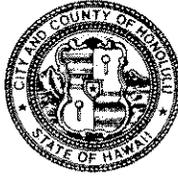


DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

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DIRECTOR

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DEPUTY DIRECTOR

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WW.P 07-0038

February 16, 2007

(OFFICE OF ENVIRONMENTAL
QUALITY CONTROL)

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Final Environmental Assessment (EA) and Finding of No Significant Impact
(FONSI)

Houghtailing Street Area Sewer Rehabilitation
TMK Plats 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

The City and County of Honolulu Department of Design and Construction has reviewed the comments received during the Draft EA 30-day public comment period, which began on June 8, 2006. The agency has determined that this project will not have significant environmental effects and has issued a FONSI determination. Please publish this notice in the March 23, 2007 issue of *The Environmental Notice*.

We have enclosed a completed OEQC Publication Form with two hardcopies and one electronic copy (PDF version on CD) of the Final EA. The project summary submitted with the subject project's Draft EA has changed; therefore, an updated project summary is also included on CD. Additionally, we have enclosed a copy of the Final EA distribution list and an example Final EA distribution letter to participants for your reference. Please contact Mr. Sung Ho Lai at 527-5398 if you have any questions.

Very truly yours,


Eugene C. Lee, P.E.
Director

Enclosures

c: John Katahira, The Limtiaco Consulting Group

Final Environmental Assessment and Finding of No Significant Impact
for the

HOUGHTAILING STREET AREA SEWER REHABILITATION



Contract No. F32965
Project No. 2004089



Prepared for:
City and County of Honolulu
Department of Design and Construction
650 S. King Street
Honolulu, Hawaii 96813



Prepared By:
The Limtiaco Consulting Group
Civil Engineering and Environmental Consultants
650 Iwilei Road, Suite 208
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February 2007

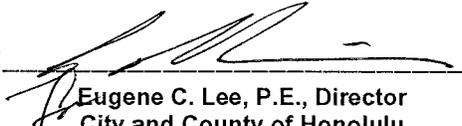
**Final Environmental Assessment
and
Finding of No Significant Impact**

**HOUGHTAILING STREET AREA
SEWER REHABILITATION**

Honolulu, Oahu, Hawaii

(This environmental document has been prepared pursuant to
Chapter 343, Hawaii Revised Statutes)

Responsible Officer: _____


Eugene C. Lee, P.E., Director
City and County of Honolulu
Department of Design and Construction

Date: 2/16/07

Prepared For:

**City and County of Honolulu
Department of Design and Construction**

Prepared By:

**The Limtiaco Consulting Group
Civil Engineering and Environmental Consultants
650 Iwilei Road, Suite 208
Honolulu, Hawaii 96817**

February 2007

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Definition</u>
ADA	Americans with Disabilities Act
BMPs	Best Management Practices
BWS	City and County of Honolulu, Board of Water Supply
CCTV	Closed-Circuit Television
CIP	Capital Improvement Program
CIPP	Cured-In-Place Pipe
City	City and County of Honolulu
CRM	cement rubble masonry
CSM	City and County of Honolulu, Department of Environmental Services, Collection System Maintenance Division
CZM	Coastal Zone Management
DDC	City and County of Honolulu, Department of Design and Construction
DLNR	State of Hawaii, Department of Land and Natural Resources,
DOH	State of Hawaii, Department of Health
DTS	City and County of Honolulu, Department of Transportation Services
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
FONSI	Finding of No Significant Impact
HDD	Horizontal Directional Drilling
HDPE	High-Density Polyethylene
HECO	Hawaiian Electric Company, Inc.
HPD	City and County of Honolulu, Honolulu Police Department
HRS	Hawaii Revised Statutes
I/I	Infiltration and Inflow
KaB	Kaena Clay
KanE	Kaena Very Stony Clay
lf	linear feet
LPSS	Low Pressure Sewer System
mgd	million gallons per day
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NPDES	National Pollutant Discharge Elimination System
Oceanic	Oceanic Time Warner Cable
PE	Polyethylene
PIM	Public Infrastructure Map
PUC	Primary Urban Center
PVC	Polyvinyl Chloride
SAAQS	State Ambient Air Quality Standards
SCIP	Spill CIP Project

LIST OF ABBREVIATIONS (Continued)

<u>Abbreviation</u>	<u>Definition</u>
SHPD	State of Hawaii, Historic Preservation Division
SMA	Shoreline Management Area
SMPR	Small Mainline Projects
State	State of Hawaii
TMDL	Total Maximum Daily Load
TMK	Tax Map Key
WWPS	wastewater pump station
WWTP	wastewater treatment plant

EXECUTIVE SUMMARY

The City and County of Honolulu (City) Department of Design and Construction is proposing to rehabilitate a portion of the City's existing municipal wastewater collection system located within the Houghtailing Street Area, Honolulu, Oahu, Hawaii. The sewer system within this approximately 0.25 square mile project area consists of approximately 42,289 linear feet of sewer line and 311 manholes.

Pursuant to a May 15, 1995 Consent Decree Civil No. 94-00765 DAE between the City, State Department of Health, and the U.S. Environmental Protection Agency, the sewer system located within the project area was identified by the City as in need of rehabilitation. The project was initiated to replace or repair defective sewer system segments for improved maintenance and to improve the hydraulic performance in areas where the hydraulic model predicts surcharge conditions.

The overall objectives of the proposed project are to improve hydraulic performance conditions, correct structural deficiencies, and address current maintenance issues that have developed in the project area. A number of rehabilitation and/or replacement construction method alternatives for the defective portions of the sewer system, as well as alternative scenarios for system improvement through integration or flow diversion opportunities, were evaluated for the proposed sewer improvements. Based on the evaluation, cured-in-place pipe lining for sewer lines and epoxy coatings and cover/frame replacement for existing manholes are proposed to be used for the majority of the proposed improvements. Open cut trench construction methods will be used for those proposed improvements involving spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes.

The proposed project is not anticipated to result in significant short-term or long-term impacts. Temporary short-term impacts to air and water quality, ambient noise levels, and traffic operations may occur during construction activities. In the long-term, the proposed project will contribute to increased environmental quality and have beneficial impacts, such as improved wastewater service reliability.

This Final Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawaii Revised Statutes (HRS). The project would use City funds and, therefore, requires the preparation of an EA pursuant to Chapter 343, HRS. The City DDC has reviewed the comments received during the Draft EA public comment period, and has determined that this proposed sewer rehabilitation project will not have a significant impact on any environmental, cultural, social or economic resources based on the criteria set forth in the State Department of Health Rules, Chapter 200, Title 11, Section 12. The City DDC has issued a Finding of No Significant Impact (FONSI) determination for this proposed project.

PROJECT SUMMARY

Proposing Agency:	City and County of Honolulu Department of Design and Construction
Approving Agency:	City and County of Honolulu Department of Design and Construction
Location:	Honolulu, Oahu, Hawaii
Tax Map Keys:	Tax Map Keys Plats 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Land Area:	0.25 square mile (approximately)
Recorded Fee Owner:	City and County of Honolulu and various private landowners
Existing Use:	Residential, Commercial, and Institutional (e.g., church and cemeteries)
State Land Use Classification:	Urban District
Development Plan Area:	Primary Urban Center
Development Plan Land Use Designation:	Lower-Density Residential, Community/Neighborhood Commercial
County Zoning Designation:	R-5 Residential, B-2 Community Business, P-2 General Preservation
Proposed Action:	The City and County of Honolulu Department of Design and Construction proposes to rehabilitate a portion of the City's existing municipal wastewater collection system located within the Houghtailing Street Area, Honolulu, Oahu, Hawaii. The sewer system within this project area consists of approximately 42,289 linear feet of sewer line, ranging from 6-inch to 30-inch diameter pipes, and 311 manholes. The proposed sewer rehabilitation project

seeks to address existing hydraulic deficiencies, structural problems, and current maintenance issues that have developed in the project area.

Impacts:

Temporary short-term impacts to air and water quality, ambient noise levels, and traffic operations may occur during construction of the proposed project. Such potential short-term impacts that may be incurred as a result of construction activities are not expected to be significant. Additionally, there are no significant long-term impacts to any environmental, cultural, social or economic resources associated with the completion and operation of the proposed sewer rehabilitation project. Conversely, in the long-term, the proposed project will contribute to increased environmental quality and have beneficial impacts, such as improved wastewater service reliability.

**Agency
Determination:**

Finding of No Significant Impact (FONSI)

1. INTRODUCTION

The City and County of Honolulu (City's) Department of Design and Construction (DDC) proposes to rehabilitate a portion of the City's existing municipal wastewater collection system located within the Houghtailing Street Area, Honolulu, Oahu, Hawaii (Figure 1). The Houghtailing Street Area encompasses an approximately 0.25 square mile area, and is bounded by the Kamehameha Schools Bishop Estate and the Kamehameha Shopping Center to the north and northwest, Puukamalii Cemetery and Aulii Street to the south and southeast, North School Street to the southwest, and the Alewa Heights area to the east.

The sewer system within this project area consists of approximately 42,289 linear feet (lf) of sewer line, ranging from 6-inch to 30-inch diameter pipes, and 311 manholes. The 0.25 square mile project area generates a peak design wastewater flow of approximately 6.7 million gallons per day (mgd). This translates to approximately 0.5156 mgd of average daily flow. Wastewater collected by this sewer system flows to the Hart Street Wastewater Pump Station (WWPS), where it is subsequently conveyed to the Sand Island Wastewater Treatment Plant (WWTP), located approximately 3.7 miles southwest of the project area.

In order to facilitate discussion of the existing sewer system conditions and recommendations for improvement, many of the illustrations contained in this EA present site-specific details by partitioning the project area into five collection basins that contribute flow to the North School Street sewer main. Figure 1 presents the extent of the five collection basins and their relative location to the North School Street sewer main, as delineated within the project area.

The proposed sewer rehabilitation project seeks to address existing hydraulic deficiencies, structural problems, and current maintenance issues that have developed in the project area. A Design Alternatives Report has been prepared in support of the proposed sewer rehabilitation project. The recommended action is based on the existing sewer system deficiencies and includes 1) the rehabilitation and replacement of defective portions of the sewer system and 2) system improvements through integration or flow diversion opportunities between collection basins, as follows:

- Sewer line rehabilitation: Improve a total of 30,366 lf of 6-, 8-, 12-, 18- and 30-inch diameter sewer line by installing cured-in-place pipe (CIPP).
- Sewer line spot repair: Use open cut trench excavation for spot repair at 52 locations throughout the project area. The spot repairs will address specific areas with pipe deficiencies and will be CIPP-lined once the repairs are

complete. Spot repair portions of pipe will be replaced with pipe segments of 10 lf.

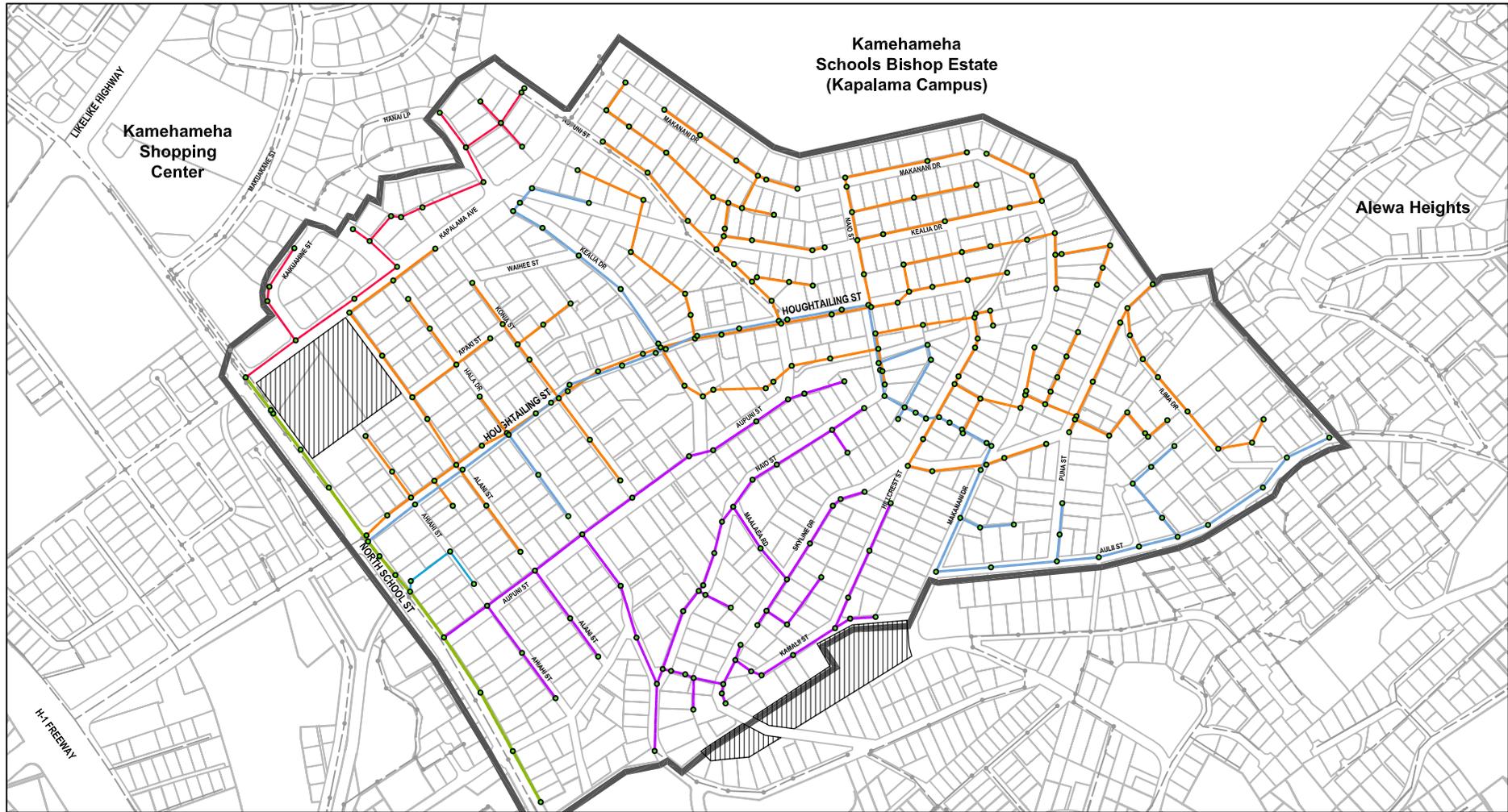
- Sewer line replacement: Replace a total of 2,154 lf of existing sewer line with 8-, 18- and 24-inch diameter new polyvinyl chloride (PVC) pipe using open cut trench excavation.
- New sewer line construction: Using open cut trench excavation, install 270 lf of new sewer line consisting of 12-inch diameter PVC pipe to divert flows from the Houghtailing Basin to the Alewa Basin and 8-inch diameter PVC pipe for Ahiahi Basin improvements.
- Manholes: Rehabilitate 10 existing manholes, including cover/frame replacement for 4 of these manholes, and install 4 new manholes.

Based on the proposed improvements, approximately 78 percent of the existing sewer system located in the project area is recommended for rehabilitation or replacement. Figure 2 summarizes the locations of the proposed improvements for each of the five collection basins and the North School Street sewer main, as well as system-wide improvements.

The proposed project takes into consideration the level of surface impacts (i.e., impacts to traffic, residences, and business), cost-effectiveness, ease of construction, and the ability to repair sewer deficiencies. Additionally, system improvements seek to address surcharge conditions along the Houghtailing Main by diverting flows into the Alewa Main or the Aupuni Main; correct structural and hydraulic deficiencies within the lower sections of the Houghtailing, Alewa, and Aupuni Mains to meet future flow¹ conditions and accommodate sewer cleaning and service activities; and increase system flexibility by providing connections for temporary relief in the event that a downstream area requires maintenance or is temporarily inoperable.

The proposed project includes design and construction considerations to minimize disruptions to existing residences and traffic throughout the project area. Traffic and pedestrian detours will be provided, and construction work will generally be

¹ Used here and throughout this report, “future flow” refers to the City’s hydraulic model for wastewater flow calculations projected to the year 2020. In contrast, “existing flow” (which was also used for the project’s hydraulic analysis) refers to current wastewater flow conditions based on the input available when the City’s hydraulic model was last updated in 2001. In both instances, the City utilizes specific input variables – such as service area, land use, population, dry weather and wet weather inflow/infiltration – to model the wastewater flow characteristics for any given portion of the sewer system. Therefore, “future flow” does not necessarily represent future development, but the anticipated wastewater flow for the year 2020 based on the City’s hydraulic model.



LEGEND:			
	Project Area Boundary		Kapalama Basin
	Existing Sewers Not Within Project		Houghtailing Basin
	Existing SMH Within Project		Alewa Basin
	Existing SMH Not Within Project		Aupuni Basin
			Ahiahi Basin
			North School Street Sewer Main
			Cemeteries

City & County of Honolulu
 Department of Design & Construction
 Wastewater Division



April 2006

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Scale: 1" = 600' Project Area

PROJECT AREA AND BASIN DELINEATION MAP
 Houghtailing Street Area Sewer Rehabilitation

Figure 1

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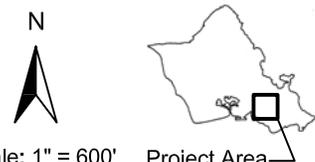
LEGEND:			
	Project Area Boundary		Existing SMH Within Project
	Existing Sewers Within Project		Existing SMH Not Within Project
	Existing Sewers Not Within Project		CIPP REHABILITATION
			OPEN TRENCH PIPE REPLACEMENT/INSTALLATION
			ABANDON AND PLUG
			SMH REHABILITATION
			SPOT REPAIRS (OPEN TRENCH)
			INSTALL NEW SMH

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 Department of Design & Construction
 Wastewater Division



April 2006

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Scale: 1" = 600' Project Area

**PROPOSED SEWER IMPROVEMENTS
 FOR PROJECT AREA**
 Houghtailing Street Area Sewer Rehabilitation

Figure 2

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performed during daytime hours (as opposed to night work) to minimize interruptions to residents.

The completion of the proposed project will result in the correction of existing structural problems, improvement of hydraulic performance conditions, and address current maintenance issues. In areas where a sewer line has been identified for rehabilitation or replacement, the flow capacity of the sewer line will be improved to accommodate existing and future flow levels. The proposed project will successfully improve sewer maintainability and eliminate surcharge conditions, based on hydraulic modeling.

This Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) was prepared pursuant to the State of Hawaii (State) environmental review process as required and defined by Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules of the State Department of Health (DOH).

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2. SETTING AND PROJECT DESCRIPTION

2.1. Background and Project Need

The purpose of the proposed sewer rehabilitation project is to evaluate and improve the current hydraulic, structural, and maintenance conditions of the existing sewer system, comprised of approximately 42,289 lf of sewer line and 311 manholes, located within the Houghtailing Street Area, Honolulu, Oahu, Hawaii. The sewer system is part of the City's municipal wastewater collection system, and construction of the system in the project area began as early as the 1920s and continued through the 1950s. Construction of the sewer system was primarily in support of residential subdivisions that were in development. The system has since deteriorated at various locations, and the older portions of the system are beyond the projected useful life of the sewer. Furthermore, the poor condition of some lines precludes effective system maintenance. Currently, wastewater in the collection area is primarily generated from residential sources, as well as some commercial and institutional sources. Improvements are needed to correct existing hydraulic deficiencies, structural problems, and current maintenance issues that have developed in the project area for continued sewer service.

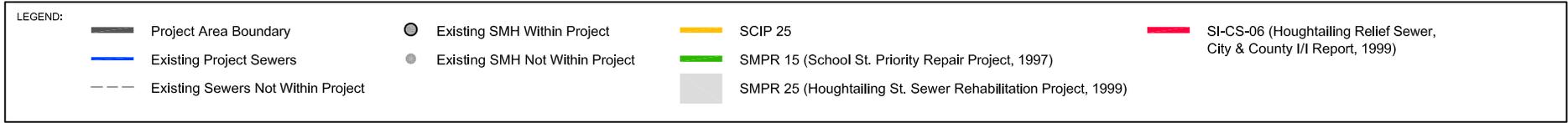
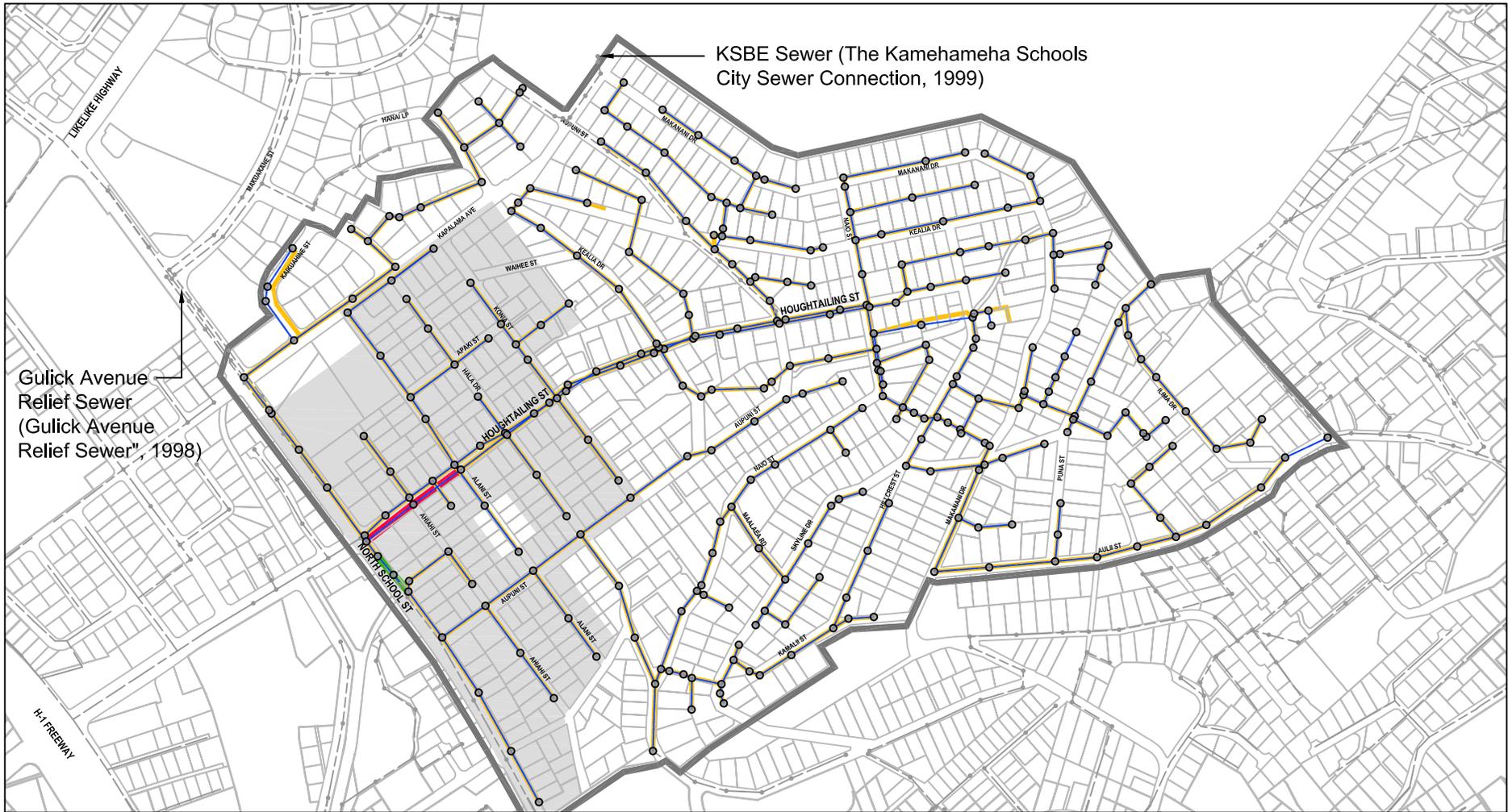
Pursuant to a May 15, 1995 Consent Decree Civil No. 94-00765 DAE between the City, State DOH, and the U.S. Environmental Protection Agency (EPA), the sewer system located within the project area was identified by the City as in need of rehabilitation. The requirements of the Consent Decree included a 20-year Capital Improvement Program (CIP) and five supplemental Programs. Additionally, the City submitted a Final Sewer Infiltration/Inflow (I/I) Plan to the EPA in December 1999 in compliance with the Consent Decree.

The "Small Diameter Sewer Rehabilitation" Program is one of the five supplemental Programs and provides for rehabilitation of sewer lines which require frequent maintenance by the City's Department of Environmental Services, Collection System Maintenance Division (CSM). Frequent maintenance is generally due to clogs, which may result from debris or grease buildup due to roots, sags, or offset joints. Root entries may be caused by structural defects such as cracks and joint separation. However, root entries can also occur where significant structural defects do not exist, such as at joint connections with no joint separation. Projects that are analyzed for frequent maintenance are also analyzed for hydraulic and structural adequacy. The "Small Diameter Sewer Rehabilitation" Program projects are divided into two groups, Spill CIP Projects (SCIPs), which typically cover geographically larger projects, and Small Mainline Projects (SMPR), which generally cover geographically smaller projects.

The proposed Houghtailing Street Area Sewer Rehabilitation project was initiated to replace, repair, or rehabilitate defective sewers for improved maintenance, and secondly, to improve the hydraulic performance in areas where the hydraulic model predicts surcharge conditions. The scope of the proposed project encompasses all, or portions of, several of the identified “Small Diameter Sewer Rehabilitation” Program projects, as well as a rehabilitation project identified in the 1999 Final Sewer I/I Plan. These projects are described below and depicted in Figure 3.

SMPR 15: School Street Priority Repair. In 1997, CSM identified emergency repairs necessary within the sewer segment from manhole SID 273269 (ISAP SI86HA1000) to manhole SID 273089 (ISAP SI86AA1021). The project included the installation of a new manhole approximately midway along the segment, the plugging and abandonment of the existing pipe segment downstream of manhole SID 273269 (ISAP SI86HA1000), and the replacement of damaged pipe downstream of the new manhole to manhole SID 273089 (ISAP SI86AA1021). Field inspections performed in 2005 confirmed the construction of hydraulic improvements such that the segment from manhole SID 273269 (ISAP SI86HA1000) to the new manhole location has been cut and plugged, and flow from manhole SID 273269 (ISAP SI86HA1000) bypasses the 8-inch North School Street Main and goes directly into the 30-inch School Street Interceptor Sewer via a short connecting segment. This connecting segment is shown on the 1937 as-built drawings for the interceptor sewer. Unfortunately the new manhole could not be located during field investigation and recent toning efforts provided by the project surveyor. CSM has been notified and intends to locate the manhole. If located, the manhole and sewer information will be updated in the City’s Geographic Information Systems database.

SMPR 25: Liliha – Mauka of School Street. This “in-house” study was initiated by the City based upon the incidence of trouble calls, sewer spill reports, and high maintenance frequencies within the area along and north of North School Street between Kapalama Avenue and Pohaku Street, and south of Kealia Drive. Sewers in this study include: the majority of the North School Street Main; portions of 6-inch sewers along Houghtailing Street, Aupuni Street, Kapalama Avenue, Konia Street, Alani Street, Ahiahi Street, Hala Drive, and Apaki Street; portions of the 12-inch sewer along Houghtailing Street; and portions of 6-inch sewers located within area easements across private property. The study progressed through initial stages, including the completion of closed-circuit television (CCTV) inspections in 1999. However, it became apparent that system structural and hydraulic issues could not be correctly addressed within the small project area.

