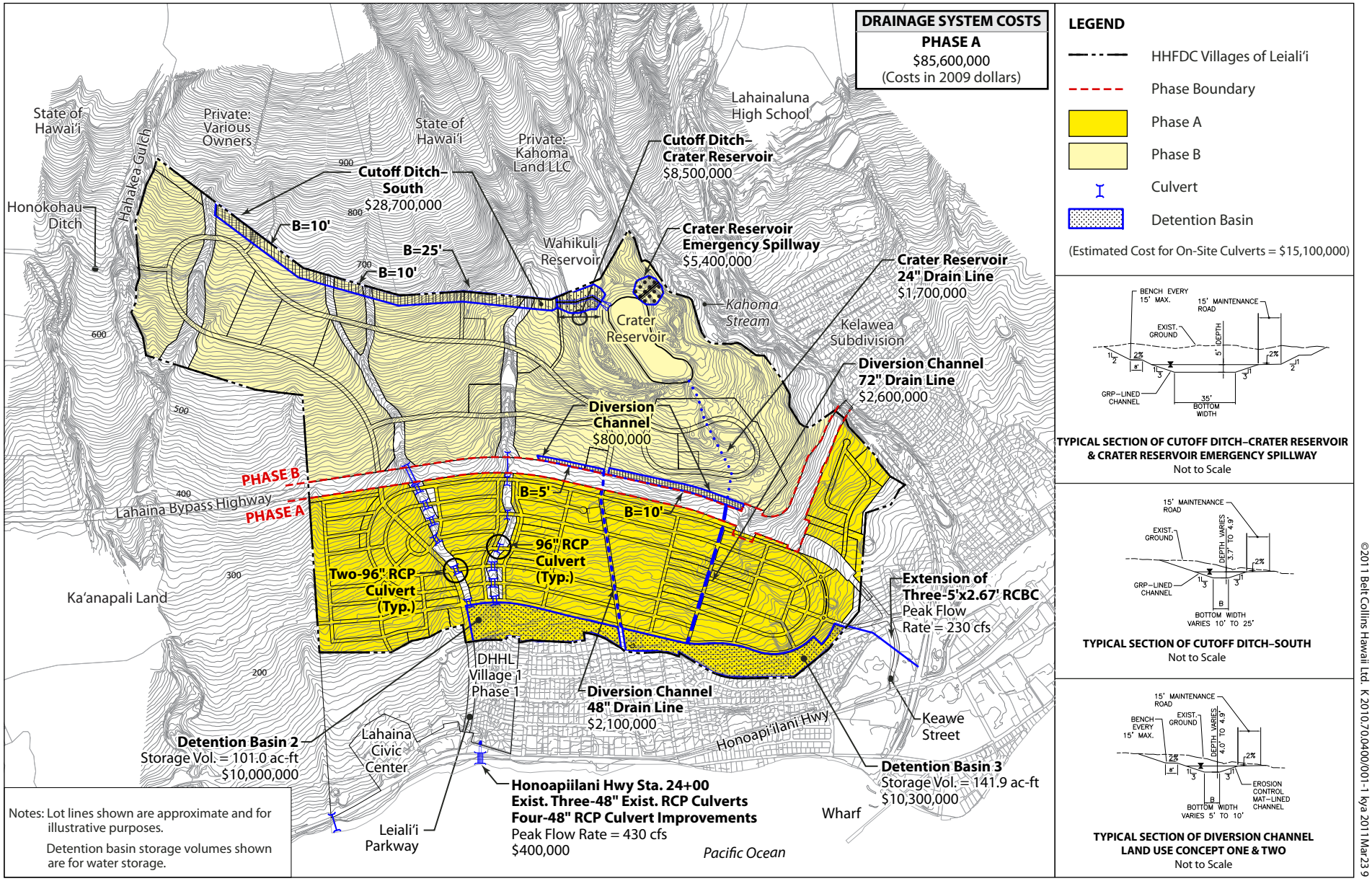

BELT COLLINS

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SCALE IN FEET

Figure 3-5a
PROPOSED DRAINAGE SYSTEM—OPTION A LAND USE PLAN CONCEPTS ONE AND TWO

Villages of Leiali'i
Phase A Supplemental Master Plan Report
March 2011

APPENDIX C
POTABLE WATER

LEGEND

- WATER STORAGE TANK (IN USE)
- WATER STORAGE TANK (NOT IN USE)
- WATERLINE 16"-42"
- WATERLINE 6"-12"
- WATERLINE 1"-4"
- VALVE
- FIRE HYDRANTS MAINTAINED BY D.W.S.
- PRIVATE FIRE HYDRANTS MAINTAINED BY OTHERS
- STANDPIPES MAINTAINED BY D.W.S.
- PRIVATE WATERLINE
- PRESSURE REDUCING VALVE
- PUMP
- DOUBLE CHECK DETECTOR ASSEMBLY

