

6 INDIRECT AND CUMULATIVE IMPACTS

6.1 Indirect Impacts

Indirect (also referred to as secondary) effects are effects that are caused by an action but occur later in time or are farther removed in distance, but are still reasonably foreseeable. Such effects may include impacts on environmental resources or public facilities that occur as a result of a project's influence on the pattern of land use or growth rate.

This proposed project focuses on providing hydraulic and treatment upgrades to the Honouliuli WWTP in order to comply with the FACD and to comply with regulatory mandates from the DOH and EPA. Although effluent flow to Mamala Bay is anticipated to increase due to the projected population growth within the sewershed, effluent concentrations and overall loads would decrease as a result of the proposed upgrade to secondary treatment.

The project also provides a basis to meet future wastewater management needs for the projected growth and development in the Honouliuli sewer basin. As noted in Section 3.2, Honouliuli sewer basin population projections were developed for the year 2035 and year 2050 to determine system capacity requirements within the planning period. The projections consider long-term, historic trends for the sewer basin, as well as available data and projections released by CCH and large-scale developments and proposed projects in the area. Previously conducted population and employment projections were also referenced to assist with the effort. The source most relied on was the CCH DPP socioeconomic projections to 2035, which are generally used and accepted for county infrastructure planning efforts (AECOM 2011a).

The results of the population projections indicate overall robust growth within the Honouliuli sewer basin. Most of this growth is projected to occur within the Honouliuli IPS tributary area, where the growing City of Kapolei is located as well as several proposed master planned communities, resorts, and other developments. The population projections methodology and detailed results are provided in Appendix A.

The proposed project is not a population generator in and of itself; rather it is intended to meet the needs of the projected population in the Honouliuli sewer basin. The strong projected growth within the Honouliuli sewer basin is supported by recent growth trends as well as CCH DPP planning documents and growth policies. Additional detail regarding the relationship of State and County land use plans, policies, and controls relating to the proposed project is provided in Section 7.

As stated in Section 5.13.1, construction expenditures associated with the proposed project would result in one-time increases in economic output, employment, and earnings, and one-time increases in fiscal revenues of the state. The economic impacts of project construction would include the impact of expenditures on construction materials, and on earnings of construction workers and professional service providers during the construction period, as well as the impacts of those changes on the overall economy of the CCH. In addition, annual expenditures from operations of the proposed project would result in ongoing increases in economic output, employment, and earnings, and ongoing increases in fiscal revenues.

On a one-time basis, project construction would have an estimated total economic impact of \$1.6 billion in output, supporting a total of approximately 13,430 jobs and earnings of \$520 million (Section 5.13.1). On an ongoing basis, plant operation related to the upgrading of the Honouliuli WWTP would result in an estimated annual impact of \$28.5 million in output, supporting about 90 jobs and earnings of \$3.8 million. These economic impacts comprise the volume of economic activity initially produced by constructing and operating the project (direct effects), as well as indirect effects produced by purchases of inputs from local industries and induced effects produced by household spending that results from changes in earnings. Both construction and operation effects from the proposed project would be beneficial, providing regional economic benefits from construction spending and labor, as well as long-term positive effects on employment and income in the region. Implementation of the project would have beneficial impacts on employment and income.

6.2 Cumulative Impacts

Cumulative impacts are typically defined as the impacts on the environment which result from the incremental impact of a project when added to other past, present, and reasonably foreseeable future actions. The potential environmental effect resulting from the incremental impacts of the proposed upgrade to the Honouliuli WWTP, when added to other recent, ongoing, or proposed construction projects occurring at or in the vicinity of the Honouliuli WWTP, is considered in the cumulative effects analysis in this section.

Known major development projects within the general vicinity of the Honouliuli WWTP are listed in Table 6-1. The approximate locations of the developments are identified in Figure 6-1.

Table 6-1. Status of Known Major Development Projects within the vicinity of the Honouliuli WWTP

Development Name ⁽¹⁾	Original Land Area (Acres) from Development Plans		Status	Remaining Land Area (Acres) to be Developed	
	Res	Non-Res		Res	Non-Res
1. DHHL East Kapolei (also referred to as East Kapolei II)	341	67	Proposed	341	67
2. Ewa Villages	54	—	Proposed	54	-
3a/3b. Ewa by Gentry Makai (East and West)	172	—	Under construction; nearing build-out; approx. 80% complete	34	—
4. Ho'opili	1,600 (Mixed Use)		Proposed	1,600 (Mixed Use)	
5. Ka Makana Alii	—	67	Proposed	—	67
6. UHWO Expansion	—	Approx. 224	Proposed	—	Approx. 224

Legend: DHHL = Department of Hawaiian Home Lands, State of Hawaii; UHWO = University of Hawaii at West Oahu

Sources: Ewa Development Plan, July 2013 (DPP 2013a). Online project status research conducted by AECOM, November and December 2014.

Note: (1) Approximate locations of developments identified on Figure 6-1.

A 20-mile elevated rail line is in the process of construction as part of the Honouliuli Rail Transit Project. A portion of this rail line is located to the north and west of the Honouliuli WWTP (Figure 6-1) and has the potential to encourage higher density, transit oriented development near proposed stations (DPP 2011). The closest proposed station to the project, East Kapolei Station (scheduled to open in 2017), is located more than 1 mi. northwest of the Honouliuli WWTP, as shown on Figure 6-1.