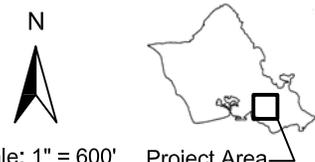


City & County of Honolulu
 Department of Design & Construction
 Wastewater Division



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Scale: 1" = 600' Project Area

HISTORICAL PROJECT MAP
 Houghtailing Street Area Sewer Rehabilitation

Figure 3

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SCIP 25: School Street/Houghtailing Area. Since SMPR 25 revealed the need to address sewer system rehabilitation requirements north of the School Street Main along Houghtailing Street, and throughout the Kamehameha Heights area and portions of the Alewa Heights area, the City conceived SCIP 25. This study included the area and preliminary findings of SMPR 25, and was also based on trouble calls, spill reports, and frequent maintenance areas. SCIP 25 was eventually incorporated into the project scope for the Houghtailing Street Area Sewer Rehabilitation project, which commenced in 2004.

SCIP 13A: Liliha (North). This City “in-house” study was envisioned to include the study area of SMPR 25, the Kamehameha Heights and lower Alewa Heights areas, and other various sewer segments in the Liliha and Lanakila areas. SCIP 13 included these areas and the Kamehameha Heights and lower Alewa Heights areas with SMPR 25 becoming SCIP 25. The Liliha and Lanakila areas became SCIP 13A (North), which is located outside of the proposed Houghtailing Street Area Sewer Rehabilitation project area.

SI-CS-06: Houghtailing Street Relief Sewer. This project is listed among the Sand Island collection basin capital improvement projects in the 1999 Final Sewer I/I Plan report’s Rehabilitation Program. The original project description proposed the construction of approximately 470 lf of 10-inch diameter relief sewer parallel to the existing trunk sewer located on Houghtailing Street from Alani Street to School Street. The project was conceptually developed for initiation between January 2012 and December 2019, and was intended for consolidation or modification with respect to other projects. The planning concept for SI-CS-06 has been incorporated into the currently proposed Houghtailing Street Area Sewer Rehabilitation project.

2.2. Project Location

In general, the proposed project is located within the Houghtailing Street Area, Honolulu, Oahu, Hawaii (Figure 1). The Houghtailing Street Area encompasses an approximately 0.25 square mile area, and is bounded by the Kamehameha Schools Bishop Estate and the Kamehameha Shopping Center to the north and northwest, Puukamalii Cemetery and Aulii Street to the south and southeast, North School Street to the southwest, and the Alewa Heights area to the east. The proposed sewer rehabilitation project affects portions of Tax Map Key (TMK) Plats 1-6-11 to 1-6-20, 1-6-027, and 1-8-034 to 1-8-035 that comprise existing roadways and sections of private property with sewer lines traversing across (Figure 4). Most of the parcels located within the project area are privately owned, with the exception of existing City-owned roadways and easements held by the City across private property. These privately owned parcels are currently occupied by residents and tenants with

residential, commercial, and institutional (e.g., the Grace Bible Church and Kaahumanu, Maluhia, and Puea cemeteries) uses.

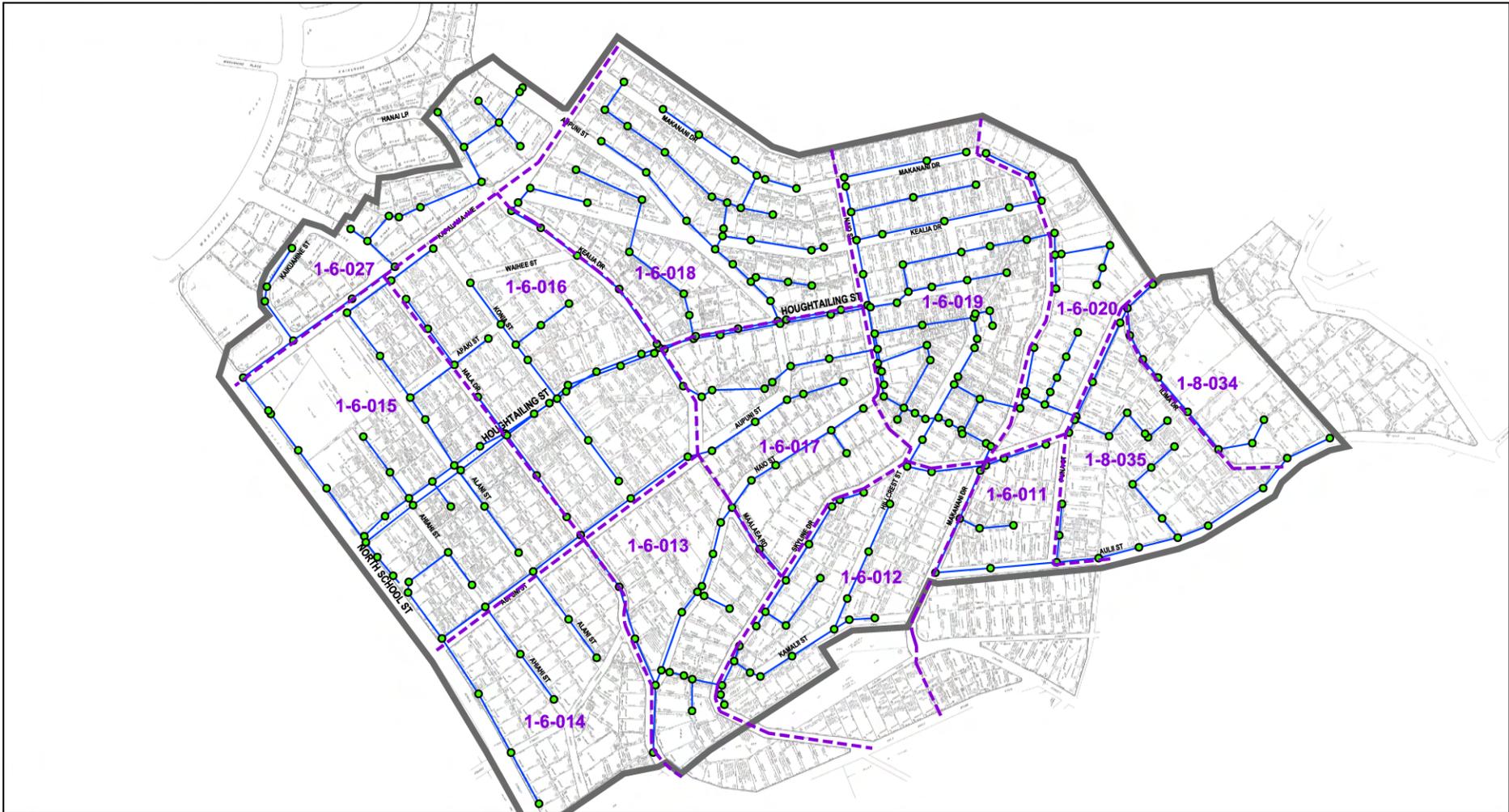
The sewer system serving the Houghtailing Street Area is part of the City's municipal wastewater collection system, and serves residential and some commercial and institutional uses. This sewer system is tributary to the Hart Street WWPS, where it is subsequently conveyed to the Sand Island WWTP, located approximately 3.7 miles southwest of the project area.

2.3. Existing Sewer Line Conditions

The proposed project was initiated to replace or repair defective sewer system segments for improved maintenance and to improve the hydraulic performance in areas where the hydraulic model predicts surcharge conditions. CSM maintains service logs for sewers within the City's jurisdiction. The sewer maintenance logs within the project area indicate frequent cleaning at 1-to-4 month and 5-to-9 month intervals in some areas, and cleaning at 10-to-18 months in several areas. The majority of the sewers within the project area have acceptable cleaning frequencies that are greater than 19 months. Reportedly, maintenance frequency is high in some areas due to poor sewer line condition, namely root intrusion and broken pipes.

CSM records indicate that there were 34 sewer spills within the project limits from 1999 to present. Twenty-eight of those spills occurred in the Houghtailing Basin, one of the five collection basins within the project area, and were typically caused by debris, grease, root intrusion, broken pipes, and wet weather conditions.

Surface reconnaissance surveys, manhole inspections, CCTV investigations, and structural and hydraulic analyses were conducted in support of the proposed sewer rehabilitation project as part of the Design Alternatives Report. These investigations confirmed that existing sewer conditions in certain areas are compromised and in need of improvement. Sewer pipe and manhole structural deficiencies within each of the five collection basins and the North School Street sewer main were identified. The most severe sewer pipe structural deficiencies in the project area were collapsed and missing pipe, with cracks, sags, root intrusion, broken pipe, offset/misaligned and broken joints, and large holes encountered as well. Typical sewer manhole deficiencies observed within the project area included corrosion or damage of the manhole cover and frame, deteriorated rungs, cracks, light grease, and light debris in the channel and/or bench. Additionally, there were a few instances where non-sewer pipes were found crossing sewer manholes. Various hydraulic deficiencies were identified throughout the project area and consist of mean full flow velocities less than or greater than the City design standards of 2 and 10 feet per second for sewer pipes, inadequacy of sewer pipes in terms of full flow



- LEGEND:
- Project Area Boundary
 - Existing Project Sewers
 - Existing Sewers Not Within Project
 - Existing SMH Within Project
 - Existing SMH Not Within Project
 - Tax Map Key Plat Boundary

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Scale: 1" = 600'



Project Area

TAX MAP KEY PLATS

Houghtailing Street Area Sewer Rehabilitation

Figure 4

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velocity standards, inadequate manhole inverts and corresponding pipe slopes, failure of sewer pipes to meet the City's minimum size requirements, and anticipated surcharging conditions.

2.4. Land Ownership

Most of the parcels within the project area are privately owned, with the exception of existing City-owned roadways and easements held by the City across private property. The proposed sewer rehabilitation project would affect those portions of the project area that comprise existing roadways and sections of private property with sewer lines traversing across. The majority of the portions of the roadways that would be affected by the proposed sewer rehabilitation project are under the jurisdiction of the City's Department of Transportation Services (DTS). Additionally, several sewer easements under the jurisdiction of the City are located throughout the project area, and are necessary as many sewer segments are located along the back perimeter of residential lots.

An easement study has been completed in order to confirm the ownership of all sewer easements held across private property within the project area. Based on the search of easement documentation, it was determined that there are a few instances in which the City has not been granted an easement located across private property. Additionally, it was discovered that there are some privately owned roadways within the project area. The City's Land Division is currently in the process of acquiring all necessary sewer easements within the project area.

2.5. Surrounding Uses, Tenants, and Structures

Generally, the project area is characterized by single-family homes, with some commercial uses adjacent to and in the area of North School Street. The project area also encompasses institutional uses, including the Grace Bible Church and the Kaahumanu, Maluhia, and Puea cemeteries. Typically, roadways within the project area are rather narrow. Due to the high density of residents, parked cars line many sections of the roads, and in some areas reduce the clearance available for larger vehicles. At the southwest end of the project area in the vicinity of North School Street, the lower sections of Kapalama Avenue, Houghtailing Street, and Aupuni Street are considerably wider than other area roadways.

In some cases, structures, walls, or planter boxes have been installed by homeowners above the existing sewer lines within the project area. Additionally, heavy vegetation has grown over and along the routes of some of the existing sewer segments. Such incidents may cause strain or damage to the existing sewer line, preclude access, and make the sewer system difficult to maintain. Additionally, due to misinformation or disregard for the easement, these incidents often occur in the

project area within existing sewer easements held by the City across private property. Regardless of the site specific conditions of easements, cooperation between the landowner and the City is important to maintain the integrity of sewers.

Other uses that surround the project area include commercial, light industrial, and institutional uses. Area restaurants, grocers, retailers, gasoline stations, and other businesses are located primarily along North School Street. The Kamehameha Shopping Center is situated to the northwest of the project limits at the intersection of Likelike Highway and North School Street. The Bishop Museum is also in the project vicinity at the intersection of Likelike Highway and the H-1 Freeway. The Puukamalii Cemetery is located immediately adjacent to the southeast boundary of the project area. There are numerous schools located nearby, including Kapalama Elementary School, Lanakila Elementary School, the Kamehameha Schools Bishop Estate Kapalama Campus, Damien Memorial High School, and the Academy of the Pacific. The Kamehameha Schools Bishop Estate Kapalama Campus is located immediately north of the project area boundary, and it should be noted that wastewater from the Kapalama Campus is received by the sewer system within the project area.

2.6. Proposed Action

The proposed sewer rehabilitation project seeks to achieve the following objectives:

- Improve hydraulic performance conditions;
- Correct structural deficiencies; and
- Address current maintenance issues.

A Design Alternatives Report has been prepared in support of the proposed sewer rehabilitation project, and the recommended action includes 1) the rehabilitation and replacement of defective portions of the sewer system and 2) system improvements through integration or flow diversion opportunities between collection basins, as follows:

- Sewer line rehabilitation: Improve a total of 30,366 lf of 6-, 8-, 12-, 18- and 30-inch diameter sewer line by installing CIPP.
- Sewer line spot repair: Use open cut trench excavation for spot repair at 52 locations throughout the project area. The spot repairs will address specific areas with pipe deficiencies and will be CIPP-lined once the repairs are complete. Spot repair portions of pipe will be replaced with pipe segments of 10 lf.

- Sewer line replacement: Replace a total of 2,154 lf of existing sewer line with 8-, 18- and 24-inch diameter new PVC pipe using open cut trench excavation.
- New sewer line construction: Using open cut trench excavation, install 270 lf of new sewer line consisting of 12-inch diameter PVC pipe to divert flows from the Houghtailing Basin to the Alewa Basin and 8-inch diameter PVC pipe for Ahiahi Basin improvements.
- Manholes: Rehabilitate 10 existing manholes, including cover/frame replacement for 4 of these manholes, and install 4 new manholes.

As previously discussed, Figure 1 presents a map delineating the extent of the five collection basins and their relative location to the North School Street sewer main. Figures 5 through 11 illustrate the locations of the proposed improvements for each of the five collection basins and the North School Street sewer main, as well as system-wide improvements. A description of the construction methods proposed for the rehabilitation and replacement of the sewer lines and manholes, as well as details of the proposed system improvement scenario, are presented below. It should be noted that common to all sewer line rehabilitation and replacement construction methods, temporary sewer bypass lines will be required to allow continued sewer service during the installation of the new sewer system components (refer to Section 3.14.4, Wastewater System below for more details). These bypass lines would be located either aboveground or underground, depending on site conditions.

2.6.1. Sewer Line Rehabilitation/Replacement Methods

Cured-In-Place Pipe. Cured-in-place pipe (CIPP) lining is a form of sewer rehabilitation that lines the interior surface of the deficient host pipe or lateral with a structural liner which is resistant to infiltration and corrosion. The liner used in the CIPP process is a flexible, cylindrical membrane with an inner felt lining impregnated with a thermosetting resin. The liner is inserted into the existing sewer line via a manhole or cleanout. It is then inverted using water or air and the resin-impregnated side is pressed flush against the interior face of the host pipe. This installation process requires the use of generators and boilers. Once the resin sets, a cutting tool is inserted in the liner to reinstate the laterals. Laterals can also be rehabilitated with the CIPP process by using the sewer cleanout for access. The end product is inspected via closed-circuit video camera to ensure proper application.

The CIPP liner is structurally sound, resistant to corrosion, and has no joints or seams. Thickness of the liner depends on several factors including pipe diameter, external pressure, and liner properties. The thickness of the liner

slightly reduces the pipe diameter, however, the flow capacity is compensated by the liner's smooth finish. This adjustment in Manning's roughness coefficient "n" typically increases flow capacity by approximately 20 to 50 percent, depending on the pipe diameter.

CIPP can be used to bridge holes and mend cracked or broken pipe and joints. In cases where missing pipe and/or large holes are encountered, a pre-liner may be inserted in the pipe segment prior to CIPP installation to act as a host pipe.

Advantages of CIPP lining, as applicable to the project area, are as follows:

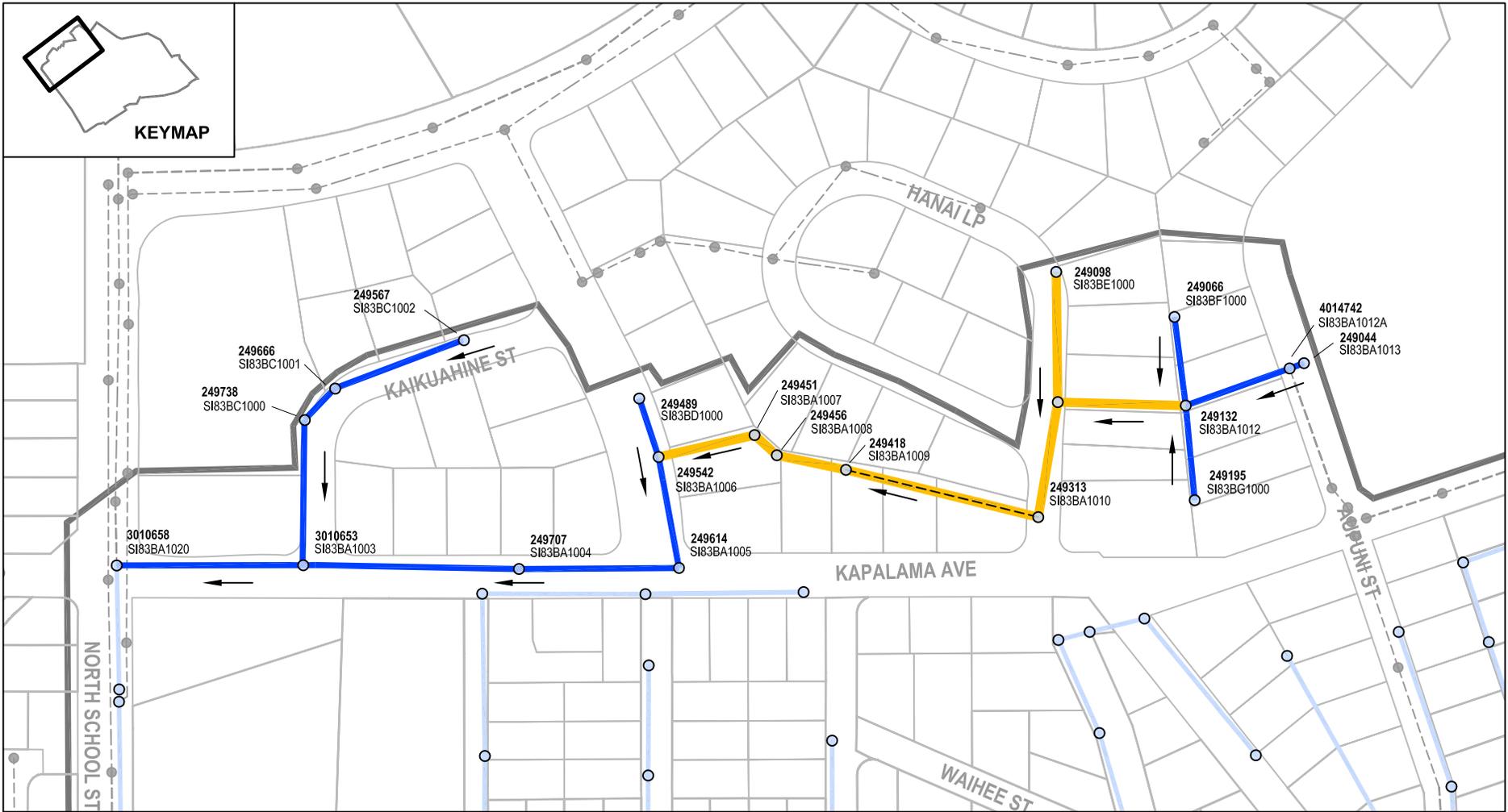
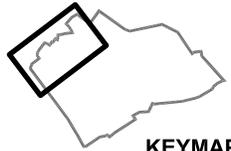
- Locally available construction alternative.
- Minimal surface impacts and traffic disturbances.
- Generally lower construction costs due to rapid installation.
- Relatively rapid installation process, thereby minimizing the duration of temporary sewer by-pass requirements.

Disadvantages of CIPP lining, as applicable to the project area, include the following:

- CIPP could not be used to correct sags or slope deficiencies.
- Connection point of lateral to main is susceptible to infiltration.
- Possibility of wrinkles and bubbles.
- Odors from sewer manhole venting and resins.
- Noise.

Open Cut Trench. Considered the "conventional" method of installing new pipe, open cut trench construction methods require trenching from the ground surface to fully expose the existing sewer line prior to replacement. In general, open cut trenching involves excavating a trench, installing adequate shoring to protect the sidewalls of the trench or sloping its sides, laying the pipe within the excavation, and backfilling the trench. During trenching, subsurface materials are incrementally removed and internal bracing is installed between the walls to support the excavation. Once the desired depth is reached, the sewer pipe is laid followed by backfilling and restoration of the ground surface.

For those locations where open cut trench construction methods will be utilized, the use of flowable fill or controlled low strength material as backfill material will be considered during the design phase of the proposed project. It is acknowledged that the use of such materials would be suitable; however, the determination as to whether or not these materials can be used in construction of the proposed project will ultimately be based on the cost-effectiveness and construction budget constraints.



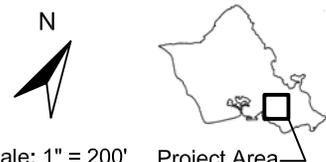
LEGEND:			
	Project Area Boundary		SMH REHABILITATION
	Existing Sewers Not Within Project		SPOT REPAIRS
	Existing Project Sewers Within Basin		CIPP REHABILITATION
	Existing Project Sewers Not Within Basin		CIPP WITH PRE-LINER
	Flow Direction		OPEN TRENCH PIPE REPLACEMENT
	249567 SMH SID Number		SEWERS TO BE ADDRESSED IN SYSTEM IMPROVEMENT
	SI83BA1004 SMH ISAP Number		
	Existing SMH Within Project		
	Existing SMH Not Within Project		

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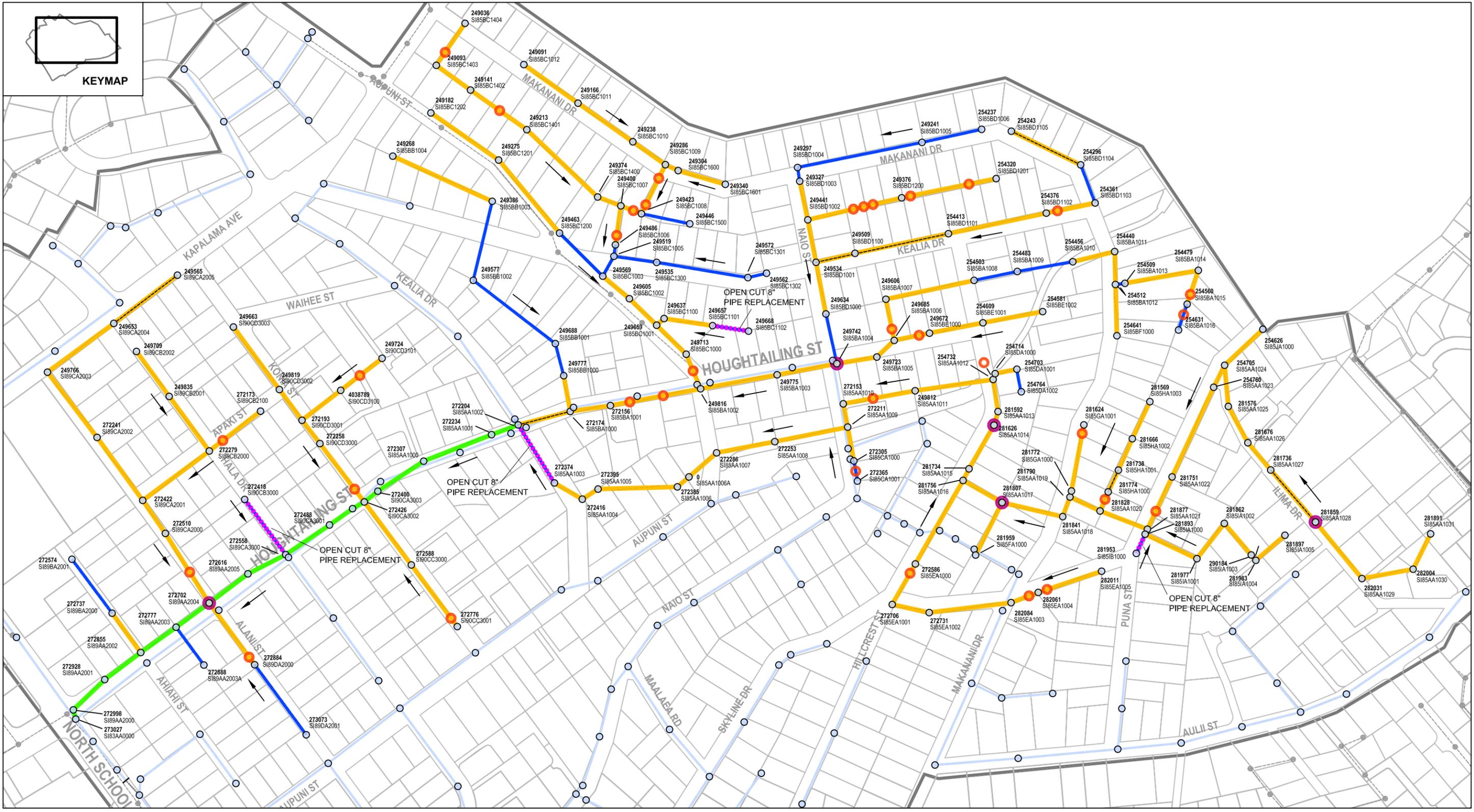
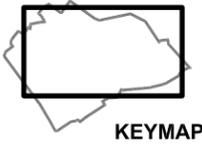


Scale: 1" = 200' Project Area

**PROPOSED SEWER IMPROVEMENTS
 FOR KAPALAMA BASIN**
 Houghtailing Street Area Sewer Rehabilitation

Figure 5

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Scale: 1" = 240'



Project Area

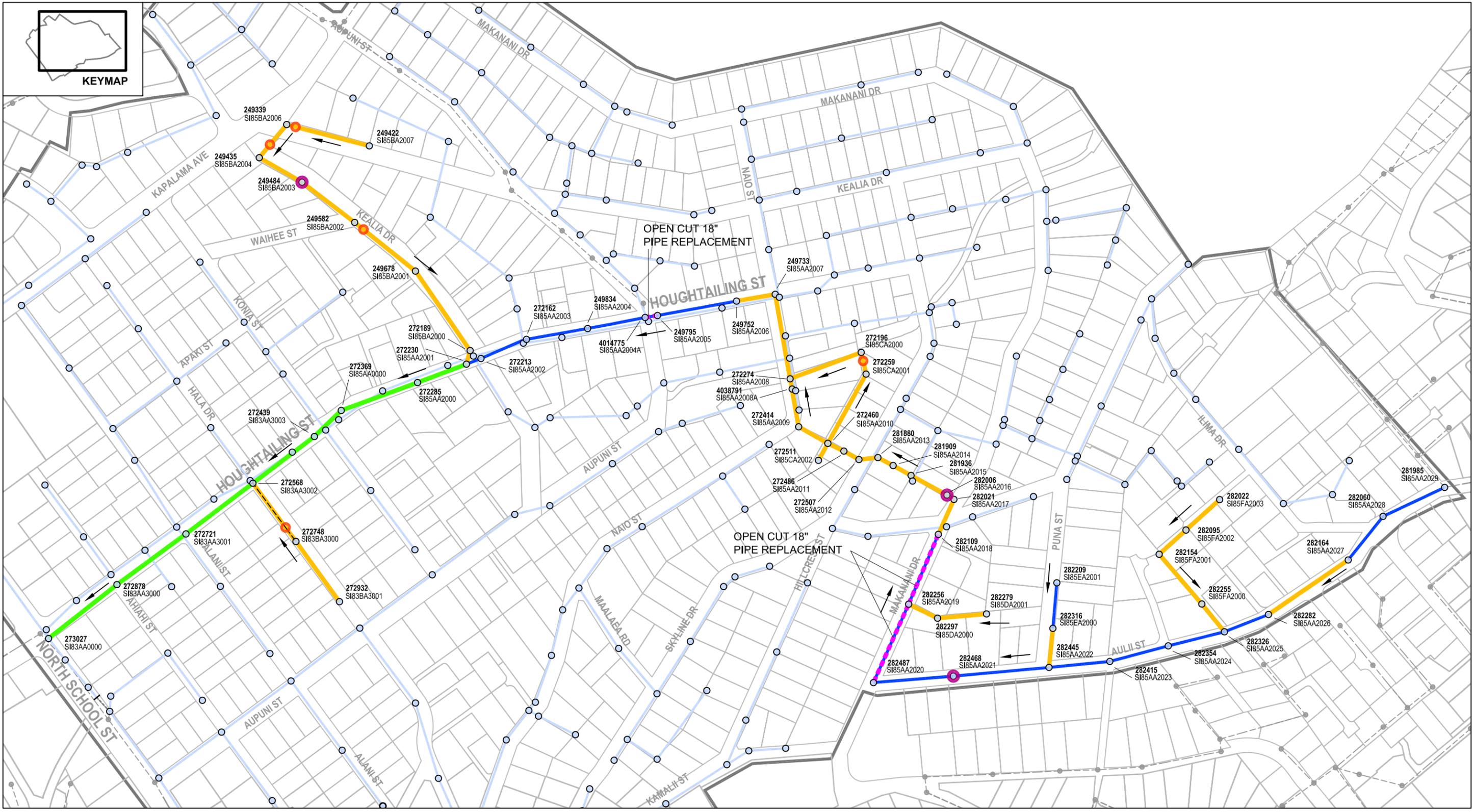
Legend

- Project Area Boundary
- - - Existing Sewers Not Within Project
- Existing Project Sewers Within Basin
- Existing Project Sewers Not Within Basin
- Flow Direction
- Existing SMH Within Project
- Existing SMH Not Within Project
- 249567 SMH SID Number
- SI83BA1004 SMH ISAP Number
- SMH REHABILITATION
- SPOT REPAIRS
- CIPP REHABILITATION
- CIPP WITH PRE-LINER
- OPEN TRENCH PIPE REPLACEMENT
- SEWERS TO BE ADDRESSED IN SYSTEM IMPROVEMENT