DEPARTMENT OF WATER SUPPLY, COUNTY OF MAUI
WAILUKU, MAUI, HAWAII

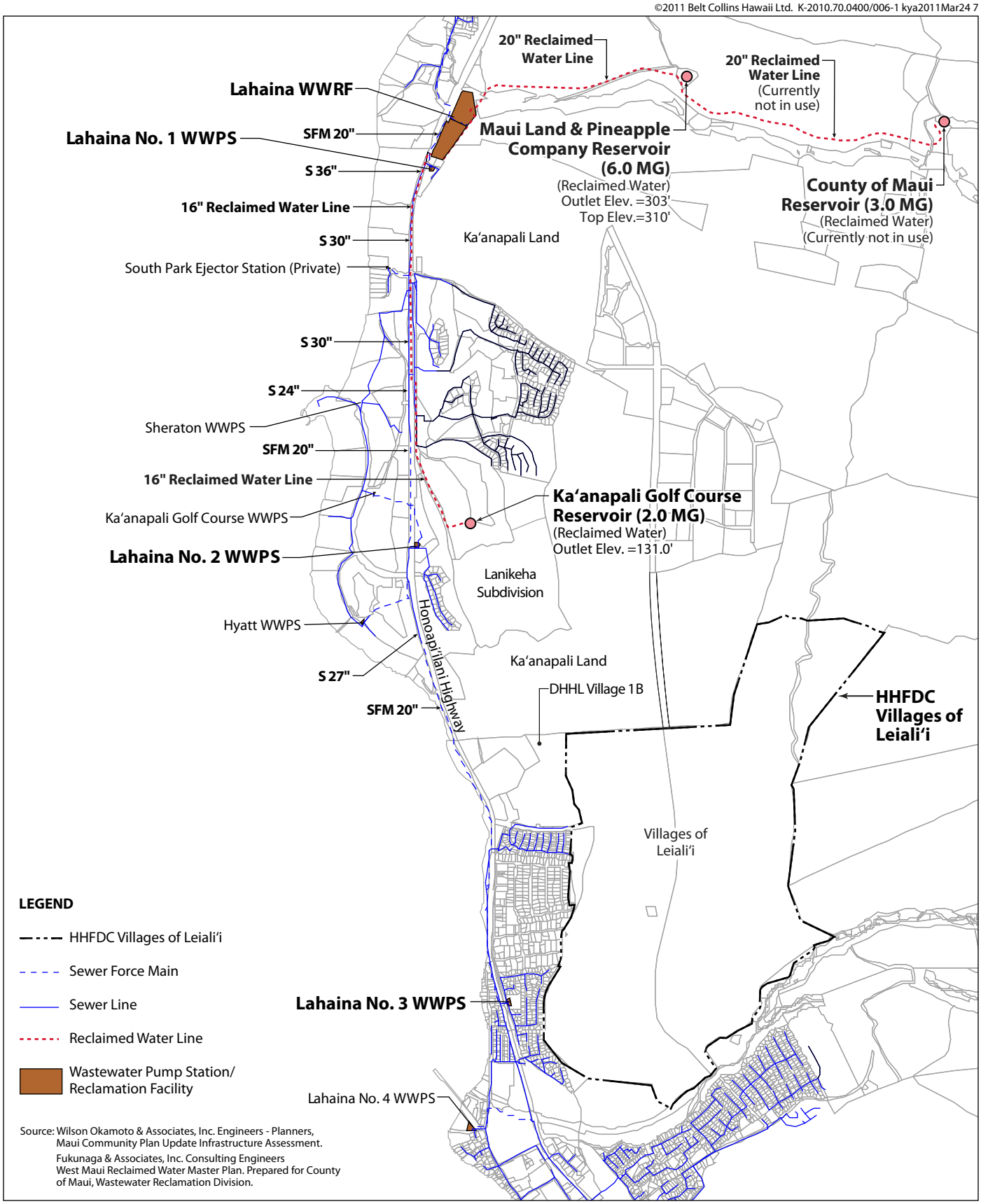
FIRE PROTECTION WATER DISTRIBUTION MAP

LAHAINA TOWN

LAHAINA DISTRICT

Drawn By:	RKT / JCR / DFP	Date:	Aug. 28, 2002
Scale:	1" = 500'	Rev.:	January 2015

APPENDIX D
SEWER AND RECLAIMED WATER SYSTEMS



BELT COLLINS

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SCALE IN FEET

Figure 3-8
EXISTING SEWER INFRASTRUCTURE MAP

Villages of Leiali'i
Phase A Supplemental Master Plan Report
March 2011

ALAN M. ARAKAWA
Mayor

STEWART STANT
Director

MICHAEL M. MIYAMOTO
Deputy Director

MICHAEL RATTE
Solid Waste Division

ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

January 27, 2017

Mr. Alan M. Kato
Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Dear Mr. Kato:

SUBJECT: REQUEST FOR WASTEWATER AND RECLAIMED WATER SERVICE VILLAGES OF LEIALI'I - 200-UNIT MULTI-FAMILY RENTAL PROJECT TMK: (2) 4-5-021: 003

The County of Maui Wastewater Reclamation Division (WWRD) has reviewed the request for the subject 200 unit project to connect to the County of Maui sewer system and receive R-1 recycled water for irrigation purposes and have the following comments:

1. The subject project is located in the southwest portion of the master planned Villages of Leiali'i Community, which will have its own private wastewater treatment facility. We expect that the requested connection would be temporary until the treatment facility is constructed and operational, at which time the flows will be redirected to the new facility.
2. Capacity at the Lahaina Wastewater Reclamation Facility (LWWRF) is currently available, however, it is not guaranteed as it is only allocated when building permits are issued for the actual dwellings. Construction of other projects, delays in this project or changes in the County's disposal regulations or operating permits, could result in the unavailability of capacity.
3. There is currently adequate capacity in the trunk collection lines in Honoapiilani Highway north of Kapunakea Street to accommodate 200 units. Lines south of Kapunakea Street would require capacity upgrades to be completed by your project.