At the Honouliuli WWTP site, there is the potential for a CHP facility to be incorporated on the property. Since this facility would be a new stationary source, the emissions at the Honouliuli WWTP would increase, resulting in adverse air quality impacts on the local level. If the CHP facility option is elected in the future, the CHP facility would need to be considered for future local, State, and Federal air quality permitting in conjunction with the biosolids disposal process during the design stage.

City and County of Honolulu

HONOULIULI/ WAIPAHU/ PEARL CITY WASTEWATER FACILITIES PLAN

Legend

-  Honouliuli WWTP
-  Proposed Development
-  Proposed Mass Transit

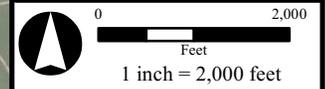
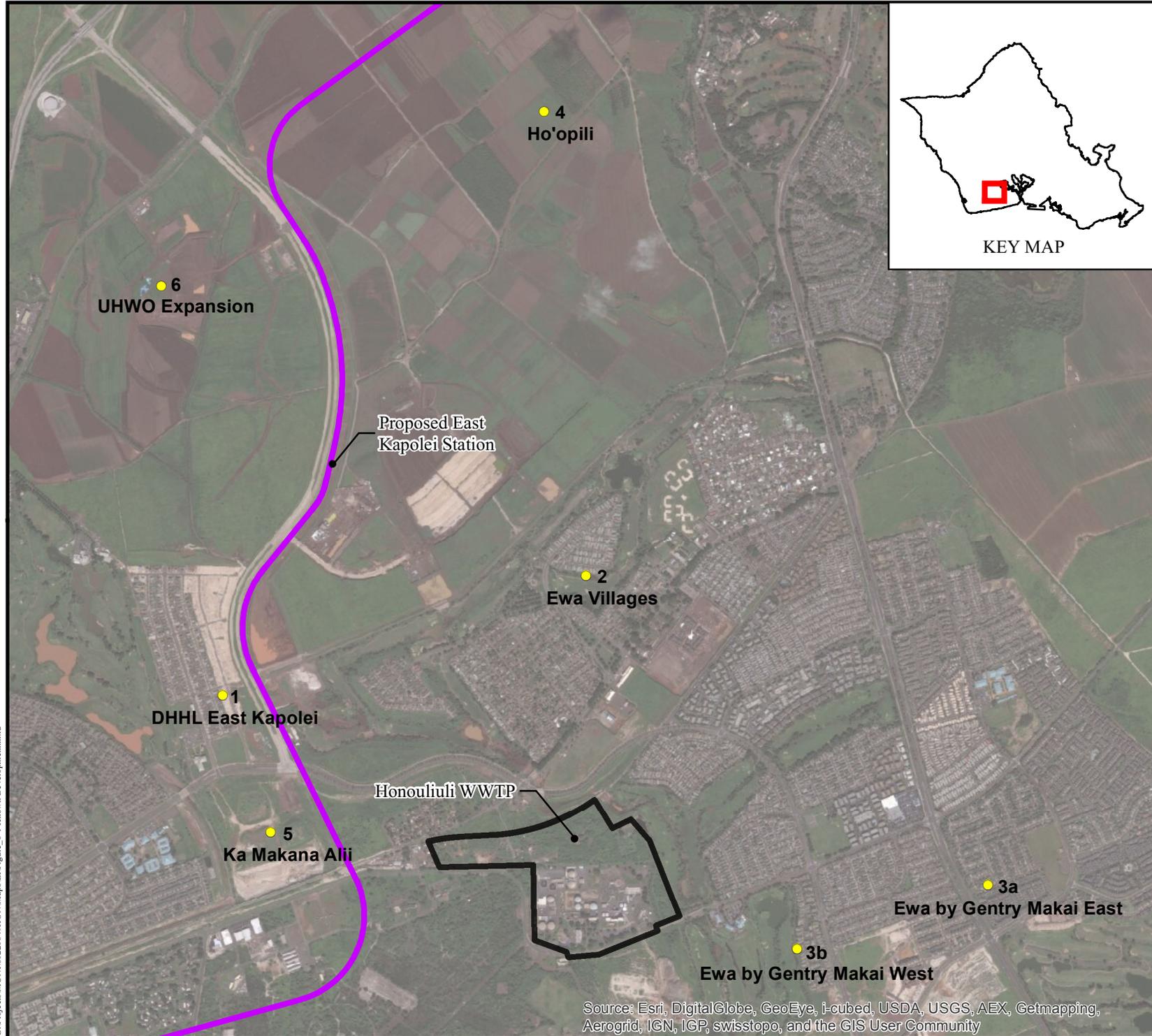
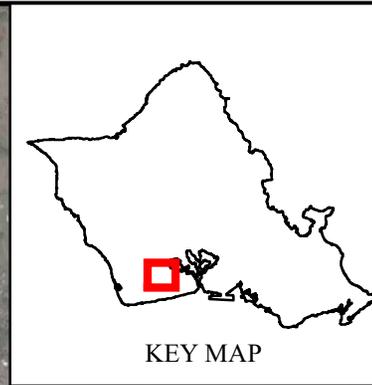


FIGURE 6-1

KNOWN MAJOR
DEVELOPMENT
PROJECTS WITHIN THE
VICINITY OF THE
HONOULIULI WWTP

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AECOM

1001 BISHOP ST, STE 1600
HONOLULU, HAWAII 96813

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community