PROPOSED SEWER IMPROVEMENTS FOR HOUGHTAILING BASIN
 Houghtailing Street Area Sewer Rehabilitation

Figure 6

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Scale: 1" = 250'



Project Area

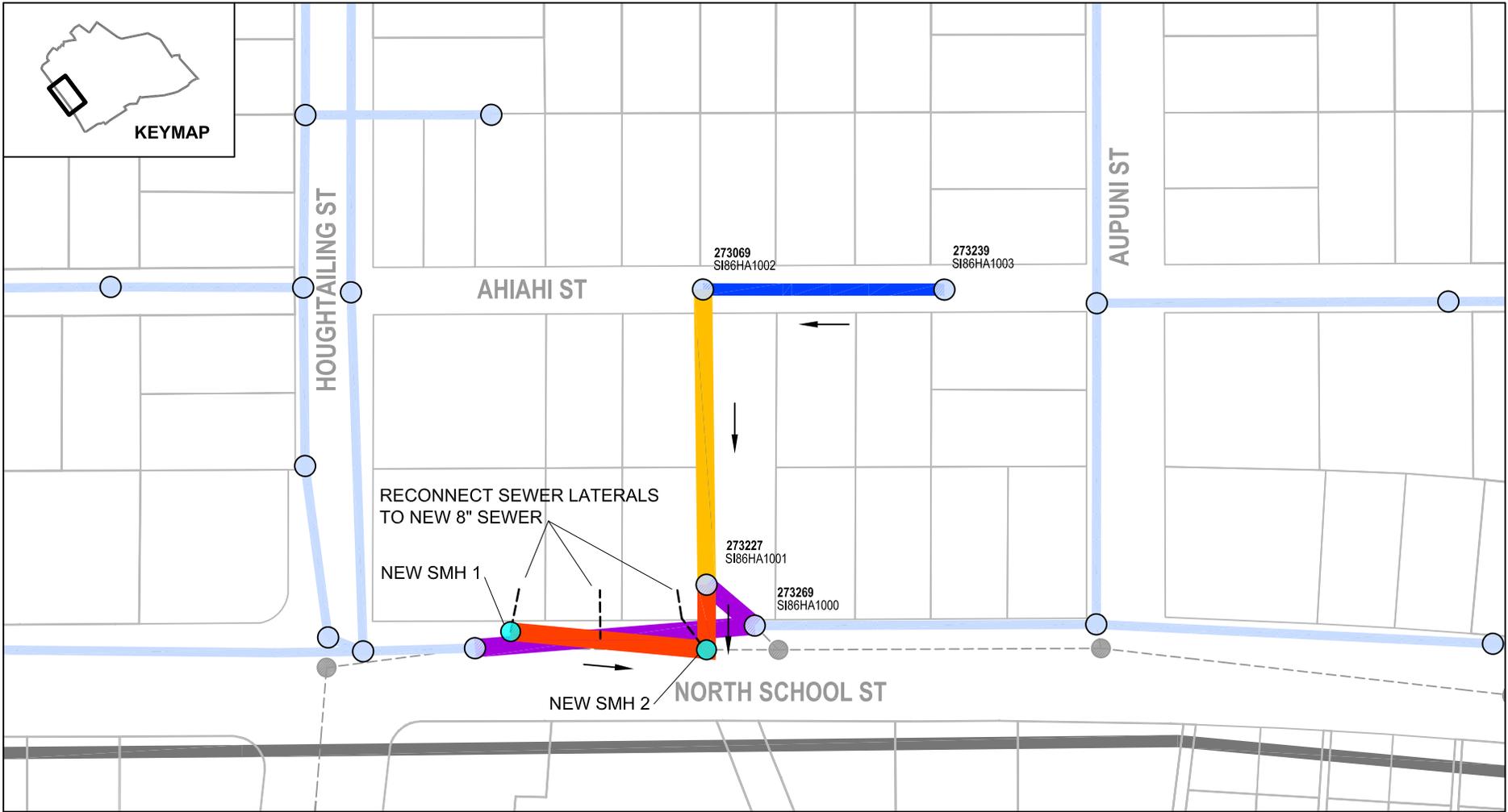
Legend

- Project Area Boundary
- Existing Sewers Not Within Project
- Existing Project Sewers Within Basin
- Existing Project Sewers Not Within Basin
- Flow Direction
- Existing SMH Within Project
- Existing SMH Not Within Project
- SMH SID Number
- SMH ISAP Number
- CIPP REHABILITATION
- CIPP WITH PRE-LINER
- OPEN TRENCH PIPE REPLACEMENT
- SEWERS TO BE ADDRESSING IN SYSTEM IMPROVEMENT
- SMH REHABILITATION
- SPOT REPAIRS

PROPOSED SEWER IMPROVEMENTS FOR ALEWA BASIN
 Houghtailing Street Area Sewer Rehabilitation

Figure 7

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LEGEND:	<ul style="list-style-type: none"> — Project Area Boundary - - - Existing Sewers Not Within Project — Existing Project Sewers Within Basin — Existing Project Sewers Not Within Basin ← Flow Direction 	<ul style="list-style-type: none"> 249567 SMH SID Number SI83BA1004 SMH ISAP Number ○ Existing SMH Within Project ● Existing SMH Not Within Project 	<ul style="list-style-type: none"> — CIPP REHABILITATION - - - CIPP WITH PRE-LINER — OPEN TRENCH PIPE REPLACEMENT — SEWERS TO BE ADDRESSED IN SYSTEM IMPROVEMENT 	<ul style="list-style-type: none"> ○ SMH REHABILITATION ○ SPOT REPAIRS ● INSTALL NEW SMH — INSTALL NEW 8" SEWER — ABANDON AND PLUG
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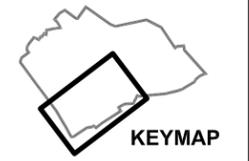
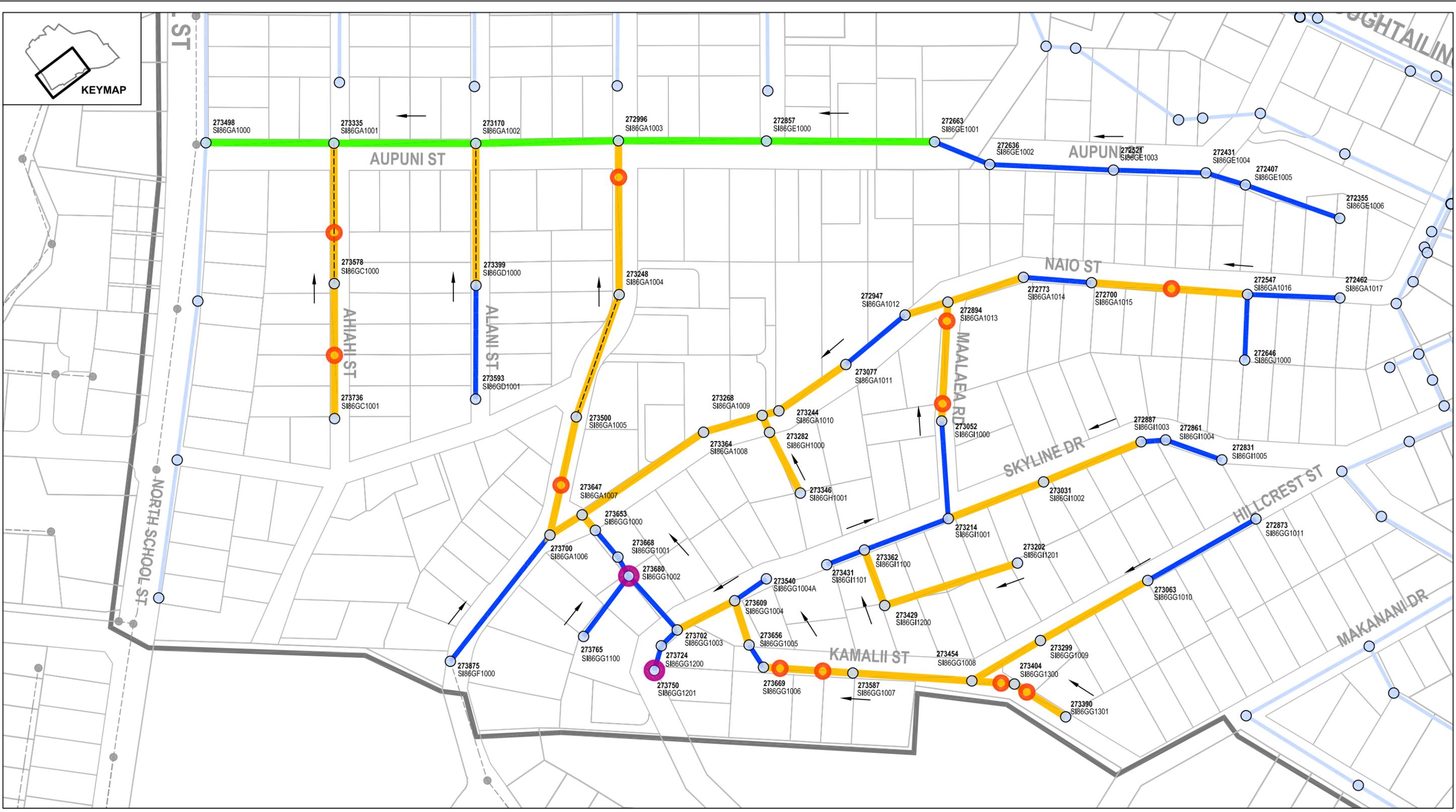


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Scale: 1" = 100' Project Area

PROPOSED SEWER IMPROVEMENTS FOR AHIACHI BASIN
 Houghtailing Street Area Sewer Rehabilitation
 Figure 8

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Scale: 1" = 150'



Project Area

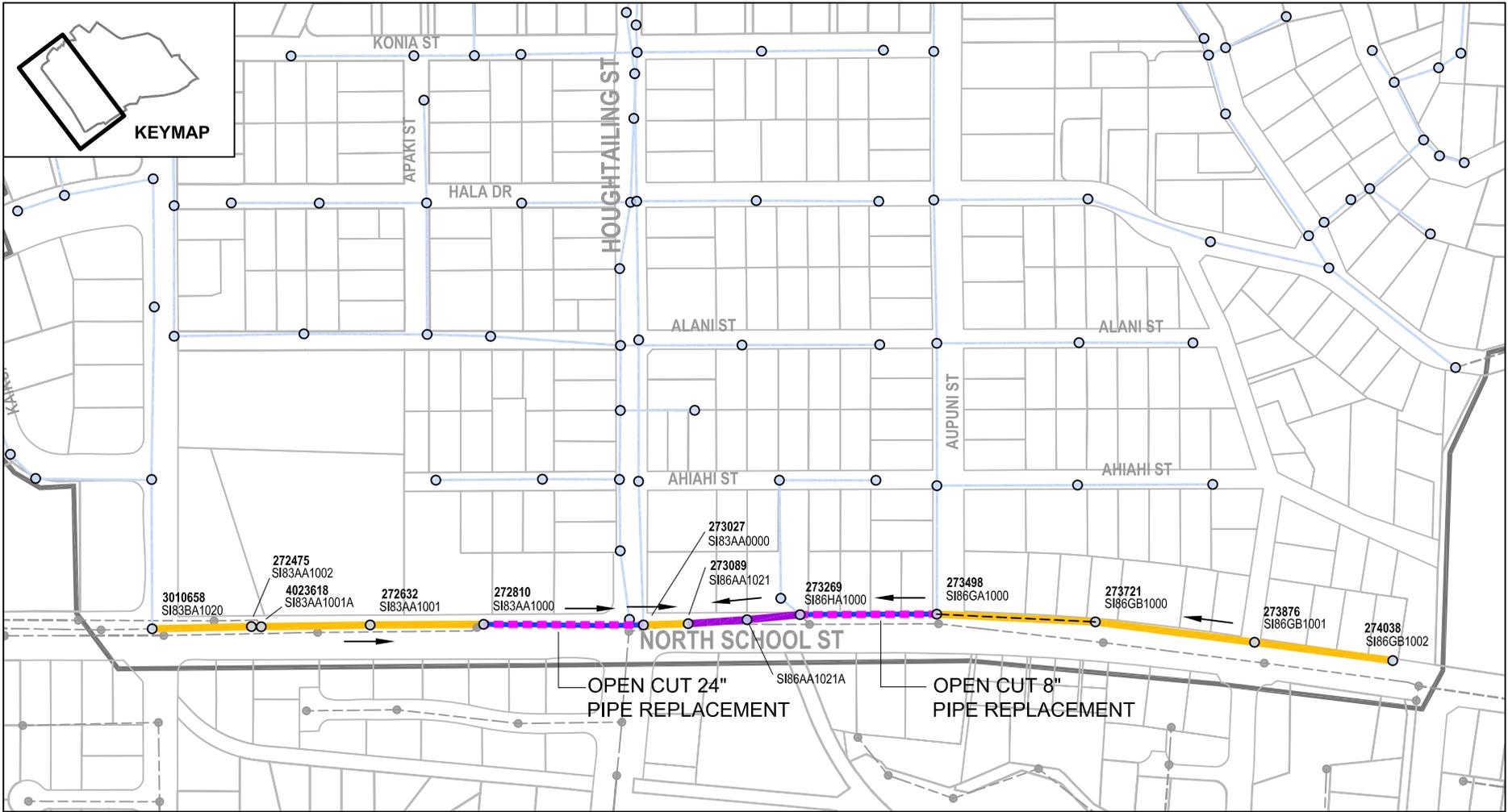
Legend

Project Area Boundary	SMH Within Project	SMH REHABILITATION
Existing Sewers Not Within Project	Existing SMH Not Within Project	SPOT REPAIRS
Existing Project Sewers Within Basin		
Existing Project Sewers Not Within Basin		
Flow Direction	SMH SID Number	SMH ISAP Number
	CIPP REHABILITATION	CIPP WITH PRE-LINER
	OPEN TRENCH PIPE REPLACEMENT	SEWERS TO BE ADDRESSED IN SYSTEM IMPROVEMENT

PROPOSED SEWER IMPROVEMENTS FOR AUPUNI BASIN
 Houghtailing Street Area Sewer Rehabilitation

Figure 9

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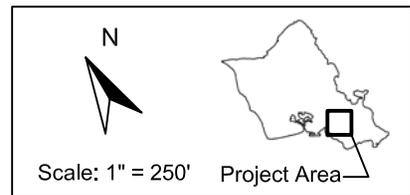


LEGEND:			
	Project Area Boundary		CIPP REHABILITATION
	Existing Sewers Not Within Project		CIPP WITH PRE-LINER
	Existing Project Sewers Within Basin		OPEN TRENCH PIPE REPLACEMENT
	Existing Project Sewers Not Within Basin		SEWERS TO BE ADDRESSED IN SYSTEM IMPROVEMENT
	Flow Direction		SMH REHABILITATION
	Existing SMH Within Project		SPOT REPAIRS
	Existing SMH Not Within Project		ABANDON AND PLUG (SEE AHIAHI BASIN IMPROVEMENTS)
	SMH SID Number		
	SMH ISAP Number		

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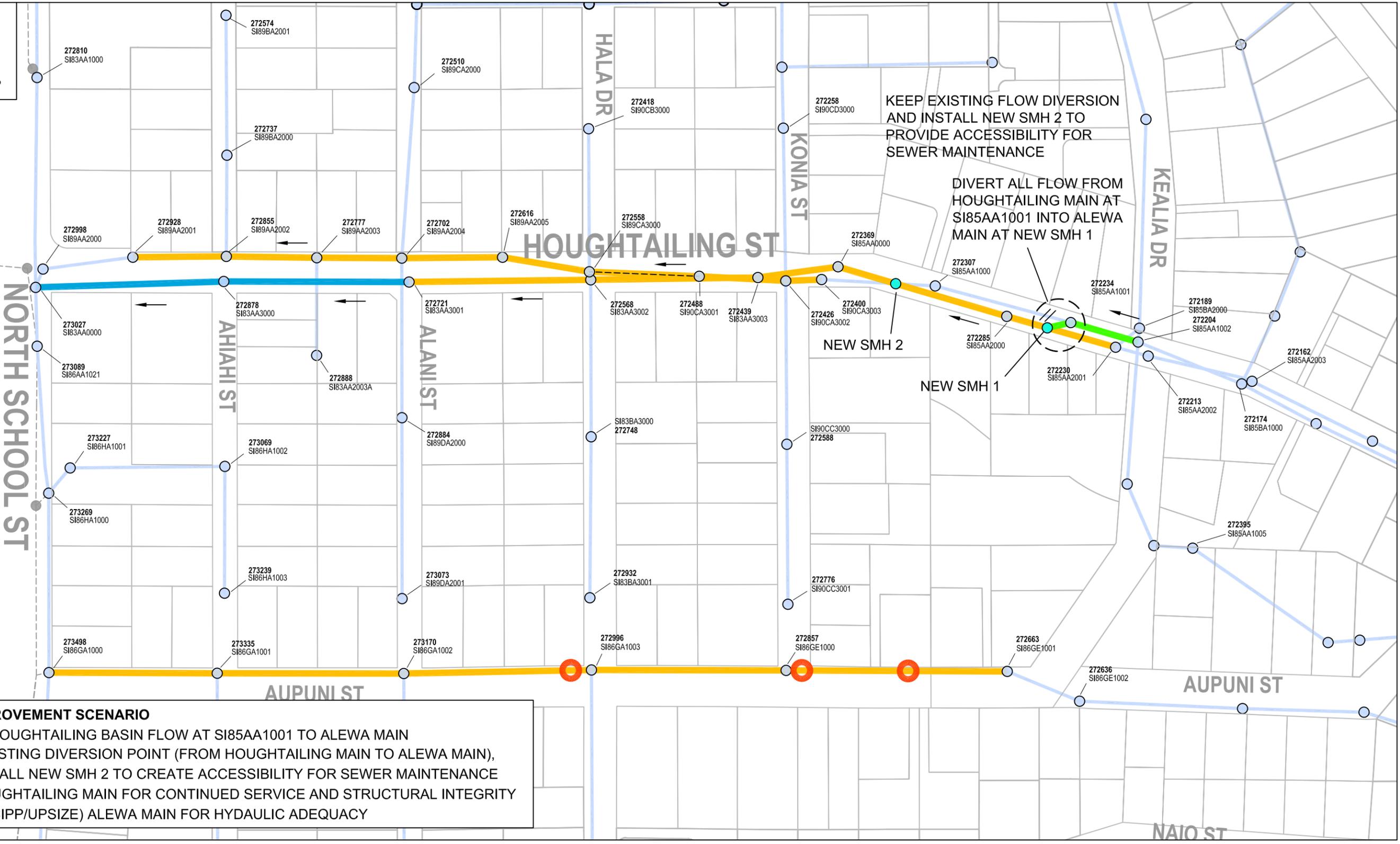
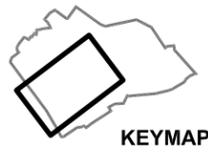
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**PROPOSED SEWER IMPROVEMENTS
 FOR NORTH SCHOOL STREET SEWER MAIN**
 Houghtailing Street Area Sewer Rehabilitation

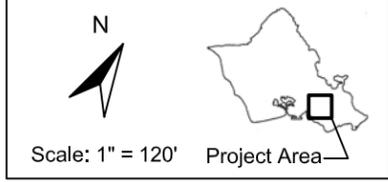
Figure 10

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- SYSTEM IMPROVEMENT SCENARIO**
1. DIVERT HOUGHTAILING BASIN FLOW AT S185AA1001 TO ALEWA MAIN
 2. KEEP EXISTING DIVERSION POINT (FROM HOUGHTAILING MAIN TO ALEWA MAIN), AND INSTALL NEW SMH 2 TO CREATE ACCESSIBILITY FOR SEWER MAINTENANCE
 3. CIPP HOUGHTAILING MAIN FOR CONTINUED SERVICE AND STRUCTURAL INTEGRITY
 4. REHAB (CIPP/UPSIZING) ALEWA MAIN FOR HYDAULIC ADEQUACY

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Legend

	Project Boundary		CIPP EXISTING SEWER		INSTALL NEW SMH
	Existing Project Sewers		INSTALL NEW 18" SEWER		SPOT REPAIRS
	Existing SMH Within Project		INSTALL NEW 12" SEWER		
	Existing SMH Not Within Project		PRE-LINE AND CIPP EXISTING SEWER		
	SMH SID Number				
	SMH ISAP Number				
	Flow Direction				

PROPOSED SYSTEM IMPROVEMENT SCENARIO
 Houghtailing Street Area Sewer Rehabilitation
Figure 11

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Advantages of open cut trenching, as applicable to the project area, are as follows:

- Conventional and locally available.
- Replaces the existing pipe, allowing for correction of slope and sag conditions.
- Manhole construction and lateral connections can be easily installed in open cut trenches.
- Removal of poor or unstable soils.

Disadvantages of open cut trenching, as applicable to the project area, include the following:

- Potential impacts on the environment, area residents, and traffic. In some instances, the sewer is located within existing easements across private properties. Right-of-entry will need to be gained by the City for work in these areas.
- Higher installation costs when compared to options that do not require excavation.
- Relatively slow installation process, thereby increasing the duration of temporary sewer by-pass requirements.
- May require utility relocation or temporary support.
- Noise and fugitive dust.

2.6.2. Manhole Rehabilitation/Replacement Methods

Epoxy Coatings. Epoxy coatings may be applied to the interior walls of an existing manhole using spray applications or hand trowels. The epoxy coating may be sprayed on using a low-pressure centrifugal robotic applicator or with a pump hose. The epoxy coating may also be applied manually using a hand trowel, which typically provides a more evenly distributed layer of material. As such, the City prefers epoxy coatings to be applied to the interior walls of an existing manhole using hand trowels.

As with any coating material, proper surface preparation is very critical to ensure maximum and proper adhesion to the underlying surface. The interior manhole walls must be cleaned of any debris, contaminants, detergents, and previous coatings prior to application. Cleaning may be conducted using high-pressure water jets, manual cleaning tools, or chemical cleaners.

Epoxy coatings are typically more resistant to corrosion and sulfides than cementitious coatings. Thus, they have a longer duration life and result in less-frequent maintenance.

Cover/frame Replacement. The cover and frame of an existing manhole may be replaced. The following identified conditions would result in the replacement of an existing manhole cover or frame: cracked or corroded cover, cracked or corroded frame, poor lid to frame seal, deteriorated rungs.

New Pre-cast Manholes. New pre-cast manholes are installed via the open cut trench construction method. In general, the installation involves excavating a pit, installing adequate shoring to protect the sidewalls of the pit or sloping its sides, laying the new manhole within the excavation, and backfilling the hole. During excavation, subsurface materials are incrementally removed and internal bracing is installed between the walls to support the excavation. Once the desired depth is reached, the new manhole is laid followed by backfilling and restoration of the ground surface.

2.6.3. System Improvement Scenario

The proposed system improvement scenario successfully achieves the following goals:

- Goal 1. Address surcharge conditions along the Houghtailing Main by diverting flows into the Alewa Main or the Aupuni Main;
- Goal 2. Correct structural and hydraulic deficiencies within the lower sections of the Houghtailing, Alewa, and Aupuni Mains to meet future flow conditions and accommodate sewer cleaning and service activities; and
- Goal 3. Increase system flexibility by providing connections for temporary relief in the event that a downstream area requires maintenance or is temporarily inoperable. This goal also considers the system's ability to relieve the main lines that receive a majority of the flow by spreading the flow into the surrounding main lines.

The proposed system improvement scenario diverts flows from areas of the Houghtailing Basin upstream of manhole SID 272234 (ISAP SI85AA1001) to the Alewa Main, uses the existing flow diversion between manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003), and rehabilitates the Aupuni Main. The system improvement scenario includes the following five actions:

1. Divert Incoming Houghtailing Basin Flow into Alewa Main at Manhole SID 272234 (ISAP SI85AA1001): Flows from upstream areas of the Houghtailing Basin will be diverted at sewer manhole SID 272234 (ISAP

SI85AA1001) by constructing a new 12-inch sewer segment from manhole SID 272234 (ISAP SI85AA1001) to a new manhole installed on the 12-inch Alewa Main between manhole SID 272230 (ISAP SI85AA2001) and manhole SID 272285 (ISAP SI85AA2000).

The segment on the Houghtailing Main from manhole SID 272204 (ISAP SI85AA1002) to manhole SID 272234 (ISAP SI85AA1001) will need to be upsized to a 12-inch line to accommodate flow volumes.

2. Install New Manhole at Existing Diversion: Flow is diverted between sewer manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003) on the Houghtailing Main and between sewer manhole SID 272285 (ISAP SI85AA2000) and manhole SID 272369 (ISAP SI85AA0000) on the Alewa Main. A new manhole will be installed at the diversion point to provide accessibility for sewer maintenance.
3. CIPP Houghtailing Main for Continued Lateral Service for Downstream Users: The 6-inch sewer segments downstream of manhole SID 272400 (ISAP SI90CA3003) to manhole SID 272928 (ISAP SI89AA2001) will be rehabilitated with the installation of CIPP to address structural conditions and provide continued service for laterals and collector lines that flow into these segments. Due to severe pipe deficiencies, the segment between manhole SID 272488 (ISAP SI90CA3001) and manhole SID 272558 (ISAP SI89CA3000) will require a CIPP pre-liner to provide added structural integrity.
4. Rehabilitate (CIPP/Upsize) Alewa Main for Hydraulic Adequacy: Hydraulic conditions in the Alewa Main will be improved with CIPP in the 12-inch sewer segments downstream of manhole SID 272230 (ISAP SI85AA2001), continuing to manhole SID 272721 (ISAP SI83AA3001). The 12-inch segments from manhole SID 272721 (ISAP SI83AA3001) to manhole SID 273027 (ISAP SI83AA0000) will be upsized to an 18-inch line to accommodate the diverted flows from the Houghtailing Basin.
5. Rehabilitate (CIPP with Spot Repairs) Aupuni Main for Structural Integrity: The 6-inch Aupuni Main from manhole SID 272663 (ISAP SI86GE1001) to manhole SID 273498 (ISAP SI86GA1000) will be rehabilitated with CIPP, in conjunction with spot repairs at three locations to repair severe offset joints or broken pipe. This alternative considered upsizing the main from 6-inch to 8-inch in order to meet the City design standard, however, the hydraulic capacity (both existing and future flows) are met with this recommendation. Further, upsizing the main would require alternative construction methods such as open cut trench excavation or pipe bursting,

which are considerably more expensive and have a greater number of associated potential construction impacts when compared to the rehabilitation of sewer lines with CIPP lining.