4. WWRD cannot provide R-1 recycled water to this project. Currently the distribution system in unpressurized and only delivers water as far south as the Kaanapali Golf Course reservoir (approximately 2 miles from your project site). Water is pumped to the golf course only when required. While there are future plans to construct a tank and pressurize the system, the intent is to expand use in the Kaanapali area, not to expand further south.

5. Typically, the County does not allow temporary connections to its facilities. Provided that all 200 units will be developed as residential workforce housing units, pursuant to Chapter 2.96, Maui County Code, we would consider connection on an interim basis subject to a recorded agreement with terms developed with the Housing & Human Concerns and Environmental Management Departments Directors. These terms may include:

    a. The agreement would be specifically limited to these 200 workforce housing units. Any further requests for additional units or facilities within the project district may require that the developer upsize sewage transmission lines between the LWWRF and the project, or make a fair share contribution for costs for upgrades that may be incurred by the County.

    b. The agreement would specifically require that the developer commence construction of the 200 units within two (2) years of the execution of the agreement. The agreement would be null and void if this condition is not met, and no funds will be returned to the developer nor credit given toward any future allocation requests.

    c. The connection of these 200 units is on a temporary basis. The County believes that a five (5) year deadline (from the date of execution of the agreement) for transfer of these units to Villages of Lei Ali'i private wastewater treatment facility is reasonable.

    d. As noted above, the entire project will be required to treat its own wastewater and utilize or dispose of all of the recycled water it produces.

    e. Additional requirements as required.

We are available to meet with you to discuss this project further if you require. Please contact me at (808) 270-7422, should you have any questions or comments.

Sincerely,

Eric Nakagawa, Chief
Wastewater Reclamation Division

xc: Stewart Stant, Director
WWRD Planning Section

sr(villages of leialii 200 rental units.docx)