As shown on Figures 5 through 11, although most of the sewer lines and manholes to be replaced, rehabilitated, or newly constructed are located within roadways, some sewer lines and manholes are located across private property. As such, entry and construction activity on private property is expected. Right-of-entry will need to be gained by the City for work in these areas. The contractor will be responsible for coordinating access with property owners.

As previously stated in Section 2.4, Land Ownership, there are a few instances within the project area in which the City has not been granted a sewer easement located across private property. Additionally, it was discovered that there are some privately owned roadways within the project area. The City is currently in the process of acquiring such easements, and will negotiate the acquisition of these easements with the necessary landowners. Construction easements would generally not be required for the construction of temporary sewer flow control (both above and below ground) and open cut trench excavation repairs because the City has been granted the majority of all necessary streets and sewer easements. If for some reason temporary construction easements are necessary, they will be obtained prior to construction activities during the proposed project's design phase.

The proposed project includes the following design and construction considerations:

- In order to minimize disruptions to existing residences the majority of construction work will be performed during daytime hours (as opposed to night work). Although the non-invasive construction method of CIPP lining may require the use of generators during nighttime hours, the operating of such generators at night will be minimized to the extent feasible.
- Open trenches will be covered with steel plates during hours when construction operations are not occurring.
- Traffic and pedestrian detours will be provided.
- Adequate trench support and use of ground-water inflow control methods, if ground-water levels are encountered, will be employed during excavation to mitigate soil consolidation and compression of soft deposits, and to minimize dewatering efforts.
- All necessary permits and approvals will be acquired prior to the construction of the proposed sewer improvements.

The completion of the proposed project will result in the correction of existing structural problems, improvement of hydraulic performance conditions, and address current maintenance issues. In areas where a sewer line has been identified for

rehabilitation or replacement, the flow capacity of the sewer line will be improved to accommodate existing and future flow levels. The proposed project will successfully improve sewer maintainability and eliminate surcharge conditions, based on hydraulic modeling.

2.7. Project Schedule and Construction Cost

It is anticipated that the design of the proposed project can begin October 2006, followed by construction activities to begin as early as January 2008. The estimated construction cost is \$6,899,000, and the project would use City funds.

2.8. Additional Considerations

The Americans with Disabilities Act (ADA) of 1990 requires existing concrete curb ramps to conform and upgrade to federal design standards. Curb ramps and access routes affected by the proposed construction activities will be updated as required in accordance with ADA guidelines. Further investigation of pedestrian and traffic detouring, including bus stop access, should be evaluated in the design phase of this project to ensure ADA compliance. Excavation along North School Street and Hala Street may impact existing crosswalks and the existing curb ramps will need to be inspected and evaluated during the design phase. Likewise, bus stop areas that may be affected by the project should be evaluated and, if subject to construction impacts, restored to ADA compliant condition.

Several utilities exist throughout the project area and it is possible that utility relocations will be required. Relocation of utilities may impact the actual construction cost and should be investigated further and verified during the design phase of this project.

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3. DESCRIPTION OF THE EXISTING ENVIRONMENT, PROJECT IMPACTS, AND MITIGATION MEASURES

3.1. Climate

The climate at the project area is characterized by relatively mild and constant temperatures throughout the year, persistent northeasterly trade winds, and infrequent severe rainstorms. The northeasterly trade wind is the prevailing wind throughout the year for the island of Oahu, although its average frequency varies from more than 90 percent during the summer to only about 50 percent in January. The mean annual wind velocity varies between approximately 9 and 11 miles per hour.

Daily maximum temperatures range from the low 80s in the winter to the upper 80s in the summer. Daily minimum temperatures vary from the mid 60s in the winter to the low 70s in the summer.

Rainfall in the vicinity of the project area is relatively moderate, with a median annual rainfall of approximately 45 to 55 inches. Generally, approximately 50 percent of the total annual rainfall occurs during the three wettest months of December, January, and February.

Impacts and Mitigation Measures

No impacts on climatic conditions are anticipated as a result of the construction and operation of the proposed sewer rehabilitation project. Therefore, no mitigation measures associated with climatic conditions are necessary.

3.2. Geology

According to the *Geology of the State of Hawaii* (1985), the project area is situated within the large expanse of mountain range that spans the eastern part of Oahu, geologically referred to as the Koolau Range. The Koolau Range is approximately 37 miles long and consists of thin, narrow, basaltic lava flows piled on top of each other. The range has minor amounts of volcanic ash and numerous dikes throughout, and is deeply eroded by streams.

The Koolau volcanic series comprises the majority of lava flows, intrusive rocks, pyroclastic rocks, breccia, and intercalated soils making up the Koolau Range. This series overlies the Kailua volcanic series within the Koolau Range. Both series emerged during the Tertiary period of the Cenozoic era, with the lavas erupting from

two main rift zones in the Pliocene time. During a period of ceased volcanic activity following the formation of the Koolau dome, stream erosion carved great valleys that were subsequently filled with sediments as the sea level rose. Since the time that the great valleys were carved and filled with alluvium, about 30 vents have erupted on Oahu. These eruptions are geologically referred to as the Honolulu volcanic series.

Overall, the project area lies near the base of a remnant slope of the Koolau volcanic series flanked by stream valleys and appears to have been carved by stream erosion, leaving alluvial deposits. Secondary eruptions of the Honolulu volcanic series look to have occurred in the vicinity of the project area.

Impacts and Mitigation Measures

The vast majority of the proposed sewer system improvements within the project area will involve rehabilitation through the use of CIPP lining for 30,366 lf of sewer line, and epoxy coatings and cover/frame replacement for 10 existing manholes. Given that these construction methods do not require excavation activities, no significant impacts to the subsurface are anticipated.

The conventional construction method of open cut trenching will be used within the project area for those proposed sewer system improvements involving spot repairs of existing sewer lines at 52 locations, 2,154 lf of sewer line replacement, and the installation of 270 lf of new sewer line and 4 new manholes. Excavation and backfill activities are not expected to have any significant impact on the subsurface of the project area. Generally, excavation activities will occur at locations that were previously trenched and backfilled for the original sewer pipe installation.

3.3. Topography

The topography throughout the project area ranges in elevation from approximately 45 feet above mean sea level (MSL) along the southwestern boundary at North School Street to approximately 430 feet above MSL at the northeastern boundary near Ilima Drive. The project area varies from gently sloping near its lower end to relatively steep along its north and northeastern periphery.

Additionally, topographic surveys are currently being conducted at specific locations within the project area in support of the design phase for the proposed project. This effort began in July 2006 and is anticipated to be complete by November 2006. The topographic surveys are being performed at all locations targeted for improvements (i.e., rehabilitation, replacement, or new construction).

Impacts and Mitigation Measures

The vast majority of the proposed sewer system improvements within the project area will involve rehabilitation through the use of CIPP lining for sewer lines, and epoxy coatings and cover/frame replacement for existing manholes. These construction methods do not require trenching. These construction methods minimize surface impacts while providing the necessary sewer improvements.

Open cut trench construction methods will be used within the project area for those proposed sewer system improvements involving spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes. The areas affected by open cut trenching will be finished and restored to match the existing grade. HRS §103D-407 requires the use of recycled glass in paving materials when available at a price no greater than that of the equivalent aggregate material and the contractor shall comply with the provisions of §103D-407 in all paving activities.

No significant adverse impacts to the topography of the project area are anticipated as a result of the completion of the project.

3.4. Soils

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (August 1972) publication's General Soils Map of Oahu, the project area is of the Rock land-Stony steep land association, which consists of stony and rocky, steep to precipitous slopes that occur within elevation ranges from sea level to 2,800 feet. Rock land makes up about 60 percent of the association, Stony steep comprises 15 percent, and Rock outcrop, Stony land, and pockets of Kawaihapai, Lualualei, and Pulehu soils make up the remaining 25 percent.

Rock land is very steep, occurring in gulches and on mountainsides, and consists of 25 to 90 percent rock outcrop with very shallow soil material. Stony steep land also has very steep slopes and consists of boulder and stone masses deposited by water or gravity in valley bottoms or on side slopes of drainage ways.

The predominant soil types within the project area are Kaena clay, 2 to 6 percent slopes; (KaB) and Kaena very stony clay, 10 to 35 percent slopes (KanE) (Figure 12). Both of these soil types are similar in profile to Kaena stony clay, 6 to 12 percent slopes, however, KaB has very few stones in the surface layer, while KanE has many stones on the surface. For the KaB soil type, runoff is slow and the erosion hazard is slight. KanE has medium to rapid runoff, moderate to severe

erosion hazard, and workability is characterized as “difficult because the soil is stony, steep, and very sticky and very plastic.”

Additionally, a geotechnical survey will be conducted within the project area in support of the design phase. The survey will consist of geotechnical investigations performed at those specific locations targeted for open cut trench construction methods. Soil drilling, sampling, and analysis will be conducted during the geotechnical investigations, and the geotechnical information obtained will be required to properly design the proposed open cut trench construction methods. The geotechnical survey is expected to be complete by January 2007.

Impacts and Mitigation Measures

No significant adverse impacts to soils within the project area are anticipated.

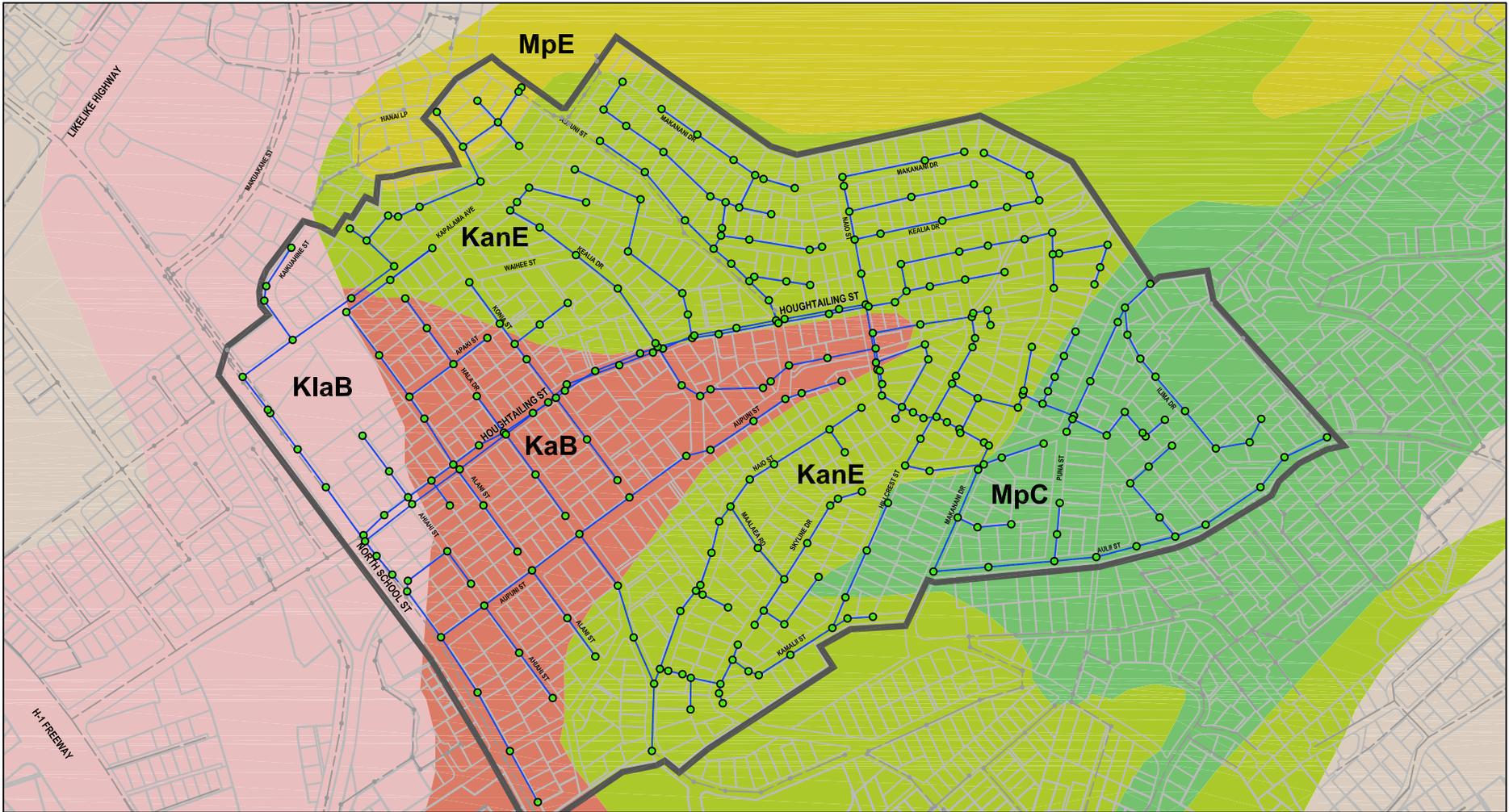
The majority of the proposed improvements utilize construction methods that do not require excavation activities. Therefore, no significant impacts to the subsurface are anticipated.

The proposed sewer system improvements involve the use of open cut trench construction methods within the project area for spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes. Adequate trench support and use of ground-water inflow control methods, if ground-water levels are encountered (refer to Section 3.5, Ground Water below for more details), will be employed during excavation to mitigate soil consolidation and compression of soft deposits, and to minimize dewatering efforts. Excavation and backfill activities are not expected to have any significant impact on the subsurface of the project area, and will include appropriate erosion control measures.

As previously stated, geotechnical investigations will be performed at those specific locations targeted for open cut trench construction methods in support of the design phase for the proposed project. The geotechnical information obtained will be utilized to ensure the proper design of the proposed open cut trench construction methods.

3.5. Ground Water

According to the State Department of Land and Natural Resources (DLNR) aquifer classification system, the aquifer underlying the project area is the Kalihi aquifer system of the Honolulu aquifer sector.



LEGEND:	Project Area Boundary	Existing SMH Within Project	KaB Kaena clay, 2 to 6% slopes	MpC Manana silty clay, 8 to 15% slopes
	Existing Project Sewers	Existing SMH Not Within Project	KanE Kaena very stony clay, 10 to 35% slopes	MpE Manana silty clay, 25 to 40% slopes
	Existing Sewers Not Within Project		KlaB Kawaihapai stony clay loam, 2 to 6% slopes	

City & County of Honolulu
 Department of Design & Construction
 Wastewater Division



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Scale: 1" = 600' Project Area

SOIL TYPES
 Houghtailing Street Area Sewer Rehabilitation

Figure 12

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Impacts and Mitigation Measures

The proposed project is not anticipated to have any impact on ground-water resources.

The majority of the proposed sewer system improvements within the project area will utilize construction methods that do not require excavation or trenching activities. Therefore, no significant impacts to the subsurface are anticipated.

Open cut trench construction methods will be used within the project area for spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes. The water table in the project area likely occurs below the bottom elevation of the proposed open cut trenching activities. Therefore, dewatering activities are not anticipated to be necessary during the construction and installation of sewer lines and manholes. However, the aforementioned geotechnical investigations to be performed at those specific locations targeted for open cut trench construction methods in support of the proposed project's design phase will determine whether ground-water is likely to be encountered within the project area. If ground-water levels are encountered, dewatering activities may be minimized through the use of appropriate ground-water inflow control methods. Should dewatering activities be necessary for the proposed project, a National Pollutant Discharge Elimination System (NPDES) General or Individual Permit for discharges of construction dewatering effluent will be required. A Notice of Intent to be covered by NPDES General Permit must be submitted to the State DOH, Clean Water Branch at least 30 days before the commencement of construction activities, while an application for a NPDES Individual Permit must be submitted at least 180 days before the commencement of construction activities.

3.6. Surface Waters

The Nuhelewai Stream traverses through the project area. The Nuhelewai Stream is either intermittent or interrupted perennial with flows conveyed apparently only during rainfall events. This stream is not listed as a perennial stream according to the *Hawaii Stream Assessment* (December 1990).

According to the Final EA for the Nuhelewai Stream Improvements project (Eugene P. Dashiell, AICP, Environmental Planning Services, March 2005), the Nuhelewai Stream appears to commence above the campus of Kamehameha Schools Bishop Estates Kapalama Campus, located just north and mauka of the project area. From

the Naio Street bridge to upstream of the houses on Makanani Street, the stream is confined to a concrete and cement rubble masonry (CRM) lined channel. Just upstream of Aupuni Street there is a debris basin contained by a low, concrete dam. The dam was built in the mid-1970s as part of the City's Nuhelewai Flood Control Project and serves as a debris control structure to prevent debris and boulders from being transported downstream. The stream channel downstream of the dam is confined to a concrete lined channel and includes a small pilot channel from Aupuni Street to just downstream of Kealia Street, where it eventually flows into an underground storm drain. The Nuhelewai Stream is contained within this underground culvert through much of its lower course, before converting to a concrete and CRM lined channel just downstream of the project area boundary at North School Street and discharging into Kapalama Stream near Damien High School.

The Nuhelewai Stream is tributary to the Kapalama Stream, a perennial stream, which eventually drains to Honolulu Harbor. This stream commences in the Koolau Mountain Range and follows the basic mauka-to-makai flow pattern. The Kapalama Stream travels in close proximity to the northwestern and southwestern borders of the project area, and runs along a small portion of the project area boundary near the Kapalama Avenue and North School Street intersection.

There are no wetlands located within the project area. A portion of the Kapalama Stream, just downstream of the project area and the Nuhelewai Stream-Kapalama Stream confluence, is identified as wetlands per National Wetlands Inventory Maps.

Impacts and Mitigation Measures

No significant adverse impacts to surface water resources within or downstream of the project area are anticipated to result from implementation of the proposed project. Refer to Section 3.10, Surface Water Quality below for details regarding potential impacts to surface water quality within or downstream of the project area.

The Nuhelewai Stream eventually flows into an underground storm drain and is a component of the storm drain system within the project area. Please refer to Section 3.14.3, Drainage System below for details regarding potential impacts that may possibly affect the storm drain system.

The rehabilitation of sewer lines with CIPP lining and existing manholes with epoxy coatings and cover/frame replacement will be used at various locations within the project area where the existing sewer lines and manholes are located adjacent to and traverse the existing Nuhelewai

Stream. Overall, the majority of the proposed sewer system improvements within the project area will utilize these construction methods, which do not require excavation or trenching activities and minimize surface impacts. These construction activities occur within the existing sewer line pipes and manholes and will not involve activities or discharges within the bed or banks of the stream. Additionally, while CIPP lining will be used to rehabilitate an existing sewer line located near the Kapalama Stream at the Kapalama Avenue/North School Street intersection, the CIPP liner will be fed into existing manholes from the surface in order to rehabilitate the sewer segments from manhole to manhole and will not involve construction activities within the bed or banks of the stream.

Open cut trench construction methods will be used within the project area for spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes. These open cut trench construction activities will occur within the existing private properties and roadways adjacent to the stream, as well as within those portions of the roadways that bridge across the stream. These construction activities are not anticipated to occur within or result in the discharge of materials within the bed or banks of Nuhelewai Stream. The aforementioned topographic surveys currently being performed at locations targeted for open cut trench construction methods in support of the proposed project's design phase will determine whether it is necessary for construction activities to occur within the bed or bank of the existing surface water resources within the project area. If such construction activities are determined necessary in order to complete the proposed project, a U.S. Army Corps of Engineers Clean Water Act Section 404 permit will be acquired. Potential impacts would be mitigated for by complying with the conditions of the project's permit, such as appropriately restoring the stream bed and bank.

There are no long-term surface water impacts associated with the completion and operation of the proposed sewer improvements. No permanent structures will be placed within the Nuhelewai Stream or Kapalama Stream as a result of the proposed project. No alteration of the bed or banks of Nuhelewai Stream or Kapalama Stream are anticipated, and the project will not result in changes to the course of the existing streams

3.7. Flood and Tsunami Hazard

According the Federal Emergency Management Agency Flood Insurance Rate Map, Community Panel Number 150001 0354 F for the City and County of Honolulu (map

revised September 30, 2004), the project area is identified as within Zone X. Zone X designates areas determined to be located outside the 500-year flood plain (Figure 13).

According to the tsunami evacuation zone maps produced by the Joint Institute for Marine and Atmospheric Research and the State Civil Defense System, the project area is not within a tsunami evacuation zone.

Impacts and Mitigation Measures

It is unlikely that the construction and operation of the proposed sewer improvements will result in the flooding of the project area or the surrounding area. After completion of construction activities, where the proposed improvements would require open cut trenching, the ground surface will be finished and paved to align with existing surface elevations.

3.8. Floral and Faunal Resources

The project area is a highly altered urban environment. Vegetation within the project area is influenced by infilling of the area, and the high degree of development and human activity. Consequently, most of the vegetation in the project area consists of landscaping, and floral species found in the project area are primarily non-native species. Similarly, most native faunal species that may have inhabited the project area have been displaced, and fauna and avifauna species presently found are predominantly introduced species and those that have adapted to the urban environment. Mongoose, rats, mice, and cats are common. Avifauna species presumed to inhabit the area are those common to urban environments and include the common mynah, house finch, barred dove, house sparrow, Brazilian cardinal, red-vented bulbul, spotted dove, and pigeon.

No Federal or State listed or candidate threatened or endangered species are known to occur within the project area.

Impacts and Mitigation Measures

No significant adverse impacts to flora and fauna within the project area or in the project vicinity are anticipated to result from implementation of the proposed project. There are no known threatened or endangered floral or faunal species inhabiting the highly altered urban environment of the project area.

The majority of the proposed sewer system improvements within the project area will involve the rehabilitation of sewer lines with CIPP lining



LEGEND:

- Project Area Boundary
- Existing Project Sewers
- Existing Sewers Not Within Project
- Existing SMH Within Project
- Existing SMH Not Within Project
- ZONE X: Outside the 500-yr. floodplain

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Scale: 1" = 600'



Project Area

FLOOD ZONE DESIGNATION MAP

Houghtailing Street Area Sewer Rehabilitation

Figure 13

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and existing manholes through the use of epoxy coatings and cover/frame replacement. These construction methods do not require trenching and minimize surface impacts while providing the necessary sewer improvements. Additionally, while the proposed project will involve the use of open cut trenching within the project area for construction of some of the proposed sewer system improvements, these construction activities will be performed primarily within existing roadways. Any existing vegetation or landscaped areas disturbed within the project area during construction activities will be restored and revegetated, to the extent practicable.

3.9. Air Quality

Air quality in the project area is primarily affected by vehicular emissions. North School Street is the major roadway in the project area that carries heavy volumes of traffic, including public transit system buses. There is also considerable traffic on Houghtailing Street and Kapalama Avenue.

The State DOH Clean Air Branch monitors air quality at selected locations throughout the State. Currently, there are ten air quality monitoring stations on Oahu that measure various types of pollutants. The Liliha monitoring station, which is located at Kauluwela Elementary School approximately one mile southeast of the project area, and the Sand Island monitoring station, which is located at the University of Hawaii's Anuenue Fisheries in the Sand Island Industrial Park and is approximately two miles south of the project area, are located nearest to the project site. The Liliha monitoring station is a National Air Monitoring Station established in January 1984 and currently only monitors for the volume of PM10 particulate matter. The Sand Island monitoring station was established in 1980 and is an ozone National Air Monitoring Station, as well as a State and Local Air Monitoring Station that monitors for the volume of PM2.5 particulate matter.

Generally, air quality in the vicinity of the project area is considered to be good and meets National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards (SAAQS). According to the *2003 Annual Summary Hawaii Air Quality Data* and the *2004 Annual Summary Hawaii Air Quality Data*, air quality monitoring data compiled by the State DOH indicates that the established air quality standards for all monitored parameters are consistently met on the island of Oahu. Data from both the Liliha station and the Sand Island station indicate that air quality for the monitored parameters is within the NAAQS and SAAQS.

Air quality in the project area and vicinity is positively influenced by northeast tradewinds that predominate throughout the year and blow pollutants from inland areas out to sea. Problems with poor air quality are more likely to occur when

tradewinds diminish or give way to southerly winds. Localized problems of poor air quality may occur under adverse Kona wind conditions during peak traffic hours along heavily used roadways.

Impacts and Mitigation Measures

The proposed project is anticipated to have short-term construction-related impacts on air quality, including the generation of dust and emissions from construction vehicles and equipment. The contractor will be responsible for complying with State DOH Administrative Rules, Title 11, Chapter 60, "Air Pollution Control."

During the construction of the proposed sewer system improvements, two potential types of air pollution emissions will likely occur: 1) Fugitive dust from soil excavation and the movement of construction vehicles; and 2) Carbon monoxide and nitrogen oxide emissions from on-site construction equipment. Given that the vast majority of the proposed sewer system improvements within the project area will involve rehabilitation construction methods that do not involve excavation or trenching activities, potential impacts from fugitive dust will be reduced.

Construction activities must comply with the provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust. Compliance with State regulations will require adequate measures to control fugitive dust by methods such as, but not limited to:

- Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- Providing an adequate water source at the project site prior to initiation of construction activities;
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Controlling of dust from shoulders and access roads;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities;
- Controlling dust from debris being hauled away from the project site; and
- Constructing dust barriers/fences.

Exhaust emissions from construction vehicles are anticipated to have negligible impacts on air quality in the project vicinity, as emissions would be relatively small and readily dissipated.

The State DOH recommends that a dust control management plan be developed to identify and address all activities that have a potential to generate fugitive dust, and the contractor will be responsible for the implementation of adequate dust control measures during all phases of development and construction activities.

The proposed project is not anticipated to generate a significant amount of odors during construction since the contractor will be required to establish temporary sewer bypass lines to allow continued sewer service during the installation of the new sewer system components (refer to Section 3.14.4, Wastewater System below for more details). The temporary bypass lines will be comprised of enclosed pumping/piping systems. Odors generated during construction activities will be very short-term and minimal. Odors generated during construction should be lower than odor levels that are generated by putrefaction of grease and organic matter that currently accumulates within the project area sewer system due to clogged lines and sluggish flows.

Overall, air quality impacts during construction will be temporary in nature and will cease upon completion of the construction. Additionally, the project will have long-term beneficial impacts by decreasing the frequency and level of odors that are generated as a result of clogged lines and sluggish flows within the project area sewer system. No significant adverse impacts are anticipated upon completion and during operation of the proposed project.

3.10. Surface Water Quality

As previously mentioned, the Nuhelewai Stream traverses through the project area and is tributary to the Kapalama Stream, a perennial stream, which eventually drains to Honolulu Harbor. Nuhelewai Stream and Kapalama Stream are both classified as Class 2 inland streams by the State DOH for purposes of applying the standards set forth in Hawaii Administrative Rules, Chapter 11-54 and for the selection or definition of appropriate water quality parameters and uses to be protected in the stream waters. At the location where the Kapalama Stream drains into the Honolulu Harbor, the harbor is classified as Class A marine waters by the State DOH.

The Kapalama Stream (including the Nuhelewai Stream tributary) and Honolulu Harbor are currently included on the State's 303(d) list of impaired waters, according

to the *Final 2004 List of Impaired Waters in Hawaii Prepared Under Clean Water Act § 303(d)* (June 2004). Water quality in the Kapalama Stream is impaired by excessive nutrients, turbidity, and trash. At the location where the Kapalama Stream drains into the Honolulu Harbor (i.e., Nearshore waters to 30' from 1 mile northwest of Honolulu Harbor/Sand Island channel to Waikiki Beach), the waters are similarly listed for high levels of nutrients, pathogens, metals, turbidity, and suspended solids. The impaired status of these waters requires the State DOH to establish Total Maximum Daily Loads (TMDLs) suggesting the quantity by which the existing pollutant loads should be reduced in order to attain water quality standards. Waterbodies have been prioritized as High, Medium, or Low for TMDL development based on several factors, such as the number of pollutants listed and degree that levels of pollutants exceed the standard. The Kapalama Stream was given a Medium priority for TMDL development, whereas the Honolulu Harbor was given a Low priority.

Impacts and Mitigation Measures

No significant adverse impacts to surface water quality within or downstream of the project area are anticipated to result from implementation of the proposed project. The proposed project will not increase the volume of peak stormwater runoff or contribution of contaminants to stormwater runoff. The project will restore pavements and appropriately revegetate areas that are disturbed during construction. Additionally, as stated in Section 3.6, Surface Waters above, it is not anticipated that the proposed project will involve construction activities or discharges within the bed or banks of the existing streams.

The vast majority of the proposed sewer system improvements within the project area will utilize construction methods that do not require excavation or trenching activities. The implementation of such construction methods minimizes the potential for sediments to enter surface waters through stormwater runoff. Additionally, while the proposed project will involve the use of open cut trenching within the project area for construction of some of the proposed sewer system improvements, appropriate erosion control measures and Best Management Practices (BMPs) will be implemented to prevent pollutants from entering the surface waters during construction. Measures, such as installing sediment barriers at storm drain inlets and repaving and revegetating areas as soon as practicable, will be applied as appropriate during construction of the proposed project. A NPDES General or Individual Permit for discharges composed entirely of storm water runoff associated with construction activities that result in the disturbance of one acre or more of total land area will be required for this project, and impacts

will also be mitigated by complying with the conditions of this permit. A Notice of Intent to be covered by NPDES General Permit must be submitted to the State DOH, Clean Water Branch at least 30 days before the commencement of construction activities. An application for a NPDES Individual Permit must be submitted at least 180 days before the commencement of construction activities.

There are no long-term surface water quality impacts associated with the completion and operation of the proposed sewer improvements. The project will not increase the amount of impervious surface area within the project area or induce additional runoff. Implementation of the project will likely benefit water quality in the Nuhelewai Stream and Kapalama Stream since the proposed improvements will remedy clogged sewer lines and inadequate hydraulic capacity, thus decreasing the likelihood of any sewage overflow into these streams.

3.11. Noise

Noise levels in the project area are primarily the result of vehicular traffic. In addition to heavy traffic on North School Street, there is also considerable traffic on Houghtailing Street and Kapalama Avenue. Existing business operations that occur within the project area, primarily adjacent to and in the area of North School Street, are also primary sources of ambient noise in the project area. Other typical sources of noise in the area include occasional aircraft overflights, barking dogs, birds, home improvement projects, and people engaged in routine activities.

Impacts and Mitigation Measures

Noise from construction activities will likely be unavoidable during the entire construction period. Ambient noise levels in the vicinity of construction areas will increase due to construction activities and the use of construction vehicles and equipment. The noise impacts from construction will be temporary in nature and will generally shift to different locations within the project area as each sewer line segment and manhole is completed.

Unavoidable short-term construction noise impacts will be mitigated to some degree by the contractor's compliance with the provisions of the State DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" noise regulations. These rules require a noise permit if the noise level from construction activity is expected to exceed the allowable levels stated in the Chapter 46 rules. It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-

attenuating equipment, and to maintain noise levels within regulatory limits.

Potential noise impacts will also be mitigated by performing the majority of construction work during daytime hours. Daytime work will ensure minimal impacts to existing residences, including reducing the inconvenience of construction noise impacts to residents during nighttime hours. The non-invasive construction method of rehabilitation through the use of CIPP lining for sewer lines may require the use of generators during nighttime hours; however, the operating of such generators at night will be minimized to the extent feasible. It is anticipated that such nighttime construction activities will exceed allowable levels. A noise variance will be obtained prior to commencement of construction activities, in accordance with the Chapter 46 rules.

In the long-term, no significant noise impacts are anticipated due to the completion and operation of the proposed sewer system improvements, as the typical noise levels induced by the existing uses within the project area are expected to continue.

3.12. Archaeological and Cultural Resources

In a letter dated April 10, 2006 (see Section 8.1, Pre-Assessment Consultation for more information, and Appendix B for a copy of the letter), the State DLNR, Historic Preservation Division (SHPD), noted that “there is relatively low probability of encountering historically-significant sites” because previous development and urbanization has resulted in the grubbing and grading of most of the land within the project area. Moreover, no historically-significant materials were found during subsurface testing activities previously conducted in the Kapalama Stream valley, located immediately north of the project area. However, there are cemeteries located within and adjacent to the project area which may contain historically-significant sites, including unmarked burials. A group of cemeteries (i.e., Kaahumanu, Maluhia, and Puea cemeteries) is located within the project area at the North School Street and Kapalama Avenue intersection, and the Puukamalii Cemetery is situated immediately adjacent to the southeast boundary of the project area. Figure 1 presents the locations of these cemeteries.

Any cultural activities that may have been historically associated with the Houghtailing Street Area were terminated by the urbanization of the area, which has left little habitat for any terrestrial flora and fauna that may be of cultural value.

Impacts and Mitigation Measures

No significant adverse impacts to archaeological or cultural resources are anticipated to result from implementation of the proposed project.

Due to the highly urbanized nature of the project area and given that, generally, excavation activities will occur at locations that were previously trenched and backfilled for the original sewer pipe installation, it is unlikely that any subsurface archaeological resources will be encountered within the project area. Additionally, the majority of the proposed sewer system improvements to occur within the project area, as well as at those locations immediately adjacent to and in the vicinity of the known cemeteries, will involve rehabilitation through the use of CIPP lining for sewer lines. The potential for uncovering archaeological resources is minimal as there are no excavation or trenching activities associated with this construction method and, therefore, no significant impacts to the subsurface are anticipated.

In the aforementioned letter from the SHPD dated April 10, 2006, the agency expressed their belief that “there is relatively low probability of encountering historically-significant sites” within the project area during construction of the proposed project. However, the proposed project will involve the use of open cut trenching within the project area for construction of some of the proposed sewer system improvements and it is not uncommon for unmarked burials to be located outside the boundaries of the known cemeteries. Therefore, the following measures will be implemented:

- 1) A qualified archaeological monitor shall be present during all ground-altering activities conducted in the vicinity of the Kaahumanu, Maluhia, Puea, and Puukamalii cemeteries in order to document any historic properties which may be encountered during the proposed undertaking and to provide mitigation measures as necessary. An acceptable archaeological monitoring plan will be submitted to the SHPD for review, prior to the commencement of any ground-altering activities. An archaeological monitoring plan must contain the following specifications: 1) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; 2) How the remains and deposits will be documented; 3) How the expected types of remains will be treated; 4) The archaeologist conducting the monitoring has the authority to halt the construction in the immediate area of the find in order to carry out the plan; 5) A coordination meeting between the archaeologist and construction crew is scheduled, so that

the construction team is aware of the plan; 6) What laboratory work will be done on remains that are collected; 7) A schedule of report preparation; 8) Details concerning the archiving of any collections that are made; and 9) An acceptable report documenting the findings of the monitoring activities shall be submitted to the SHPD for review following completion of the proposed undertaking.

- 2) The SHPD shall be notified via facsimile upon the onset and completion of the proposed undertaking.

Additionally, for all construction activities conducted in association with the proposed project, work will cease immediately in the vicinity of any historic remains encountered during construction activities and the find will be protected from further damage. The contractor shall immediately contact the SHPD to assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

No impacts to cultural resources are anticipated, as previous development and current uses within the project area preclude the presence of any resources that may be of cultural value.

3.13. Socio-Economic Characteristics

3.13.1. Existing Businesses and Surrounding Uses

As described in Section 2 and presented in Figure 4, the proposed project will affect portions of TMK Plats 1-6-11 to 1-6-20, 1-6-027, and 1-8-034 to 1-8-035 that comprise existing roadways and sections of private property with sewer lines traversing across. Most of the parcels located within the project area are privately owned, with the exception of existing City-owned roadways and easements held by the City across private property. The majority of the portions of the roadways that would be affected by the proposed project are under the jurisdiction of the City's DTS. Additionally, several sewer easements under the jurisdiction of the City are located throughout the project area, and are necessary as many sewer segments are located along the back perimeter of residential lots

The privately owned TMK parcels are currently occupied by residents and tenants with residential, commercial and institutional uses. Generally, the project area is characterized by single-family homes, with some commercial uses adjacent to and in the area of North School Street. The project area also encompasses institutional uses, such as the Grace Bible Church and Puea Cemetery.

Other uses that surround the project area include commercial, light industrial, and institutional uses. Area restaurants, grocers, retailers, gasoline stations, and other businesses are located primarily along North School Street. The Kamehameha Shopping Center is situated to the northwest of the project limits, and the Bishop Museum is also in the project vicinity. The Puukamalii Cemetery is located immediately adjacent to the southeast boundary of the project area. There are numerous schools located nearby, including Kapalama Elementary School, Lanakila Elementary School, the Kamehameha Schools Bishop Estate Kapalama Campus, Damien Memorial High School, and the Academy of the Pacific. The Kamehameha Schools Bishop Estate Kapalama Campus is located immediately north of the project area boundary.

During the exploration of construction method alternatives and alternative system improvement scenarios, the residents and tenants within the project area were consulted regarding the proposed project. The Limtiaco Consulting Group attended a Neighborhood Board No. 14, Liliha/Puunui/Alewa/Kamehameha Heights meeting held on September 13, 2004, and Appendix A provides a copy of the proposed project information flyer mailed to all residents and tenants within the project area shortly thereafter. Additionally, in order to consult with the community regarding the proposed project, The Limtiaco Consulting Group attended another Neighborhood Board No. 14, Liliha/Puunui/Alewa/Kamehameha Heights meeting held on March 13, 2006. The Limtiaco Consulting Group presented a description of the proposed project and the potential impacts that may be incurred as a result of construction activities. Further relevant details regarding this correspondence are presented in Section 8.1, Pre-Assessment Consultation. Additionally, prior to construction of the proposed project, an information flyer will be sent to those residences, businesses, or institutions directly exposed to potential impacts as a result of construction activities.

Impacts and Mitigation Measures

The proposed sewer system improvements and construction methods will minimize surface impacts while addressing maintenance issues and providing the necessary hydraulic and structural improvements at a feasible cost. Short-term impacts to existing businesses and surrounding uses may occur in the following areas: residential inconveniences, business and institutional operations, pedestrian and vehicular traffic, driveway access, and infrastructure conflicts. Residents, businesses, and institutions to be affected by construction activities will be notified

by the City or by the contractor prior to the commencement of construction.

The impacts of construction activities will be primarily mitigated by scheduling the majority of work during daytime hours (as opposed to night work). Daytime work will ensure minimal impact to existing residences, including reducing the inconvenience of construction noise and dust-related impacts to residents during nighttime hours. The non-invasive construction method of rehabilitation through the use of CIPP lining for sewer lines may require the use of generators during nighttime hours; however, the operating of such generators at night will be minimized to the extent feasible. It is anticipated that such nighttime construction activities will exceed allowable noise levels. A noise variance will be obtained prior to commencement of construction activities, in accordance with the Chapter 46 rules.

During the night, all associated construction equipment will be secured and located within the project area so as not to impede nighttime residential and business activities. Open trenches will be covered with steel plates during hours when construction operations are not occurring to allow vehicular movement within the project area. Additionally, traffic and pedestrian detours (via traffic control plans) will be provided throughout the project area.

Although most of the sewer lines and manholes to be replaced, rehabilitated, or newly constructed are located within roadways, some sewer lines and manholes are located across private property. As such, entry and construction activity on private property is expected. Right-of-entry will be gained by the City for work in these areas, and the contractor will coordinate access with property owners. Any existing vegetation or landscaped areas disturbed within the project area during construction activities will be restored and revegetated, to the extent practicable.

As previously stated in Section 2.4, Land Ownership, there are a few instances within the project area in which the City has not been granted a sewer easement located across private property. Additionally, there are some privately owned roadways within the project area. The City is currently in the process of acquiring such easements through negotiations with the necessary landowners. Construction easements would generally not be required for the construction of temporary sewer flow control (both above and below

ground) and open cut trench excavation repairs because the City has been granted the majority of all necessary streets and sewer easements. If for some reason temporary construction easements are necessary, they will be obtained during the proposed project's design phase prior to construction activities.

Overall, potential impacts or inconveniences that may occur to residents and surrounding businesses and institutions during construction of the proposed project will be temporary in nature and will cease upon completion of the construction. There are no adverse long-term socio-economic impacts anticipated due to the completion and operation of the proposed project. The proposed project will enhance sewer service in the project area, and therefore provide long-term benefits to residents, businesses, and institutions by implementing measures to prevent sewer system failures that would adversely affect public health and safety.

3.13.2. Police, Fire and Ambulance Service

Police: Police protection services in the vicinity of the project area are provided by the City's Honolulu Police Department (HPD). The project area is located within HPD's Patrol District 5, which extends from the Pali Highway in the east to Aliamanu Street in the west.

Fire: Fire protection services are provided by the Honolulu Fire Department. Fire stations in the vicinity of the project area include the Kalihi Uka Fire Station located approximately one mile northwest of the project area, Kuakini Fire Station located approximately one mile southeast of the project area, and the Kalihi Fire Station located approximately one mile west of the project area.

Ambulance: The nearest Emergency Medical Service ambulances are based at the St. Francis Hospital.

Impacts and Mitigation Measures

Although the existing residences, businesses, and institutions in the project area may occasionally require police, fire, and ambulance services, the proposed sewer rehabilitation project will not affect the demand for such services. The project area is located within existing service areas.

For the duration of the project, the Honolulu Fire Department (HFD) requires compliance with the following:

1. Maintain fire apparatus access throughout the construction site.
2. Maintain access to fire hydrants. Notify the HFD's Fire Communication Center at 523-4411 regarding any interruption of the existing fire hydrant system.

The contractor will be responsible for adhering to the above requirements.

3.14. Infrastructure and Utilities

The following section includes discussions regarding roadways and utility lines, including water, drainage, wastewater, electrical, telephone, cable, and gas lines.

3.14.1. Roadways and Traffic Considerations

Vehicular access to the project area is provided via numerous routes, and several roadways traverse through the project area (Figure 1). North School Street is the major roadway in the project area that carries heavy volumes of traffic in the east-west direction, including public transit system buses. Four through lanes (two in each direction) accommodate traffic along North School Street through the project area. There is also considerable traffic on Houghtailing Street and Kapalama Avenue, both north-south connector roads that provide two through lanes of traffic (one in each direction) within the project area. There are several additional roadways throughout the project area, all of which have two through lanes of traffic (one in each direction) within the project area.

Typically, roadways within the project area are rather narrow. Due to the high density of residents, parked cars line many sections of the roads, and in some areas reduce the clearance available for larger vehicles. At the southwest end of the project area in the vicinity of North School Street, the lower sections of Kapalama Avenue, Houghtailing Street, and Aupuni Street are considerably wider than other roadways in the project area.

Sidewalks are located at certain locations within the project area, such as along North School Street, Kapalama Avenue, Houghtailing Street, Aupuni Street, and various other roadways. Crosswalks are located at each North School Street intersection within the project area, as well as at the Houghtailing Street and Hala Street intersection.

Impacts and Mitigation Measures

The proposed project is anticipated to have short-term construction impacts on traffic. Given that proposed construction activities will be performed primarily within existing roadways, disruption to vehicular traffic will be unavoidable. The traffic impacts from construction will be temporary in nature and will generally shift to different locations within the project area as each sewer line segment and manhole is completed.

The vast majority of the proposed sewer system improvements within the project area will involve rehabilitation through the use of CIPP lining for sewer lines, and epoxy coatings and cover/frame replacement for existing manholes. These construction methods do not require trenching and minimize surface impacts while providing the necessary sewer improvements. However, open cut trench construction methods will be used within the project area for those proposed sewer system improvements involving spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes. The open cut trenching will be scheduled during daytime hours (as opposed to night work), when traffic volumes are generally low within the residential neighborhoods of the project area and minimal impacts to residents can be expected.

During the night, all associated construction equipment will be secured and located within the project area so as not to impede nighttime residential and business traffic. Open trenches will be covered and secured with steel plates during hours when construction operations are not occurring to allow vehicular movement within the project area.

Traffic operations along the various roadways in the project area are under the jurisdiction of the City's DTS. The public transit system is administered by the DTS through its contractor, Oahu Transit Services, Incorporated. Close coordination with both the City's DTS and Oahu Transit Services, Inc. will be necessary to ensure minimal inconvenience to motorists and public transportation services. Both entities will be informed of the project schedule two weeks prior to the commencement of construction activities.

Traffic and pedestrian detours will be provided throughout the project area. Appropriate traffic control devices and warning signs will be installed and construction workers or special-duty police officers will direct traffic flow, when necessary. All traffic controls within the street right-of-way shall be maintained during the construction phase and all permanent traffic controls disturbed during the construction phase shall be replaced by the contractor upon completion of the construction work. Traffic control plans for the proposed project will be prepared and a street usage permit will be obtained prior to the construction of the proposed sewer improvements.

Additionally, further investigation of pedestrian and traffic detouring, including bus stop access, will be evaluated in the design phase of the proposed project to ensure ADA compliance. Excavation along North School Street and Hala Street may impact existing crosswalks and the existing curb ramps will be inspected and evaluated during the design phase. Curb ramps and access routes affected by the proposed construction activities will be updated as required in accordance with ADA guidelines. Likewise, bus stop areas that may be affected by the project will be evaluated and, if subject to construction impacts, restored to ADA compliant condition. Additionally, if bus stop areas are impacted during construction activities, they shall be made ADA compliant.

There are no adverse long-term traffic related impacts associated with the completion and operation of the proposed sewer rehabilitation project.

3.14.2. Water System

Current uses within the project area receive water service from the City and County of Honolulu, Board of Water Supply (BWS). In order to gather information regarding the existing water utility lines within the project area, in August 2004, The Limtiaco Consulting Group requested and obtained as-built drawings of the BWS distribution system within the project area. As indicated by the as-built drawings, the water system within the project area consists of underground utility lines.

Topographic surveys are currently being performed at all locations targeted for sewer improvements within the project area in support of the design phase for the proposed project. This effort began in July 2006 and is anticipated to be complete by November 2006. The topographic surveys being conducted

will include information on any BWS distribution system utilities in the project area, and the location of all underground water utility lines will be verified.

Impacts and Mitigation Measures

The majority of the proposed improvements within the project area utilize construction methods that do not require excavation or trenching activities. Therefore, no significant impacts to the subsurface are anticipated.

While the proposed project will also involve the use of open cut trench construction methods for some of the proposed sewer system improvements, the aforementioned topographic surveys currently being performed in support of the design phase will identify the location of any BWS distribution system utilities in the project area. The location of all underground water utility lines will be verified, and the proposed project will seek to avoid any disruptions to water service.

Short-term construction impacts may possibly affect the BWS water utility lines in the project area. To avoid any infrastructure conflicts and any damage to the water distribution system, the construction drawings will be submitted to the BWS for review and approval. Additionally, the construction schedule will be coordinated with the BWS to minimize any possible impacts to the water system.

There are no long-term impacts associated with the completion and operation of the proposed sewer rehabilitation project. The proposed project will not induce any additional water demand within and in the vicinity of the project area.

3.14.3. Drainage System

In order to gather information regarding the existing storm drain system within the project area, in August 2004, The Limtiaco Consulting Group requested and obtained as-built plans of the storm drain system within the project area. Per the as-built plans, the storm drain system in the project area consists of underground drain pipes that collect stormwater runoff from the roadways traversing throughout the project area. The storm drain pipes are primarily located within roadways.

As mentioned in Section 3.6, Surface Waters above, the Nuhelewai Stream flows into an underground storm drain just downstream of Kealia Street. This storm drain runs underground through privately owned parcels.

The storm drain pipes located in the project area eventually connect to the Nuhelewai Stream, including that portion of the stream which flows into an underground storm drain just downstream of Kealia Street, and the Kapalama Stream. Therefore, runoff collected by the storm drain system eventually discharges into the Nuhelewai Stream and Kapalama Stream, which eventually drains to Honolulu Harbor.

Topographic surveys are currently being performed at all locations targeted for sewer improvements within the project area in support of the design phase for the proposed project. This effort began in July 2006 and is anticipated to be complete by November 2006. The topographic surveys being conducted will include information on any storm drain system utilities in the project area, and the location of all underground storm drain utility lines will be verified.

Impacts and Mitigation Measures

The vast majority of the proposed sewer system improvements within the project area will involve rehabilitation through the use of CIPP lining for sewer lines, and epoxy coatings and cover/frame replacement for existing manholes. As there are no excavation or trenching activities associated with these construction methods, no significant impacts to the City's storm drain system are anticipated.

While the proposed project will also involve the use of open cut trench construction methods for some of the proposed sewer system improvements, the aforementioned topographic surveys currently being performed in support of the design phase will identify the location of any storm drain system utilities in the project area. The location of all underground storm drain utility lines will be verified, and the proposed project will seek to avoid any infrastructure conflicts and any damage to the storm drain system.

Short-term construction impacts may possibly affect the storm drain system in the project area. To avoid any infrastructure conflicts and any damage to the storm drain system, the City DDC will review and approve the construction drawings. Further, as mentioned in Section 3.10, Surface Water Quality above, appropriate measures will be implemented to prevent pollutants from entering the storm drain system during construction. Such measures may include

installing sediment barriers at storm drain inlets and repaving and revegetating areas as soon as practicable. Additionally, as storm water runoff discharges associated with construction activities resulting in the disturbance of equal to or greater than one acre of total land area will be required for the proposed project, a NPDES permit will be acquired for this project and the appropriate conditions will be applied during construction activities.

There are no long-term drainage impacts associated with the completion and operation of the proposed sewer improvements. The project will not increase the amount of impervious surface area within the project area or induce additional runoff.

3.14.4. Wastewater System

Parcels within the project area are served by sewers that are components of the City's municipal wastewater collection system. There are no documented incidents of individual wastewater systems, such as cesspools and septic tanks, within the project area.

The existing sewer system located within the project area is proposed for rehabilitation, and consists of approximately 42,289 lf of sewer line, ranging from 6-inch to 30-inch diameter pipes, and 311 manholes. The 0.25 square mile project area generates a peak design wastewater flow of approximately 6.7 mgd. This translates to approximately 0.5156 mgd of average daily flow. Wastewater collected by this sewer system flows to the Hart Street WWPS, where it is subsequently conveyed to the Sand Island WWTP, located approximately 3.7 miles southwest of the project area.

As noted in Section 2, the existing sewer system within the project area primarily collects wastewater from residential sources, as well as some commercial and institutional sources. Improvements are needed to correct existing hydraulic deficiencies, structural problems, and current maintenance issues that have developed in the project area for continued sewer service. Maintenance problems, hydraulic deficiencies, and deteriorating structural conditions have compromised the capacity of the existing sewer system in the project area.

Impacts and Mitigation Measures

The proposed sewer rehabilitation project addresses the current maintenance issues and hydraulic capacity deficiencies, while correcting structural problems. Construction activities will require

the establishment of temporary sewer bypass lines to allow continued sewer service during the installation of the new sewer system components. The long-term beneficial impacts of the project will be realized by improving wastewater service and the reliability of the wastewater system within the sewer system collection area.

3.14.5. Electrical, Telephone, Cable, and Gas Service

During preparation of the Design Alternatives Report, Hawaiian Electric Company, Inc., Hawaiian Telcom (formerly Verizon Hawaii Inc.), Oceanic Time Warner Cable, and The Gas Company were consulted regarding the possible impacts to their businesses during the construction period.

Electrical Service: Current uses within the project area receive electrical service from Hawaiian Electric Company, Inc. (HECO). In August 2004, The Limtiaco Consulting Group requested information regarding HECO's facilities within the project area. HECO was unable to provide information on the electrical facilities within the project area due to workload and higher priority projects. Additionally, in a letter dated March 28, 2006 (see Section 8.1, Pre-Assessment Consultation for more information, and Appendix B for a copy of the letter), HECO indicated that they maintain facilities and existing easements within the project area, and will need continued access for maintenance purposes. It is anticipated that electrical facilities within the project area are situated aboveground.

Topographic surveys are currently being performed at all locations targeted for sewer improvements within the project area in support of the design phase for the proposed project. This effort began in July 2006 and is anticipated to be complete by November 2006. The topographic surveys being conducted will include information on any HECO electrical facilities in the project area, and the location of all electrical facilities will be verified.

Telephone Service: Telephone service in the area is provided by Hawaiian Telcom (formerly Verizon Hawaii Inc.). The Limtiaco Consulting Group requested information regarding existing telephone utilities within the project area in August 2004. The former Verizon Hawaii Inc. stated that a topographic map was required in order to provide information on the telephone facilities within the project area. It is anticipated that telephone facilities within the project area are situated aboveground. The topographic surveys currently being conducted in support of the design phase for the proposed project will include information on any telephone facilities, and the location of all telephone utilities within the project area will be verified.

Cable Service: Cable service in the area is provided by Oceanic Time Warner Cable (Oceanic). In August 2004, The Limtiaco Consulting Group requested information regarding Oceanic's utilities within the project area. Oceanic confirmed that there are no underground cables located within the project area. It is anticipated that Oceanic's facilities are situated aboveground in the project area. The topographic surveys currently being conducted in support of the design phase for the proposed project will include information on any cable facilities, and the location of all cable utilities within the project area will be verified.

Gas Service: Current users within the project area receive gas service from The Gas Company. The Gas Company's existing distribution system within the project area consists of underground utility gas mains, as presented by maps provided to The Limtiaco Consulting Group in August 2004. Additionally, in a letter dated March 7, 2006 (see Section 8.1, Pre-Assessment Consultation for more information, and Appendix B for a copy of the letter), The Gas Company indicated that they maintain underground utility gas mains in the project vicinity that serve residential and commercial customers in the area and which are interconnected with the utility network in Honolulu. The topographic surveys currently being conducted in support of the design phase for the proposed project will include information on any gas utilities, and the location of all underground utility gas mains within the project area will be verified.

Impacts and Mitigation Measures

The vast majority of the proposed sewer system improvements within the project area will involve rehabilitation through the use of CIPP lining for sewer lines, and epoxy coatings and cover/frame replacement for existing manholes. While these construction methods typically involve minimal surface impacts and no anticipated subsurface impacts, the proposed project will involve the use of open cut trench construction methods for proposed spot repairs of existing sewer lines, sewer line replacement, and the installation of new sewer line and new manholes.

The aforementioned topographic surveys currently being performed in support of the design phase will identify the location of any electrical, telephone, cable, and gas facilities in the project area. The location of all aboveground and underground utilities will be verified, and the proposed project will seek to avoid any disruptions to these utility services.

HECO's facilities will be identified during the design phase, and two sets of the construction plans for the proposed sewer rehabilitation project will be submitted for HECO review. Additionally, it is recognized that HECO will need continued access to its facilities and easements located within the project area for maintenance purposes. Hawaiian Telcom's facilities will also be confirmed, and necessary adjustments will be made to avoid disturbance to the telephone system. Oceanic's cable lines will be identified and provisions will be made to avoid disturbance to the cable system. Likewise, The Gas Company's utility lines will also be identified and any infrastructure conflicts or damage to the gas distribution system will be avoided. HECO, Hawaiian Telcom, Oceanic, and The Gas Company will be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases.

Long-term impacts to electrical, telephone, cable, and gas service in the project area are not anticipated with regard to completion and operation of the proposed sewer rehabilitation project.

4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

4.1. State Land Use District

The State Land Use Law, Chapter 205, HRS, is intended to preserve, protect, and encourage the development of lands in the State for uses which are best suited to the public health and welfare for Hawaii's people. All lands in the State are classified into four land use districts by the State Land Use Commission: Urban, Agricultural, Conservation, and Rural.

Comment:

The entire project area is within the State "Urban" district. The proposed project is consistent with this designation as it supports residential, commercial and institutional uses, which are permitted uses in the "Urban" district.

4.2. Hawaii State Plan

The Hawaii State Plan, HRS Chapter 226, outlines broad goals, policies and objectives to serve as guidelines for the future growth and development of the State. The proposed project is consistent with the following objectives, policies and priority guidelines:

- §226-13 *Objectives and policies for the physical environment – land, air, and water quality.*
- (a) *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*
- (1) *Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.*
 - (2) *Greater public awareness and appreciation of Hawaii's environmental resources.*
- (b) *To achieve the land, air, and water quality objectives, it shall be the policy of this State to:*
- (2) *Promote the proper management of Hawaii's land and water resources.*
 - (3) *Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.*
 - (4) *Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.*
 - (7) *Encourage urban development in close proximity to existing services and facilities.*

Comment:

The proposed project will have no significant long-term impact on the natural environment, including surface and coastal water quality and air quality.

4.3. City and County of Honolulu General Plan

The General Plan of the City and County of Honolulu sets forth broad statements of social, economic, environmental, and design objectives and polices which are desired over the long-term. The proposed project is consistent with the following policies and objectives:

III. Natural Environment

Objective A To protect and preserve the natural environment.

Policy 1: Protect Oahu's natural environment, especially the shoreline, valleys, and ridges from incompatible development.

Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.

Comment:

The proposed project would primarily involve rehabilitation and replacement of existing underground sewer pipes and manholes, which serve the present land uses in the Houghtailing Street Area. The construction of some new underground sewer pipes and manholes would be required in order to divert flows within the project area, and would serve the present land uses in the Houghtailing Street Area. Additionally, the proposed project is not anticipated to have any long-term impacts on air quality, water quality, or noise levels.

V. Transportation and Utilities

Objective B To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal.

Policy 5: Provide safe, efficient, and environmentally sensitive waste-collection and waste-disposal services.

Objective C To maintain a high level of service for all utilities.

Policy 1: Maintain existing utility systems in order to avoid major breakdowns.

Policy 2: Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.

Objective D To maintain transportation and utility systems which will help Oahu continue to be a desirable place to live and visit.

Policy 1: Give primary emphasis in the capital-improvement program to the maintenance and improvement of existing roads and utilities.

Comment:

The proposed project will prolong the useful life of the sewer system serving the Houghtailing Street Area, thereby, preventing major breakdowns and allowing for environmentally sound disposal of wastewater.

VII. Physical Development and Urban Design

Objective A To coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well designed, and appropriate for the areas in which they will be located.

Policy 2: Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and public safety facilities.

Comment:

The proposed project will result in the correction of existing structural problems, improvement of hydraulic performance conditions, and address current maintenance issues. In areas where a sewer line has been identified for rehabilitation or replacement, the flow capacity of the sewer line will be improved to accommodate existing and future flow levels. The proposed project will successfully improve sewer maintainability and eliminate surcharge conditions, based on hydraulic modeling.

4.4. Primary Urban Center Development Plan

The Island of Oahu is divided into eight Development Plan areas; the plans for six of these areas have been designated as Sustainable Community Plans. Each plan implements the objectives and policies of the General Plan and serves as a guide for public policy, investment, and decision making within each respective region. Together with the General Plan, they guide population and land use growth over a 20-year time span. The project area is located within the region encompassed by

the Primary Urban Center (PUC) Development Plan.

A major revision of the Development Plans, based on a 1992 City Charter change, was recently completed. The revised plans are visionary, conceptual plans without the parcel specific detail of the first Development Plans adopted in the early 1980s. The PUC Development Plan Revision Program was completed in June 2004.

The PUC Development Plan revision was initiated in 1996 and utilized community workshops and studies on economic development, housing, visitor facilities, infrastructure, and urban design. The revised plan establishes policy to shape the growth and development of the PUC over the next 20 years. Because the PUC includes a diverse mix of uses, the plan establishes broad regional policies and provides a foundation for more specific planning at the local level. Chapter 2 sets forth the overall vision for the PUC, Chapter 3 outlines policies for land use and transportation, Chapter 4 sets policies for infrastructure and public facilities, and Chapter 5 discusses the plan implementation.

The revised PUC Development Plan indicates that the project area is within the areas designated as Lower-Density Residential on the PUC Development Plan Land Use Map (PUC - Central). Additionally, the area at the intersection of Houghtailing Street and North School Street is designated as a Community/Neighborhood Commercial district on the PUC Development Plan Land Use Map (PUC - Central). Community/Neighborhood Commercial districts are primarily located within the lower-density residential neighborhoods that they serve, and are generally 10 acres or less in land area with clusters of establishments typically consisting of service stations, grocery and sundry stores, and other small businesses serving residential customers. The proposed project is consistent with the PUC land use designations, and is also consistent with the following infrastructure and public facilities policies and guidelines:

4.2.2 Policies

- *Implement wastewater collection system improvements to provide adequate service and sound facilities to existing neighborhoods and timely increases in system capacity to areas planned to undergo improvement or change in use.*

4.2.3 Guidelines

- *Complete current projects needed to correct currently identified service or facility inadequacies to neighborhoods where change in service demand is not anticipated.*

Comment:

As noted in Section 4.3, the proposed project will result in the correction of existing structural problems, improvement of hydraulic performance conditions, and address current maintenance issues. The flow capacity of the sewer line will be improved, and the proposed project will successfully improve sewer maintainability and eliminate surcharge conditions, based on hydraulic modeling. The proposed sewer rehabilitation project is consistent in supporting the revised PUC Development Plan and Land Use Map designations in the project area. Additionally, the proposed project supports the revised PUC Development Plan's policies and guidelines pertaining to the region's wastewater collection system.

The PUC Public Infrastructure Map (PIM), adopted by the City Council on October 13, 2004, supports the implementation of the PUC Development Plan and describes the approximate location of major planned facilities project. According to previous correspondence from the City's Department of Planning and Permitting concerning various other proposed sewer rehabilitation projects, "Underground sewer line projects are not a type of project that needs to be shown on the PIM." Therefore, a revision to the PIM is not needed for the proposed project.

4.5. City and County of Honolulu Land Use Ordinance

The City and County of Honolulu Land Use Ordinance regulates land use in accordance with adopted land use policies, including the City and County of Honolulu General Plan and the Development/Sustainable Community Plans. The majority of the project area is designated as within the R-5 Residential zoning district. However, most of parcels adjacent to North School Street are designated as within the B-2 Community Business zoning district, and approximately three parcels located at the corner of Kapalama Avenue and North School Street are designated as P-2 General Preservation. Lands designated as urban areas by the State, but well-suited to the functions of providing visual relief and contrast to the City's built environment or serving as outdoor space for the public's use and enjoyments may be zoned as P-2 General Preservation.

Comment:

The resulting benefits of the proposed sewer rehabilitation project will serve existing uses consistent with the City's zoning designations of R-5 Residential, B-2 Community Business, P-2 General Preservation.

4.6. State Coastal Zone Management Program

Hawaii's Coastal Zone Management (CZM) program, established pursuant to

Chapter 205A, HRS, as amended, is administered by the State Office of Planning and provides for the beneficial use, protection and development of the State's coastal zone. The objectives and policies of the Hawaii CZM program encompass broad concerns such as impacts on recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development.

Comment:

The proposed sewer reconstruction project is not anticipated to adversely impact recreational, historic, archaeological, scenic or coastal resources.

4.7. Special Management Area

Pursuant to the Hawaii Coastal Zone Management Act (Chapter 205A, HRS), all counties have enacted ordinances establishing Special Management Areas (SMAs). Development within the SMA, including most development proposed by the State, requires a SMA permit. On Oahu, the SMA permit is administered by the City and County of Honolulu Department of Planning and Permitting and acted upon by the City Council pursuant to Chapter 25, Revised Ordinances of Honolulu.

Comment:

The location of the SMA boundary relative to the proposed sewer reconstruction is approximately 1 mile to the south. Therefore, the project area is located outside the boundaries of the City's SMA and approval of a SMA permit is not required.

5. ALTERNATIVES TO THE PROPOSED ACTION

5.1. No-Action Alternative

Under the No-Action Alternative, the existing sewer system located within the project area would remain in its existing state. Structural, maintenance and capacity problems would continue to occur, and further degradation would be likely. Sewer service in the project area would eventually be compromised. No construction related impacts to the environment or to existing and surrounding uses would occur. There would be no commitment of funding or capital improvement costs. However, this alternative would expose residents and tenants in the project area, as well as features of the natural environment, to potentially hazardous untreated sewage as a result of sewer system failures. In the long term, the benefits of the proposed sewer rehabilitation project would not be realized.

5.2. Design Alternatives Report

The Limtiaco Consulting Group prepared a Design Alternatives Report to evaluate rehabilitation and/or replacement options for the defective portions of the sewer system, as well as proposals for system improvements through integration or flow diversion opportunities between collection basins. In addition to the proposed action, several construction method alternatives and alternative system improvement scenarios were evaluated, but not selected for this project. The report identifies, evaluates, and examines construction requirements and design scenarios with preliminary layouts, including estimated construction costs.

5.2.1. Alternative Sewer Line Rehabilitation/Replacement Methods

In addition to the proposed action, each proposed construction method alternative for the rehabilitation and/or replacement of the subject sewer lines was evaluated against the following general constraints:

- Ability to replace or rehabilitate structurally defective sewer;
- Ability to eliminate root intrusion;
- Ability to improve slopes and eliminate sags;
- Capacity to minimize traffic, residential, and business interruptions and surface impact; and
- Application of a cost effective design and construction alternative.

The following sections provide descriptions of the various construction method alternatives evaluated, although not selected for this project, including

the work involved and the advantages and disadvantages of each method as they would specifically pertain to this project.

Fold-and-Form. Similar to the CIPP lining process, the fold-and-form lining process inserts a liner into the host pipe to repair the sewer deficiencies. Instead of a flexible membrane liner, the fold and form process uses a solid high-density polyethylene (HDPE) or PVC thermoplastic U-shaped liner. The liner is either extruded in a folded form or extruded in the conventional circular form and subsequently folded using a thermomechanical tool. Once the liner is placed within the host pipe, it is expanded to fit the inner surface of the pipe. Similar to CIPP installation, fold-and-form rehabilitated pipe is of smaller diameter than the host pipe, however, its hydraulic performance is actually improved due to a better roughness coefficient.

Advantages of fold-and-form lining, as applicable to the project area:

- Rapid installation.
- Minimal surface impacts and traffic disturbances.
- No mixing or curing of chemicals required.
- Generally lower costs than other trenchless forms of sewer rehabilitation.

Disadvantages of fold-and-form lining, as applicable to the project area:

- Fold-and-form installations have decreased due to the rising popularity of CIPP installations. This will adversely affect construction costs and the availability of specialty contractors qualified for this type of pipe rehabilitation.
- Connection point of lateral to main is susceptible to infiltration.
- Will require open cut trench excavation to repair sags or slope deficiencies.

Pipe Bursting. Pipe bursting is a pipe rehabilitation method that allows an existing sewer or lateral to be replaced with a new pipe of equal or larger diameter. Pipe bursting requires a winch to pull a pneumatic or hydraulic burster through the existing line. As the burster is pulled forth, the existing pipe is shattered and displaced into the surrounding soils. A new pipe, normally HDPE, is pulled behind the bursting head. The existing laterals need to be disconnected from the main via potholes drilled from the surface prior to the bursting procedure to avoid damage. The laterals are reinstated once the new main is installed.

Pipe bursting is generally suitable for replacing brittle types of pipe material such as vitrified clay, unreinforced concrete, terra cotta, and some types of PVC. The success of pipe bursting is highly dependent upon the surrounding

soil as the cohesiveness of the soil dictates the allowable drive length. Soil composition is also a factor since the burster follows the path of least resistance. As a result, sags may occur in the new sewer line through areas of loose soils.

Excavated pits are required at the launching and receiving ends of the sewer alignment. A thorough geotechnical investigation is required prior to construction to better predict the effects of the bursting upon the pipe and the surrounding soil. At a minimum, the investigation should include boring logs, soil/rock type, permeability, density, moisture content, and investigation and confirmation of nearby utilities.

Advantages of pipe bursting as applicable to the project area:

- Allows for pipe size increase and improved flow capacity.
- Relatively rapid installation and requires a nominal crew size.
- Minimizes surface disruption and reduces social and environmental impacts typically associated with open cut trenching.

Disadvantages of pipe bursting as applicable to the project area:

- Does not repair existing sags in sewer.
- Potential for ground heave and distress to nearby utilities.
- Excavation is required for entrance/exit pits and lateral reinstatements.
- Modification of the sewer manhole is required to allow passage of the pipe bursting head.
- This rehabilitation method is rarely constructed in Hawaii.
- Reinstatement of laterals requires excavation.

Slip-Lining. Slip-lining is a pipe rehabilitation method that involves installing solid sections of pipe, typically polyethylene (PE), into a deficient host pipe. Since the liner is pre-formed, it does not bend readily and requires an entry pit to provide access to the sewer line. The liner sections maybe joined above or below ground prior to installation. The size of the pit depends on the depth of the sewer line, and the size, length, and flexibility of the liner. Considering that slip-lining efforts typically yield between 300 and 600 LF of replaced pipe between pits, this project would require between 8 and 17 pits.

Similar to CIPP installation, slip-lining rehabilitated pipe is of smaller diameter than the host pipe, however, its hydraulic performance is actually improved due to a better roughness coefficient.

Advantages of slip-lining as applicable to the project area:

- Rapid installation.

- No mixing or curing of chemicals required.
- Generally lower costs than other trenchless forms of sewer rehabilitation.

Disadvantages of slip-lining as applicable to the project area:

- Open cut trench excavation is required to repair sags or slope deficiencies and to reconnect laterals.
- Requires grouting of the annular space surrounding the liner to provide structural integrity. Grouting is difficult to implement consistently.
- Rigidity of the liner prevents navigation around bends in larger diameter pipes.
- Requires construction of many entrance and exit pits for slip-lining installation.
- Reduces hydraulic capacities.

Low-Pressure Sewer Systems. Low pressure sewer systems (LPSS) have been installed at various locations for the City. A Policy on LPSS was developed for the Department of Environmental Services in 2002. This Policy has been used as a guidance document for recent implementation of LPSS in sewer improvement districts and for sewer rehabilitation projects. The Policy is viewed as a living document and is revised and expanded as the Department of Environmental Services gains construction and operational knowledge of the systems.

An LPSS is comprised of a wet well, grinder pump, force main and gravity sewer. A grinder pump and wet well is connected to the property owner's sewer line and installed on their property. A small diameter force main connects the pump to the gravity sewer and is bracketed by two check valves at each end to prevent back flow. A relatively shallow trench is needed to install the force main due to the force main being pressurized. The wet well stores the wastewater that is discharged from the home. Once the wastewater reaches a certain level, the grinder pump is activated, pumping the water through the force main and into the gravity sewer.

LPSS can be used to replace portions of gravity sewer that are:

- Difficult to access for maintenance and repair;
- Located in relatively flat areas, affording limited slope and flow velocities or requiring numerous lift stations;
- Located in hilly or rocky terrain, necessitating deep gravity sewers or difficult excavation; and

- Located in areas with a shallow water table, where gravity sewers would be installed below the groundwater level.

Hilly developments often involve back lot sewer mains, outside of the public right-of-way, in order to provide conventional gravity sewer service to all lots in the development. LPSS can provide sewer service to homes or facilities constructed at a lower elevation than the adjoining street. LPSS pumps the wastewater to the higher elevation gravity main and eliminates the need for back lot sewer lines and easements.

Advantages of LPSS as applicable to the project area:

- Improved access and maintenance.
- Lower maintenance costs.
- Elimination of structural defects and maintenance problems associated with the abandoned gravity sewer.

Disadvantages of LPSS as applicable to the project area:

- Potential for mechanical failure.
- Equipment repair and replacement costs.
- Electrical reliability issues.
- Implementation of a non-exclusive perpetual easement with the property.

Horizontal Directional Drilling. Horizontal directional drilling (HDD) is a trenchless method of installing pipe by boring a hole horizontally along the proposed pipe alignment and pulling the new pipe through the hole. Once the new pipe is installed, laterals are reinstated via open-trench excavation. Horizontal directional drilling is ideal for installing utilities in areas where there are minimal existing utilities and exact slopes and invert elevations are not critical.

The drilling equipment consists of a drilling rig, slurry mixing system, power station and ancillary accessories. The drilling length is limited by the capacity of the equipment, site soil conditions, and pipe material selected. No accurate estimation of installation length can be predicted until a soils investigation is done; however, drilling lengths of up to 1,500 feet are possible. A bentonite slurry mixture may be utilized during drilling to provide lubrication and to prevent collapse of the hole.

Staging areas for drilling and receiving are required where the pipe enters or exits the ground. Typically, the staging areas are approximately 12 feet wide by 60 feet long to provide adequate space for boring and hydraulic equipment. Since it is impossible to know what will be encountered below the

surface, HDD typically involves a level of uncertainty regarding existing soil conditions. Extensive subsurface research must be done prior to construction and an accurate soils report is critical to determine the type of cutting head and slurry mixture to be used. The soils report should include, at a minimum, boring logs, soil/rock type, permeability, density, and moisture content.

Advantages of HDD as applicable to the project area:

- Minimal surface impact along the pipe alignment.
- Minimal or no pipe settlement because installation is done upon in-place soils.
- Rapid installation if few subsurface obstacles are encountered.

Disadvantages of HDD as applicable to the project area:

- Difficult to meet grade requirement for gravity lines on flat areas.
- Uncertainties concerning underground soil conditions.
- Creates traffic disturbances at entry pits.
- Connection point of lateral to main is susceptible to infiltration.
- Difficult navigation around existing underground utilities.
- Requires specialty contractors.

5.2.2. Alternative Manhole Rehabilitation/Replacement Methods

In addition to the proposed action, various construction method alternatives for sewer manhole rehabilitation and/or replacement were evaluated in order to address the corrosion problems identified within several of the existing manholes. The following sections provide descriptions of each construction method alternative evaluated, but not selected for this project.

Preformed Manhole Units. Preformed manhole units are one-piece monolithic manhole structures that are installed within existing concrete, brick, or pre-cast manholes. The manhole unit is made from glass fiber-reinforced polyester resin and is typically available in heights from 3 feet to 25 feet, with inside diameters ranging from 42 inches to 72 inches. The installed product provides a seamless, structural barrier that is resistant to acid corrosion (caused by sulfuric acid) and prevents infiltration and exfiltration.

Installation of the preformed manhole unit is performed from the existing ground surface. The area around the top of the existing manhole is excavated to remove the existing cover, frame, riser, and cone section. The bottom of the preformed manhole unit is cut to match the existing manhole invert, and cutouts are made to accommodate existing inlets, drops and cleanouts.

A quick-setting grout mixture is used to create a bottom seal and secure the preformed manhole unit to the bench of the existing manhole. Once the preformed manhole unit is in place, the annular space between the rehabilitation manhole and the existing manhole is filled with grout to provide additional support. Finally, any exposed portions of the manhole exterior are backfilled and standard frame and cover are installed. Unless rehabilitation of the manhole channel is required, installation can be accomplished without sewage bypassing or diversion.

Pour-in-Place Concrete Liners. Pour-in-place concrete liners may be considered for existing manholes that are severely deteriorated. These liners are installed by pouring high-strength ready mixed concrete into steel or plastic forms previously inserted into the existing manholes. Once the concrete has sufficiently cured, the forms are disassembled and removed. Essentially, a new manhole is constructed within the existing manhole. A PVC or PE plastic liner may also be used for added protection by attaching it to the exterior of the steel forms prior to placement of the concrete. Other additives may also be added to the concrete mixture to increase its strength and corrosion resistant properties.

This procedure typically does not require interruption of sewer flows. However, it reduces the cross-sectional area of the manhole due to the thickness of the concrete liner, which is typically 4 to 6 inches.

Cured-in-Place Liners. Cured-in-place manhole liners are similar to cured-in-place pipe liners in terms of materials and installation. The basic materials consist of a flexible epoxy resin-impregnated liner which is custom sized to specifically fit each manhole. Thickness of the liner is designed based on the anticipated groundwater pressure. The liner is inverted into the existing manhole with a removable inflation bladder. Steam is used to inflate the bladder and increase the temperature of the liner. As the bladder inflates, the liner bonds to the interior surface of the existing manhole, filling any gaps or cracks and stopping all active infiltration. After curing, the inflation bladder is removed; leaving the liner securely adhered to the contours of the existing structure. The rehabilitated manhole becomes a monolithic structure resistant to further deterioration, infiltration and exfiltration. Manholes can be completely rehabilitated in 4 to 8 hours, with little or no downtime.

Cementitious Coatings. Another form of manhole rehabilitation consists of applying a cementitious coating to the interior surface of the existing manhole. The cement-based mortar may be sprayed on using a low-pressure centrifugal robotic applicator or with a pump hose (similar to gunite or shotcrete lining). The cementitious coating may also be applied manually

using a hand trowel, which typically provides a more evenly distributed layer of material.

As with any coating material, proper surface preparation is very critical to ensure maximum and proper adhesion to the underlying surface. The interior manhole walls must be cleaned of any debris, contaminants, detergents, and previous coatings prior to application. Cleaning may be conducted using high-pressure water jets, manual cleaning tools, or chemical cleaners. Any underlying surface exhibiting spalling or cracking should be repaired with cement mortar.

During application of the coating, a wet film thickness gauge should be used to ensure a seamless coating and uniform thickness. After the coating has set, it should be visually inspected for pinholes, blisters, proper mix ratio, coverage and cure. Deficiencies in the finished coating shall be repaired in accordance with the manufacturer's recommendations.

The thickness of the cementitious coating may range from ¼-inch to 5-inches depending upon the degree of deterioration and the depth of the manhole. Various compounds and chemical additives may also be used to alter the corrosion and acid resistance, compressive strength, and hardening time depending upon the type of defect identified. Setting times may be as low as 60 to 90 seconds and the compound may also be formulated specifically for underwater use.

5.2.3. Alternative System Improvement Scenarios

In addition to the proposed action, each alternative scenario proposed for system improvements through integration or flow diversion opportunities between collection basins was evaluated against achievement of the following goals:

- Goal 1. Address surcharge conditions along the Houghtailing Main by diverting flows into the Alewa Main or the Aupuni Main;
- Goal 2. Correct structural and hydraulic deficiencies within the lower sections of the Houghtailing, Alewa, and Aupuni Mains to meet future flow conditions and accommodate sewer cleaning and service activities; and
- Goal 3. Increase system flexibility by providing connections for temporary relief in the event that a downstream area requires maintenance or is temporarily inoperable. This goal also considers the system's ability

to relieve the main lines that receive a majority of the flow by spreading the flow into the surrounding main lines.

The following sections provide descriptions of the alternative system improvement scenarios evaluated, but not selected for this project.

System Improvement Scenario Alternative #1. System Improvement Scenario Alternative #1 uses the existing flow diversion between manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003) to divert flows from areas of the Houghtailing Basin to the Alewa Main, and rehabilitates the Aupuni Main. The improvements are illustrated in Figure 14. System Improvement Scenario Alternative #1 includes the following five actions:

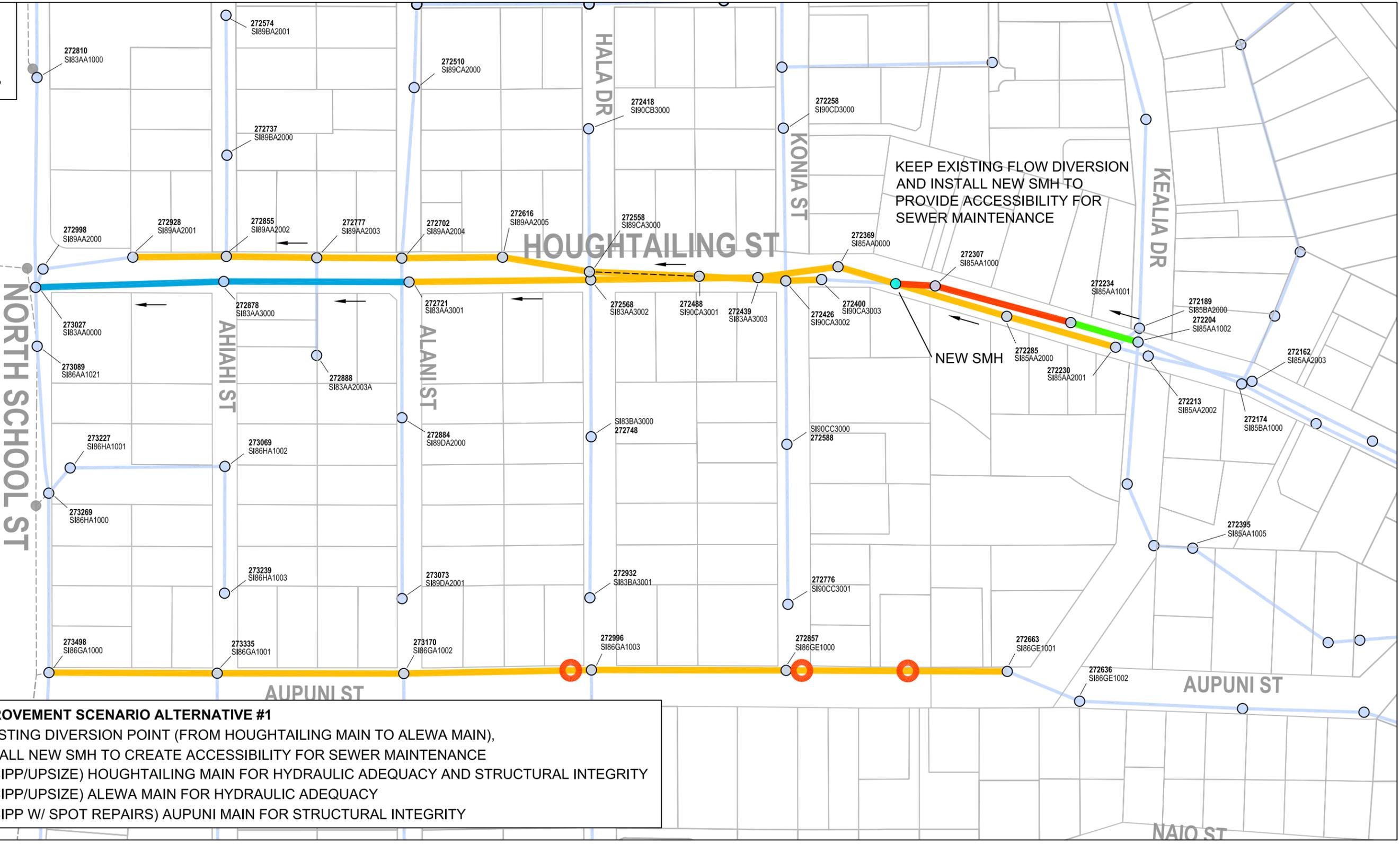
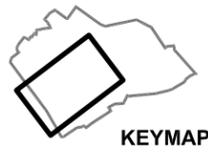
- a. Install New Manhole at Existing Diversion: Flow is diverted between sewer manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003) on the Houghtailing Main and between sewer manholes manhole SID 272285 (ISAP SI85AA2000) and manhole SID 272369 (ISAP SI85AA0000) on the Alewa Main. A new manhole will be installed at the diversion point to provide accessibility for sewer maintenance.
- b. Rehabilitate (Upsize) Houghtailing Main Upstream of Diversion Point for Hydraulic Adequacy: The segment on the Houghtailing Main from manhole SID 272204 (ISAP SI85AA1002) to manhole SID 272234 (ISAP SI85AA1001) will need to be upsized to a 12-inch line to accommodate flows upstream of manhole SID 272204 (ISAP SI85AA1002). The segments on the Houghtailing Main from manhole SID 272234 (ISAP SI85AA1001) to the new manhole at the diversion point will need to be upsized to an 8-inch line.
- c. CIPP Houghtailing Main for Continued Lateral Service for Downstream Users: The 6-inch sewer segments downstream of manhole SID 272400 (ISAP SI90CA3003) to manhole SID 272928 (ISAP SI89AA2001) will be rehabilitated with the installation of CIPP to address structural conditions and provide continued service for laterals and collector lines that flow into these segments. Due to severe pipe deficiencies, the segment between manhole SID 272488 (ISAP SI90CA3001) and manhole SID 272558 (ISAP SI89CA3000) will require a CIPP pre-liner to provide added structural integrity.
- d. Rehabilitate (CIPP/Upsize) Alewa Main for Hydraulic Adequacy: Hydraulic conditions in the Alewa Main will be improved with CIPP in the 12-inch

sewer segments downstream of manhole SID 272230 (ISAP SI85AA2001), continuing to manhole SID 272721 (ISAP SI83AA3001). The 12-inch segments from manhole SID 272721 (ISAP SI83AA3001) to manhole SID 273027 (ISAP SI83AA0000) will be upsized to an 18-inch line to accommodate the diverted flows from the Houghtailing Basin.

- e. Rehabilitate (CIPP with Spot Repairs) Aupuni Main for Structural Integrity: The 6-inch Aupuni Main from manhole SID 272663 (ISAP SI86GE1001) to manhole SID 273498 (ISAP SI86GA1000) will be rehabilitated with CIPP, in conjunction with spot repairs at three locations to repair severe offset joints or broken pipe. This alternative considered upsizing the main from 6-inch to 8-inch in order to meet the City design standard, however, the hydraulic capacity (both existing and future flows) are met with this recommendation. Further, upsizing the main would require construction alternatives such as open cut excavation or pipe bursting. Both options are considerably more expensive and have significant construction impacts, when compared to CIPP rehabilitation.

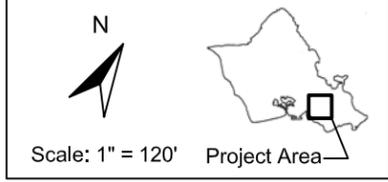
System Improvement Scenario Alternative #2. System Improvement Scenario Alternative #2 proposes a diversion point (similar to the Proposed System Improvement Scenario) that transfers flow from the Houghtailing Basin to the Alewa Main and completely abandons the Houghtailing Main downstream of manhole SID 272234 (ISAP SI85AA1001). All collector lines and laterals downstream of this manhole will be transferred into the Alewa Main by constructing new connections. Lastly, the Aupuni Main will be rehabilitated by CIPP installation. The improvements are illustrated in Figure 15. System Improvement Scenario Alternative #2 includes the following three actions:

- a. Abandon Houghtailing Main from Manhole SID 272234 (ISAP SI85AA1001) to Manhole SID 273027 (ISAP SI83AA0000) and Transfer the Services to Alewa Main: Flows from upstream areas of the Houghtailing Basin will be diverted at sewer manhole SID 272234 (ISAP SI85AA1001) by constructing a new 12-inch sewer segment to a new manhole installed on the 12-inch Alewa Main between manhole SID 272230 (ISAP SI85AA2001) and manhole SID 272285 (ISAP SI85AA2000). The segment on the Houghtailing Main from manhole SID 272204 (ISAP SI85AA1002) to manhole SID 272234 (ISAP SI85AA1001) will be upsized to a 12-inch pipe to accommodate anticipated flow volumes. All connections downstream of manhole SID 272234 (ISAP SI85AA1001) on the Houghtailing Main will be transferred to the Alewa Main, including approximately eight lateral connections and seven sewer line connections. The Houghtailing Main will be abandoned (cut and



- SYSTEM IMPROVEMENT SCENARIO ALTERNATIVE #1**
- KEEP EXISTING DIVERSION POINT (FROM HOUGHTAILING MAIN TO ALEWA MAIN), AND INSTALL NEW SMH TO CREATE ACCESSIBILITY FOR SEWER MAINTENANCE
 - REHAB (CIPP/UPSIZING) HOUGHTAILING MAIN FOR HYDRAULIC ADEQUACY AND STRUCTURAL INTEGRITY
 - REHAB (CIPP/UPSIZING) ALEWA MAIN FOR HYDRAULIC ADEQUACY
 - REHAB (CIPP W/ SPOT REPAIRS) AUPUNI MAIN FOR STRUCTURAL INTEGRITY

City & County of Honolulu
 Department of Design & Construction
 Wastewater Division
 April 2006

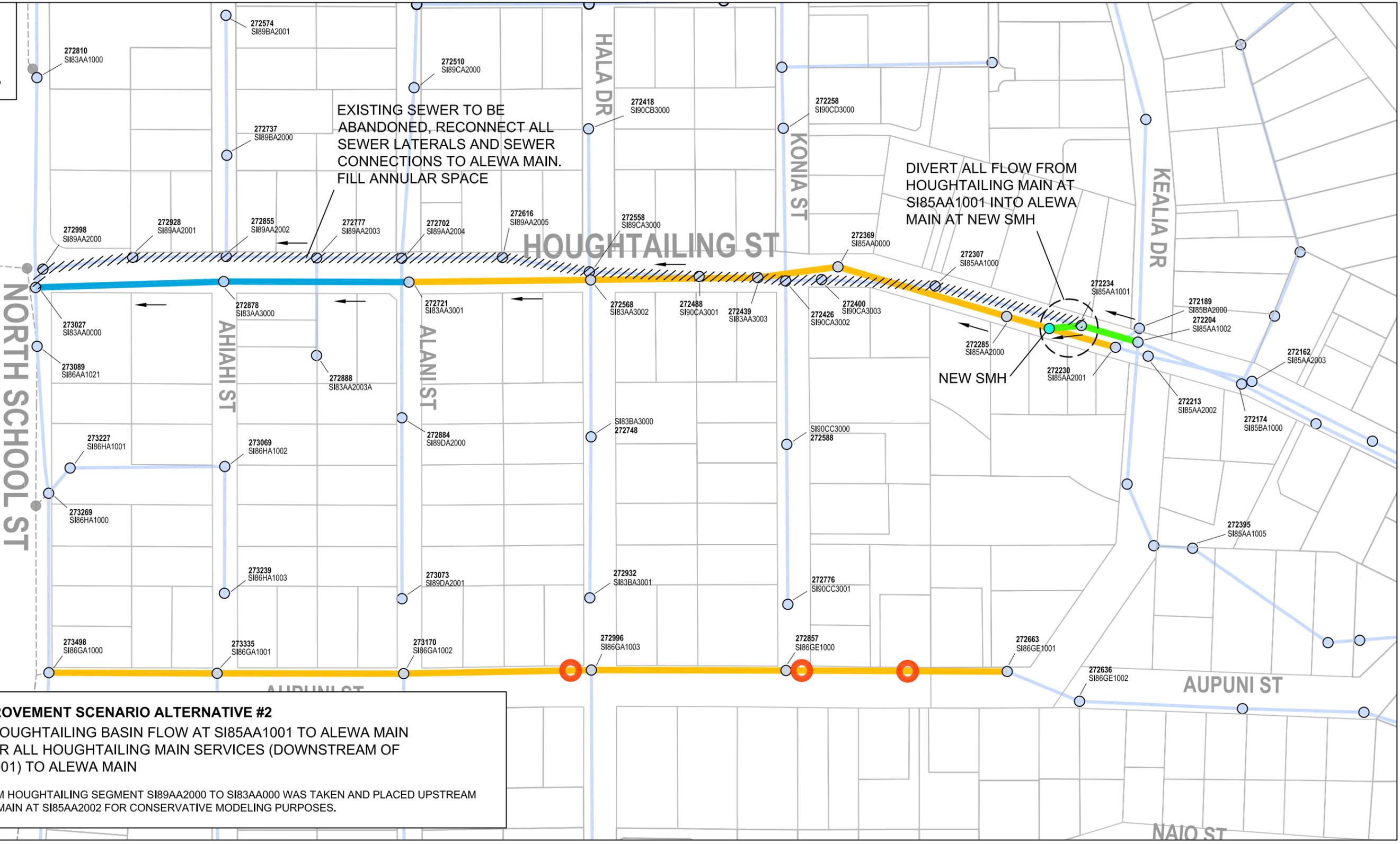
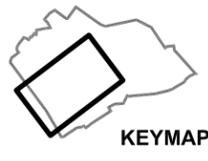


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	Project Boundary		CIPP EXISTING SEWER		INSTALL NEW SMH SPOT REPAIRS
	Existing Project Sewers		INSTALL NEW 18" SEWER		
	Existing SMH Within Project		INSTALL NEW 12" SEWER		
	Existing SMH Not Within Project		INSTALL NEW 8" SEWER		
	SMH SID Number		PRE-LINE AND CIPP EXISTING SEWER		
	SMH ISAP Number				
	Flow Direction				

SYSTEM IMPROVEMENT SCENARIO ALTERNATIVE #1
 Houghtailing Street Area Sewer Rehabilitation
 Figure 14

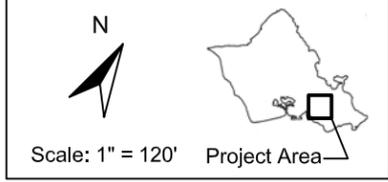
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SYSTEM IMPROVEMENT SCENARIO ALTERNATIVE #2

1. DIVERT HOUGHTAILING BASIN FLOW AT SI85AA1001 TO ALEWA MAIN
2. TRANSFER ALL HOUGHTAILING MAIN SERVICES (DOWNSTREAM OF SI85AA1001) TO ALEWA MAIN

NOTE: FLOW FROM HOUGHTAILING SEGMENT SI89AA2000 TO SI83AA000 WAS TAKEN AND PLACED UPSTREAM INTO THE ALEWA MAIN AT SI85AA2002 FOR CONSERVATIVE MODELING PURPOSES.



Legend

	Project Boundary		TRANSFER ALL SERVICES TO ALEWA MAIN, REINSTATE LATERALS (APPROX. 8') AND SEWER CONNECTIONS, AND ABANDON SEWER
	Existing Project Sewers		CIPP EXISTING SEWER
	Existing SMH Within Project		INSTALL NEW 18" SEWER
	Existing SMH Not Within Project		INSTALL NEW 12" SEWER
	SMH SID Number		SPOT REPAIRS
	SMH ISAP Number		INSTALL NEW SMH
	Flow Direction		

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plugged) from manhole SID 272234 (ISAP SI85AA1001) to manhole SID 273027 (ISAP SI83AA0000).

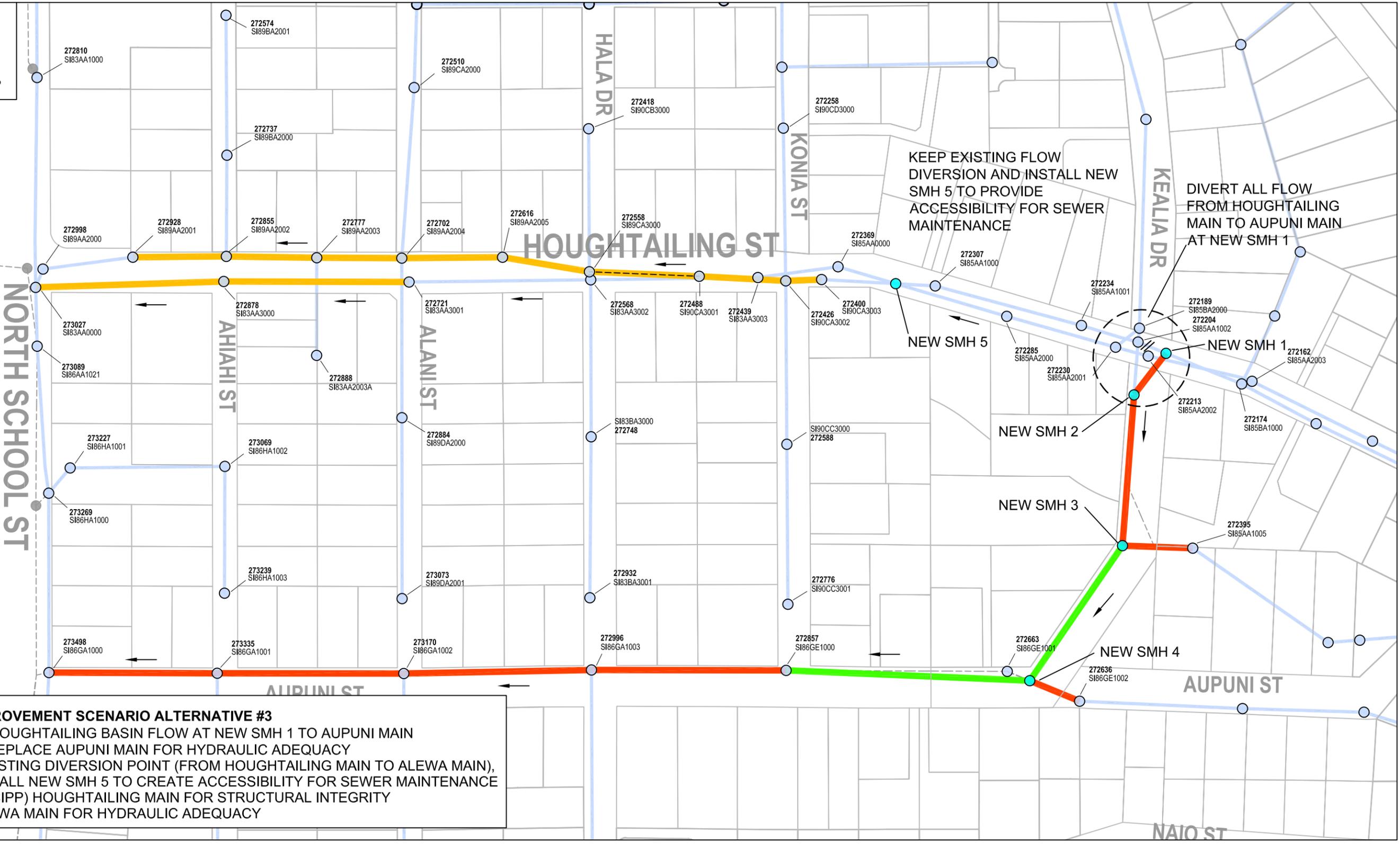
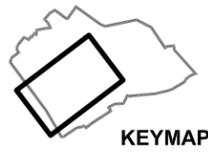
- b. Rehabilitate (CIPP/Upsize) Alewa Main for Hydraulic Adequacy: Hydraulic conditions in the Alewa Main will be improved with CIPP in the 12-inch sewer segments downstream of manhole SID 272230 (ISAP SI85AA2001) continuing to manhole SID 272721 (ISAP SI83AA3001). The 12-inch segments from manhole SID 272721 (ISAP SI83AA3001) to manhole SID 273027 (ISAP SI83AA0000) will be upsized to an 18-inch pipe to accommodate the diverted flows from the Houghtailing Basin.
- c. Rehabilitate (CIPP with Spot Repairs) Aupuni Main for Structural Integrity: The 6-inch Aupuni Main from manhole SID 272663 (ISAP SI86GE1001) to manhole SID 273498 (ISAP SI86GA1000) will be rehabilitated with CIPP, in conjunction with spot repairs at three locations to repair severe offset joints or broken pipe. This alternative considered upsizing the main from 6-inch to 8-inch in order to meet the City design standard, however, the hydraulic capacity (both existing and future flows) are met with this recommendation. Further, upsizing the main would require construction alternatives such as open cut excavation or pipe bursting. Both options are considerably more expensive and have significant construction impacts, when compared against CIPP rehabilitation.

System Improvement Scenario Alternative #3. System Improvement Scenario Alternative #3 diverts flows from areas of the Houghtailing Basin upstream of manhole SID 272204 (ISAP SI85AA1002) to the Aupuni Main. The improvements are illustrated in Figure 16. System Improvement Scenario Alternative #3 includes the following five actions:

- a. Divert All Incoming Houghtailing Basin Flow into Aupuni Main: Flow from upstream areas of the Houghtailing Basin will be diverted at a new sewer manhole upstream of manhole SID 272204 (ISAP SI85AA1002) to the Aupuni Basin by constructing a new 12-inch sewer with an additional three sewer manholes along Kealia Drive from manhole SID 272204 (ISAP SI85AA1002) to manhole SID 272857 (ISAP SI86GE1000). The existing Houghtailing Basin sewers that flow from manhole SID 272395 (ISAP SI85AA1005) to manhole SID 272204 (ISAP SI85AA1002) will be a replaced with a new 8-inch sewer and reverse-sloped to flow to Aupuni Street. It should be noted that this reverse-flow effort will result in open cut trenching through an existing drainage channel. Not only will this add to the complexity of the construction effort, but it will also trigger additional permit requirements. The existing Aupuni Basin sewers from manhole SID 272636 (ISAP SI86GE1002) to manhole SID 272857 (ISAP SI86GE1000)

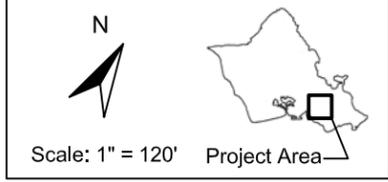
- will also be replaced with new 8-inch and 12-inch sewer to convey the diverted Houghtailing Basin flow and flow from the Aupuni Main. Installation of this new pipe at the specified invert will meet minimum City design standards.
- b. Rehabilitate/Replace Aupuni Main for Hydraulic Adequacy: The Aupuni Main will be improved from manhole SID 272857 (ISAP SI86GE1000) to manhole SID 273498 (ISAP SI86GA1000) by replacing the existing 6-inch pipe with a new 8-inch main to achieve hydraulic adequacy and comply with City design standards.
 - c. Install New Manhole at Existing Diversion: Flow is diverted between sewer manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003) on the Houghtailing Main and between sewer manhole SID 272285 (ISAP SI85AA2000) and manhole SID 272369 (ISAP SI85AA0000) on the Alewa Main. A new manhole will be installed at the diversion point to provide accessibility for sewer maintenance.
 - d. CIPP Houghtailing Main for Continued Lateral Service for Downstream Users: The 6-inch sewer segments downstream of manhole SID 272400 (ISAP SI90CA3003) to manhole SID 272928 (ISAP SI89AA2001) will be rehabilitated with the installation of CIPP to address structural conditions and provide continued service for laterals and collector lines that flow into these segments. Due to severe pipe deficiencies, the segment between manhole SID 272488 (ISAP SI90CA3001) and manhole SID 272558 (ISAP SI89CA3000) will require a CIPP pre-liner to provide added structural integrity.
 - e. CIPP Alewa Main for Hydraulic Adequacy: The 15-inch sewer segments on the Alewa Main from manhole SID 272721 (ISAP SI83AA3001) to manhole SID 273027 (ISAP SI83AA0000) will be rehabilitated with the installation of CIPP to address hydraulic deficiencies.

System Improvement Scenario Alternative #4. System Improvement Scenario Alternative #4 diverts flows from areas of the Houghtailing Basin upstream of manhole SID 272416 (ISAP SI85AA1004) to the Aupuni Main. The improvement also diverts flows from areas of the Houghtailing Basin upstream of manhole SID 272234 (ISAP SI85AA1001) to the Alewa Main and at the existing flow diversion between manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003). The improvements are illustrated in Figure 17. System Improvement Scenario Alternative #4 includes the following five actions:



- SYSTEM IMPROVEMENT SCENARIO ALTERNATIVE #3**
1. DIVERT HOUGHTAILING BASIN FLOW AT NEW SMH 1 TO AUPUNI MAIN
 2. REHAB/REPLACE AUPUNI MAIN FOR HYDRAULIC ADEQUACY
 3. KEEP EXISTING DIVERSION POINT (FROM HOUGHTAILING MAIN TO ALEWA MAIN), AND INSTALL NEW SMH 5 TO CREATE ACCESSIBILITY FOR SEWER MAINTENANCE
 4. REHAB (CIPP) HOUGHTAILING MAIN FOR STRUCTURAL INTEGRITY
 5. CIPP ALEWA MAIN FOR HYDRAULIC ADEQUACY

City & County of Honolulu
 Department of Design & Construction
 Wastewater Division
 April 2006

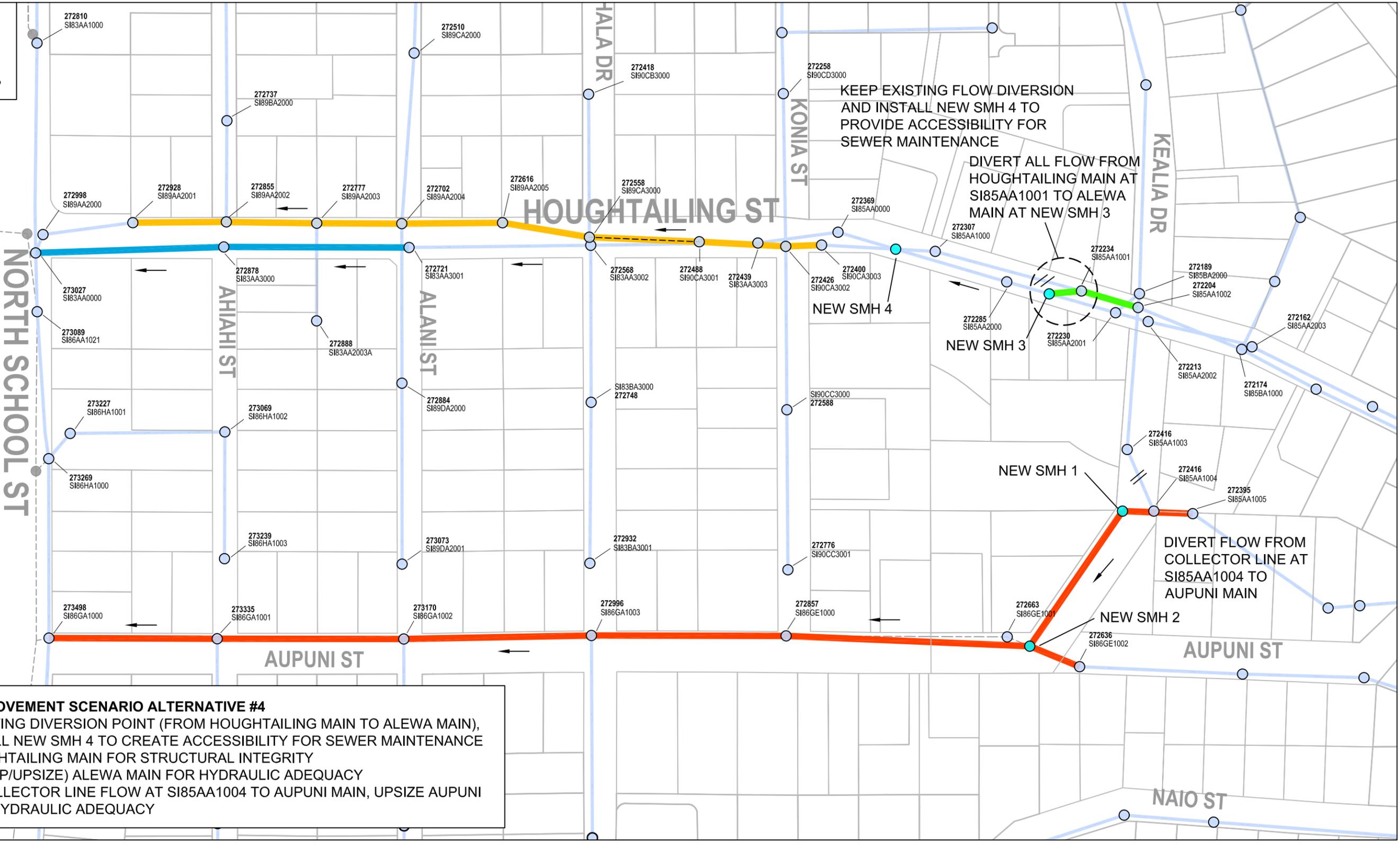
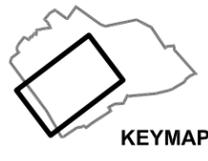


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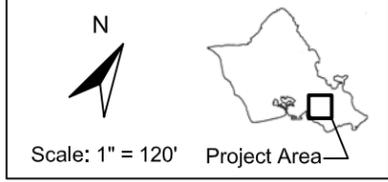
	Project Boundary		CIPP EXISTING SEWER		INSTALL NEW SMH SPOT REPAIRS
	Existing Project Sewers		INSTALL NEW 12" SEWER		
	Existing SMH Within Project		INSTALL NEW 8" SEWER		
	Existing SMH Not Within Project		PRE-LINE AND CIPP EXISTING SEWER		
	SMH SID Number				
	SMH ISAP Number				
	Flow Direction				

SYSTEM IMPROVEMENT SCENARIO ALTERNATIVE #3
 Houghtailing Street Area Sewer Rehabilitation
 Figure 16

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- SYSTEM IMPROVEMENT SCENARIO ALTERNATIVE #4**
1. KEEP EXISTING DIVERSION POINT (FROM HOUGHTAILING MAIN TO ALEWA MAIN), AND INSTALL NEW SMH 4 TO CREATE ACCESSIBILITY FOR SEWER MAINTENANCE
 2. CIPP HOUGHTAILING MAIN FOR STRUCTURAL INTEGRITY
 3. REHAB (CIPP/UPSIE) ALEWA MAIN FOR HYDRAULIC ADEQUACY
 4. DIVERT COLLECTOR LINE FLOW AT SI85AA1004 TO AUPUNI MAIN, UPSIZE AUPUNI MAIN FOR HYDRAULIC ADEQUACY



Legend

	Project Boundary		CIPP EXISTING SEWER
	Existing Project Sewers		INSTALL NEW 18" SEWER
	Existing SMH Within Project		INSTALL NEW 12" SEWER
	Existing SMH Not Within Project		INSTALL NEW 8" SEWER
	SMH SID Number		PRE-LINE AND CIPP EXISTING SEWER
	SMH ISAP Number		INSTALL NEW SMH
	Flow Direction		SPOT REPAIRS

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- a. Divert Incoming Houghtailing Basin Flow into Alewa Main at Manhole SID 272234 (ISAP SI85AA1001): Flow from upstream areas of the Houghtailing Basin will be diverted at sewer manhole SID 272234 (ISAP SI85AA1001) by constructing a new 12-inch sewer segment to a new manhole installed on the 12-inch Alewa Main between manhole SID 272230 (ISAP SI85AA2001) and manhole SID 272285 (ISAP SI85AA2000).

The segment on the Houghtailing Main from manhole SID 272204 (ISAP SI85AA1002) to manhole SID 272234 (ISAP SI85AA1001) will need to be upsized to a 12-inch line to accommodate flow volumes.

- b. Install New Manhole at Existing Diversion: Flow is diverted between sewer manhole SID 272307 (ISAP SI85AA1000) and manhole SID 272400 (ISAP SI90CA3003) on the Houghtailing Main and between sewer manhole SID 272285 (ISAP SI85AA2000) and manhole SID 272369 (ISAP SI85AA0000) on the Alewa Main. A new manhole will be installed at the diversion point to provide accessibility for sewer maintenance.
- c. CIPP Houghtailing Main for Continued Lateral Service for Downstream Users: The 6-inch sewer segments downstream of manhole SID 272400 (ISAP SI90CA3003) to manhole SID 272928 (ISAP SI89AA2001) will be rehabilitated with the installation of CIPP to address structural conditions and provide continued service for laterals and collector lines that flow into these segments. Due to severe pipe deficiencies, the segment between manhole SID 272488 (ISAP SI90CA3001) and manhole SID 272558 (ISAP SI89CA3000) will require a CIPP pre-liner to provide added structural integrity.
- d. Replace (Upsize) Alewa Main for Hydraulic Adequacy: The 12-inch segments from manhole SID 272721 (ISAP SI83AA3001) to manhole SID 273027 (ISAP SI83AA0000) will be upsized to an 18-inch line to accommodate the diverted flows from the Houghtailing Basin.
- e. Divert Incoming Houghtailing Collector Line into Aupuni Main: Flow upstream of manhole SID 272416 (ISAP SI85AA1004) on the Houghtailing Basin will be diverted at a new sewer manhole to the Aupuni Basin by constructing a new 8-inch sewer line and additional sewer manhole on the Aupuni Main. The existing Houghtailing segment that flows from manhole SID 272416 (ISAP SI85AA1003) to manhole SID 272204 (ISAP SI85AA1002) will remain in service, although the upstream segment will

be plugged. There are no laterals connected to this segment. The existing Aupuni Basin sewer segments from manhole SID 272636 (ISAP SI86GE1002) to manhole SID 273498 (ISAP SI86GA1000) will be replaced with a new 8-inch sewer to convey the diverted Houghtailing Basin flow plus flow from the Aupuni Basin. Installation of this new pipe will meet minimum City design standards.

6. REQUIRED PERMITS AND APPROVALS

The following permits and approvals may be required for the proposed project:

6.1. Federal

U.S. Army Corps of Engineers Clean Water Act Section 404 permit

6.2. State of Hawaii

National Pollutant Discharge Elimination System General or Individual Permit
(e.g., Discharges of construction dewatering effluent)

Community Noise Permit

Community Noise Variance

Clean Water Act Section 401 Water Quality Certification

Stream Channel Alterations and Diversion Works Permit

Conformance with Accessibility Guidelines

6.3. City and County of Honolulu

Building Permit

Permit to Excavate a Public Right-of-Way/Trenching Permit

Erosion Control Plan/Best Management Practices

Repaving Plan

Street Usage Permit

Construction Dewatering Permit (Temporary)

Permit to Discharge Effluent (Non-Storm Water) (Temporary)

Detour Plans/Traffic Control Plans

Right-of-Entry Approvals: To be obtained prior to access of sewer easements.

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7. AGENCY DETERMINATION

The City DDC has made a FONSI determination for the proposed project. The proposed sewer rehabilitation project will not have a significant impact based on the criteria set forth in the State Department of Health Rules, Chapter 200, Title 11, Section 12. The proposed project's relationship to the criteria is discussed below.

- (1) *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;*

Completion of the proposed sewer rehabilitation project would involve an irrevocable commitment of labor, capital, and materials. No loss or destruction of natural or cultural resources is anticipated.

- (2) *Curtails the range of beneficial uses of the environment;*

The proposed project would improve the maintainability and capacity of the existing sewer system in the project area and correct existing structural problems. Enhancing sewer service in the system collection area would have long-term favorable effects by preventing failures that would adversely affect the environment and public safety, and therefore the proposed project would contribute to increased environmental quality.

- (3) *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

The proposed project is consistent with the environmental policies, goals and guidance set forth in Chapter 344, HRS. The proposed sewer rehabilitation project would upgrade the sewer system in the project area with the design intent of minimizing impacts to surrounding resources.

- (4) *Substantially affects the economic or social welfare of the community or state;*

The proposed project is anticipated to have short-term beneficial economic impacts due to the hiring of construction workers and the purchasing of materials. Short-term negative impacts or inconveniences (e.g., air quality impacts, increases in ambient noise levels, and traffic disruptions) may occur to residents and surrounding businesses and institutions during construction of the proposed project, and would be minimized through the application of appropriate mitigation measures and BMPs, as appropriate. In the long-term, the project would have

positive economic effects through the avoidance of additional maintenance and rehabilitation costs, and the social welfare of the residents and tenants within the Houghtailing Street Area would benefit by maintaining the sewer system in sound condition.

(5) *Substantially affects public health;*

Public health would not be adversely affected by the proposed project. The proposed sewer rehabilitation project would provide positive, long-term public health benefits to residents, businesses, and institutions in the sewer system collection area by implementing measures that would prevent sewer system failures.

(6) *Involves substantial secondary impacts, such as population changes or effects on public facilities;*

No substantial secondary impacts are anticipated given that the proposed project primarily involves the rehabilitation and replacement of existing sewer pipes and manholes with similar sized components, as well as the construction of a few new underground sewer pipes and manholes in order to divert flows within the project area and serve the present land uses in the Houghtailing Street Area. The proposed sewer rehabilitation project would serve to correct existing structural problems and improve the maintainability and capacity of the existing sewer system in the project area, successfully avoiding future maintenance problems and eliminating surcharge conditions.

(7) *Involves a substantial degradation of environmental quality;*

The proposed sewer rehabilitation project is not anticipated to involve a substantial degradation of environmental quality. Short-term impacts to air and water quality, ambient noise levels, and traffic operations may occur during construction of the proposed project. Environmental impacts that may be incurred as a result of construction activities would be mitigated for through the implementation of BMPs, as appropriate. Once completed, the project would contribute to increased environmental quality.

(8) *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;*

The proposed project would meet the existing and future needs of the sewer system within the project area. Additionally, the proposed project primarily involves the rehabilitation and replacement of existing sewer pipes and manholes, which serve the present land uses in the Houghtailing Street Area.

The construction of a few new underground sewer pipes and manholes would be required in order to divert flows within the project area, and would serve the present land uses in the Houghtailing Street Area. Therefore, the project would have no foreseeable cumulative impacts and does not involve a commitment for larger actions.

- (9) *Substantially affects a rare, threatened, or endangered species, or its habitat;*

There are no known proposed, candidate, or listed threatened or endangered species present within the project area.

- (10) *Detrimentially affects air or water quality or ambient noise levels;*

Short-term impacts to air quality, water quality and ambient noise levels may occur during construction of the proposed project. Environmental impacts will be mitigated for through proper construction techniques and compliance with applicable State DOH rules and regulations.

- (11) *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;*

The project area is not situated within an environmentally sensitive area and is not anticipated to affect such areas.

- (12) *Substantially affects scenic vistas and view planes identified in county or state plans or studies; or*

The project area is identified as being within the orientation of major panoramic views, broad vistas from distant vantage points, by the *Primary Urban Center Development Plan* (June 2004). The project area is within panoramic views oriented from the Honolulu Harbor and Ala Moana areas to the foothills of the Koolau Mountain Range. However, given that the proposed project would involve the rehabilitation and replacement of underground sewer system components and would not result in the placement of any permanent aboveground structures, the completed project would not detract from views of the Koolau Mountain Range foothills. Due to the nature of the proposed project, the completed project would not have an effect on any additional scenic vistas or viewplanes.

(13) *Requires substantial energy consumption.*

Completion of the proposed sewer rehabilitation project is not anticipated to increase energy consumption, as the proposed project represents a continuation of the current use of the sewer system in the project area.

8. CONSULTATION

8.1. Pre-Assessment Consultation

The following agencies, organizations, and individuals were consulted during the preparation of the Draft EA. A total of 14 of these parties formally replied during the pre-assessment period, as indicated by the √ below. Comments and responses are reproduced herein (Appendix B). One agency responded with a phone call during the pre-assessment period with no comments, as indicated by the X below.

One individual obtained a copy of the pre-assessment consultation letter submitted to Senator Suzanne Chun Oakland of the 13th Senatorial District during the preparation of the Draft EA. This individual, a Pro-Tech Termite and Pest Control employee, provided the following comments for consideration in the proposed project: the potential for ground termites to create holes in the new, proposed PVC pipe unless certain termite control measures are taken; and consideration of adobe clay soils in the project area and its potential affects on pipe joints under moist areas. It should be noted that the City will investigate these potential issues for consideration in the final design of the proposed project. The City will determine the type of new pipe to be used prior to construction, and specific soil types and potential issues will be addressed as a result of the geotechnical survey to be conducted within the project area in support of the design phase. The geotechnical survey is expected to be complete by January 2007.

Additionally, in order to consult with the community regarding the proposed project, The Limtiaco Consulting Group attended a Neighborhood Board No. 14, Liliha/Puunui/Alewa/Kamehameha Heights meeting held on March 13, 2006. The Limtiaco Consulting Group presented a description of the proposed project and its associated construction activities. Though comments were solicited from the project area residents and tenants, no comments as related to the Draft EA were received during the meeting. It is anticipated that any future comments and responses the project area residents and tenants may have regarding the proposed project will be given directly to the Neighborhood Board No. 14, and will be provided during the public review period of the Draft EA.

Federal Agencies

√ U.S. Army Corps of Engineers

State of Hawaii

Department of Business, Economic Development & Tourism, Office of Planning

- Department of Land & Natural Resources, Land Division
- √ Department of Land & Natural Resources, Historic Preservation Division
- Department of Health, Environmental Planning Office
- Department of Health, Environmental Management Division
- Department of Health, Environmental Management Division, Clean Air Branch
- √ Department of Health, Environmental Management Division, Wastewater Branch
- √ Department of Health, Environmental Management Division, Clean Water Branch
- X Department of Health, Environmental Management Division, Safe Drinking Water Branch
- Department of Health, Environmental Health Services Division
- √ Department of Health, Environmental Health Services Division, Noise, Radiation and Indoor Air Quality Branch
- √ Office of Hawaiian Affairs
- Senator Suzanne Chun Oakland, 13th Senatorial District
- Representative Corinne W.L. Ching, 27th Representative District

City and County of Honolulu

- √ Department of Planning and Permitting
- √ Department of Parks and Recreation
- √ Department of Facility Maintenance
- √ Department of Transportation Services
- √ Board of Water Supply
- City Councilmember Rod Tam, District 6
- Neighborhood Board No. 14, Liliha/Puunui/Alewa/Kamehameha Heights

Utilities

- √ Hawaiian Telcom (formerly Verizon Hawaii Inc.)
- √ Hawaiian Electric Company, Inc.
- Oceanic Time Warner Cable
- √ The Gas Company

Other Interested Parties

Kamehameha Schools Bishop Estates

8.2. Draft Environmental Assessment Consultation

The following agencies and interested parties were consulted during the public review period of the Draft EA. A total of twelve (12) comment letters were received from parties, as indicated with a ✓ below. All comment letters along with responses are reproduced herein (Appendix C).

Federal Agencies

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries Service)
U.S. Environmental Protection Agency, Region IX, Pacific Islands Contact Office

State of Hawaii

Department of Accounting and General Services
Department of Business, Economic Development and Tourism
Department of Business, Economic Development and Tourism, Office of Planning
✓ Department of Health, Environmental Planning Office (3 hardcopies)
✓ Department of Health, Office of Environmental Quality Control (2 hardcopies and 1 electronic copy [PDF version])
Department of Land and Natural Resources (5 hardcopies)
✓ Department of Land and Natural Resources, Historic Preservation Division
✓ Office of Hawaiian Affairs
Senator Suzanne Chun Oakland, 13th Senatorial District
Representative Corinne W.L. Ching, 27th Representative District

City and County of Honolulu

✓ Board of Water Supply
✓ Department of Planning and Permitting (5 hardcopies)
✓ Department of Facility Maintenance
✓ Department of Transportation Services
Department of Environmental Services
✓ Fire Department
✓ Police Department
City Councilmember Rod Tam, District 6
Neighborhood Board No. 14, Liliha/Puunui/Alewa/Kamehameha Heights

Utilities

Hawaiian Telcom (formerly Verizon Hawaii Inc.)
✓ Hawaiian Electric Company, Inc.
Oceanic Time Warner Cable
✓ The Gas Company

Other Interested Parties

Kamehameha Schools Bishop Estates

Libraries and Repositories

Hawaii State Library, Hawaii Documents Center (2 hardcopies)

Kalihi-Palama Public Library

Legislative Reference Bureau

Library, Honolulu Department of Customer Services (formerly Municipal Reference and Records Center)

8.3. Final Environmental Assessment Distribution

The following agencies and interested parties will be provided copies of the Final EA.

Federal Agencies

U.S. Army Corps of Engineers
U.S. Environmental Protection Agency, Region IX, Pacific Islands Contact Office

State of Hawaii

Department of Health, Environmental Planning Office
Department of Health, Office of Environmental Quality Control (2 hardcopies and 1 electronic copy [PDF version])
Department of Land and Natural Resources, Historic Preservation Division
Office of Hawaiian Affairs
Senator Suzanne Chun Oakland, 13th Senatorial District
Representative Corinne W.L. Ching, 27th Representative District

City and County of Honolulu

Board of Water Supply
Department of Planning and Permitting
Department of Facility Maintenance
Department of Transportation Services
Department of Environmental Services
Fire Department
Police Department
City Councilmember Rod Tam, District 6
Neighborhood Board No. 14, Liliha/Puunui/Alewa/Kamehameha Heights

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Kamehameha Schools Bishop Estates

Libraries and Repositories

Hawaii State Library, Hawaii Documents Center (2 hardcopies)
Kalihi-Palama Public Library

Legislative Reference Bureau
Library, Honolulu Department of Customer Services (formerly Municipal Reference and Records
Center)

9. REFERENCES

City and County of Honolulu, Department of Planning and Permitting. *Geographic Information System Database*.

City and County of Honolulu, Department of Planning and Permitting. *Primary Urban Center Development Plan*. June 2004.

Eugene P. Dashiell, AICP, Environmental Planning Services. *Final Environmental Assessment, Nuhelewai Stream Improvements, City and County of Honolulu*. Prepared for City and County of Honolulu, Department of Design and Construction. March 2005.

State of Hawaii, Department of Business, Economic Development & Tourism, Office of Planning. *Hawaii Statewide Geographic Information System*.

State of Hawaii, Department of Health, Clean Air Branch. *2003 Annual Summary, Hawaii Air Quality Data*.

State of Hawaii, Department of Health, Clean Air Branch. *2004 Annual Summary, Hawaii Air Quality Data*.

State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management. *Hawaii Stream Assessment*. December 1990.

State of Hawaii, Department of Health, Environmental Planning Office. *Final 2004 List of Impaired Waters in Hawaii Prepared Under Clean Water Act § 303(d)*. June 16, 2004.

Stearns, Harold T. *Geology of the State of Hawaii, Second Edition*. 1985.

The Limtiaco Consulting Group. *Houghtailing Street Area Sewer Rehabilitation, Final Design Alternatives Report, Contract No. F32965, Project No. 20004089*. Prepared for the City and County of Honolulu, Department of Design and Construction. September 2006.

United States of America, and State of Hawaii, by Robert A. Marks, Its Attorney General, and Peter A. Sybinsky, Ph.D., Director of Health, State of Hawaii, Plaintiffs, vs. City and County of Honolulu, Defendant. Consent Decree, Civil No. 94-00765 DAE. United States District Courts, District of Hawaii. Lodged October 3, 1994.

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

U.S. Federal Emergency Management Agency. *Flood Insurance Rate Map, Community Panel Number 150001 0354 F.* Map Revised September 30, 2004

APPENDIX A
HOUGHTAILING STREET AREA SEWER REHABILITATION PROJECT
INFORMATION FLYER

Houghtailing Street Area Sewer Rehabilitation

Announcement for Field Investigations
Tentatively Scheduled for October – December 2004

The Sewer Collection System

Together with the City and County of Honolulu, The Limtiaco Consulting Group is working to improve your sewer system! Based on age and pipe condition, the sewer collection system in your area was chosen for investigation and rehabilitation. The project limits are outlined by four boundaries: Alewa Heights, Kamehameha Shopping Center, Kamehameha Schools and North School Street. The City owned and operated sewer system is more than 80 years old in some areas – well beyond its projected useful life. In total, the project area includes more than 42,000 feet or approximately 8 miles of pipe and consists of 327 manholes.

Why Is Sewer Rehabilitation Needed?

The Houghtailing Street area sewer system was constructed as early as the 1920's and is deteriorating at various locations. To maintain a high level of service to the residents, the City needs to investigate and rehabilitate these pipes to repair blockages, avoid sewer spills and protect human health.

How Does This Affect You?

The first phase of the rehabilitation process is to investigate the sewer to identify problem areas. During this phase, contractors and City crews will be in your neighborhood to clean and inspect the sewer system. This will require occasional lane closures and access to the sewer, including sewers within private properties (the City holds sewer easements in these instances). Our project team will do its best to inform affected residents prior to entry and will respect your property. This investigation will help to identify defective sewers.



sewer inspection crews at work



topographic survey

The second phase of work is to survey areas targeted for rehabilitation. During this phase, survey crews will be collecting topographic data to be used for design drawings. This phase of work will also require field crews, but only at specific locations selected for rehabilitation. No street closures are anticipated for this phase.

The last phase (after planning and design) will be the construction phase, but this will occur during 2006, at the earliest. Please note that only deficient sewers will be targeted for construction. It is not the City's intent to replace the entire sewer system.

When Will This Occur?

The sewer investigations are tentatively scheduled to begin in late October 2004 and will last approximately two months. The topographic survey will occur after initial investigations, approximately March 2005. In both cases, majority of the fieldwork will be scheduled between the hours of 8:00 am and 5:00 pm on weekdays.

Questions?

If you have any questions about this project, please contact John Katahira of The Limtiaco Consulting Group at 596-7790 or Sung Ho Lai of the City and County of Honolulu Department of Design & Construction, Wastewater Division at 527-5398. We also plan to make future project announcements at your monthly neighborhood board meetings.

Mahalo for your cooperation during this sewer improvement project.

APPENDIX B
PRE-ASSESSMENT CONSULTATION CORRESPONDENCE



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

March 6, 2006

Regulatory Branch

File No. POH-2006-115

Mr. John Katahira, P.E.
Project Engineer
The Limtiaco Consulting Group
650 Iwilei Road, Suite 208
Honolulu, HI 96817

Dear Mr. Katahira:

This responds to your request for written comments for a draft Environmental Assessment (dEA) which will address activities and impacts of the proposed Rehabilitation Sewer Project, Houghtailing Street Area, Oahu Island.

The dEA should indicate whether waters of the United States, as represented by perennial or intermittent streams, and wetlands are in, or adjacent to, or absent from, the proposed project area. The dEA should state in appropriate sections that there is, or no potential for waters of the U.S., such as Kapalama Stream and its tributaries, to be impacted by construction of project structures and associated ground disturbing activities within the proposed improvement area. Upon our receipt of the dEA, it may then be determined whether a Department of Army (DA) permit for Section 404 activities of the Clean Water Act may, or may not be, required for the proposed project.

Thank you for your consideration of potential impacts to the aquatic environment of the Kalihi-Palama watershed. Should you have any questions or need additional information, please contact Mr. Farley Watanabe of my staff at 438-7701, or by facsimile at 438-4060. Please reference the file number above in any future correspondence with us regarding this project.

Sincerely,

A handwritten signature in black ink, appearing to read "George P. Young".

George P. Young, P.E.
Chief, Regulatory Branch



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

George P. Young, P.E., Chief
U.S. Army Corps of Engineers
Honolulu District
Regulatory Branch, CEPOH-EC-R
Building 230
Fort Shafter, Hawaii 96858-5440

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Young,

Thank you for your letter dated March 6, 2006 regarding the subject proposed sewer rehabilitation (File No. POH-2006-115). As requested, Section 3.6 of the forthcoming Draft Environmental Assessment (EA) indicates whether waters of the United States, including wetlands, are present within or adjacent to the project area. Additionally, per your request, a detailed discussion of the construction activities associated with the subject project and whether or not there is potential for waters of the United States, including wetlands, to be impacted by such construction activities is provided in this same section of the forthcoming Draft EA. It is acknowledged that upon your receipt of the forthcoming Draft EA, it may be better determined by the U.S. Army Corps of Engineers whether a U.S. Army Corps of Engineers Clean Water Act Section 404 permit will be required for the subject project.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 10, 2006

Mr. Eugene Lee
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawai'i 96813

LOGNO: 2006.0924
DOC NO: 0603CM112
Archaeology

Dear Mr. Lee:

**SUBJECT: Chapter 6E-8 Historic Preservation Review [City & County] –
Houghtailing Street Sewer Area Rehabilitation (Pre-Assessment for Draft EA)
Kapālama and Nu‘uanu Ahupua‘a, Honolulu [Kona] District, Island of O‘ahu
TMK: (1) 1-6-011 to 020, 1-6-027, 1-8-034 and 035: various parcels**

Thank you for the opportunity to comment on the aforementioned project. We received your documents, including a brief cover letter and enclosures, on March 7, 2006. This project is currently in the “pre-assessment” phase for preparation of an environmental assessment. Our review is based on records available at the State Historic Preservation Division (SHPD). No site inspection was conducted.

According to your documents, the project consists of the replacement and/or rehabilitation of approximately 42,289 linear feet of sewer line, ranging from 6-inch to 30-inch diameter pipes, and 311 manholes.

According to our records, no archaeological inventory survey with subsurface testing has been conducted within the project area; however, in general, there is a relatively low probability of encountering historically-significant sites. Most of the project area has been grubbed and graded during previous development. Subsurface testing (excavation) in the Kapalama Stream valley just north of the project area yielded alluvial deposits (stream-deposited sediments) but no historically-significant materials (*Archaeological Testing in the Keanakamanō Valley Phase 2, Development Parcel and Archaeological Surface Assessment of the Upper Valley, Kapālama, Kona, O‘ahu, Rogers-Jourdane 1988, SHPD Rpt. No. O-508*).

There are two areas in particular that may yield historically-significant sites, including unmarked burials. First, there is a group of three cemeteries (Ka‘ahumanu, Maluhia, and Puea) located within the project area, at the intersection of North School Street and Kapalama Avenue. And second, there is a second cemetery (Pu‘ukamali‘i, also known as Kalaepohaku) located along the boundary of the project area, at Kamali‘i Street. All excavations conducted in the vicinity of these cemeteries should be monitored by a qualified archaeologist. It is not uncommon for additional, unmarked burials to be located outside of the established boundaries of cemeteries. For these reasons, we recommend you hire a qualified archaeologist to draft an archaeological monitoring plan for this project.

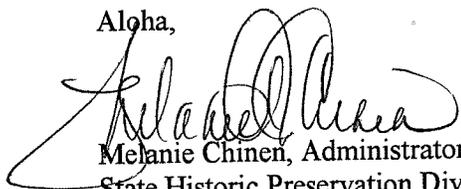
We recommend the following conditions be included in the Monitoring Plan:

1) A qualified archaeological monitor shall be present during all ground-altering activities conducted in *specified portions* of the project area in order to document any historic properties which may be encountered during the proposed undertaking and to provide mitigation measures as necessary. An acceptable archaeological monitoring plan will need to be submitted to the SHPD for review, prior to the commencement of any ground-altering activities. An archaeological monitoring plan must contain the following nine specifications: (1) The kinds of remains that are anticipated and where in the construction area the remains are likely to be found; (2) How the remains and deposits will be documented; (3) How the expected types of remains will be treated; (4) The archaeologist conducting the monitoring has the authority to halt the construction in the immediate area of the find in order to carry out the plan; (5) A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan; (6) What laboratory work will be done on remains that are collected; (7) A schedule of report preparation; (8) Details concerning the archiving of any collections that are made; and (9) An acceptable report documenting the findings of the monitoring activities shall be submitted to the SHPD for review following completion of the proposed undertaking.

2) The SHPD shall be notified via facsimile upon the on-set and completion of the proposed undertaking.

Please call Dr. Chris Monahan at 808-692-8015 if you have any questions about this letter.

Aloha,



Melanie Chinen, Administrator
State Historic Preservation Division

CM

c: M. John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Ms. Melanie Chinen, Administrator
State of Hawaii
Department of Land and Natural Resources
Historic Preservation Division
601 Kamokila Boulevard, Suite 555
Kapolei, Hawaii 96707

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Ms. Chinen,

Thank you for your letter dated April 10, 2006 regarding the subject proposed sewer rehabilitation project. It is acknowledged that there is a relatively low probability of encountering historically-significant sites within the project area during construction activities. However, the subject project will involve the use of open cut trenching for construction of some of the proposed sewer system improvements and there is potential for cemeteries within and adjacent to the project area to yield historically-significant sites, including unmarked burials located outside the boundaries of the known cemeteries. Therefore, per your recommendation, a qualified archeological monitor will be hired and an acceptable archeological monitoring plan for the subject project will be submitted to your office for review, prior to the commencement of any ground-altering activities. All of your written comments have been incorporated and addressed in Section 3.12 of the forthcoming Draft Environmental Assessment

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME LEINAALA FUKINO, M.D.
DIRECTOR OF HEALTH

**STATE OF HAWAII
DEPARTMENT OF HEALTH**

P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:

LUD - O1 6 011 etc.wpd
D:W13 wb60308

March 17, 2006

Mr. John Katahira
Project Manager
The Limtiaco Consulting Group
650 Iwilei Road, Suite 208
Honolulu, Hawaii 96817

Dear Mr. Katahira:

Subject: **Pre-Assessment Consultation, Draft Environmental Assessment**
Houghtailing Street Area Sewer Rehabilitation, Honolulu, Oahu
TMK: (1) 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035

Thank you for allowing us the opportunity to provide comments to the subject sewer rehabilitation project. We have the following comments and information on the above subject property:

We are always in favor of sewer rehabilitation and improvements which will better service our communities. Therefore, we have no objections to the proposed plan and concur with the replacement and/or rehabilitation and system improvements stated.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at telephone 586-4294.

Sincerely,

HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

c: Mr. Eugene Lee, Dept. of Design & Construction, City & County of Honolulu



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Harold Yee, P.E., Chief
State of Hawaii
Department of Health
Wastewater Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Yee,

Thank you for your letter dated March 17, 2006 indicating that you concur with and have no objections regarding the subject proposed sewer rehabilitation project (File: LUD-O1 6 011 etc.wpd D:W13 wb60308). It is acknowledged that due to the nature of the subject project, conformance with the applicable provisions of the Administrative Rules of the State Department of Health (DOH), Title 11, Chapter 62, "Wastewater Systems" is necessary. Additionally, it is understood that the State DOH, Wastewater Branch reserves the right to review the wastewater plans associated with the subject project for conformance with the applicable rules.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD / CWB

03054PKP.06

March 13, 2006

Mr. Eugene Lee
Deputy Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Lee:

**Subject: Pre-Assessment Consultation, Draft Environmental Assessment
Houghtailing Street Area Sewer Rehabilitation, Honolulu, Oahu**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of the subject document, dated March 1, 2006. The CWB has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.
2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).
 - a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.

- b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.
- i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B]
 - ii. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C]
 - iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]
 - iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]
 - v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]
 - vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]
 - vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]
 - viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]
 - ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]
 - x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]
 - xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]

Mr. Eugene Lee
March 13, 2006
Page 3

3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.
4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

The Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this Chapter, or a permit or variance issued by the director."

If you have any questions, please contact Mr. Alec Wong, Supervisor of the Engineering Section, CWB, at 586-4309.

Sincerely,



DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:np

c: Mr. John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Denis R. Lau, P.E., Chief
State of Hawaii
Department of Health
Clean Water Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Lau,

Thank you for your letter dated March 13, 2006 regarding the subject proposed sewer rehabilitation project (EMD/CWB 03054PKP.06). The following items are offered in response to your written comments:

1. In a letter dated March 6, 2006 (included in Appendix B of the forthcoming Draft Environmental Assessment (EA), the U.S. Army Corps of Engineers stated that upon receipt of the forthcoming Draft EA, it may be better determined whether a U.S. Army Corps of Engineers Clean Water Act Section 404 permit will be required for the subject project. It is understood that pursuant to the Clean Water Act Paragraph 401(a)(1), a Section 401 water quality certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...". Therefore, if a U.S. Army Corps of Engineers Clean Water Act Section 404 permit is required for the subject project, a Section 401 water quality certification will be obtained.
2. It is recognized that in accordance with Hawaii Administrative Rules, Section 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES). Should dewatering activities be necessary for the subject project (geotechnical investigations to be performed during and in support of the subject project's design phase will determine whether ground-water is likely be encountered within the project area), a NPDES general or individual permit for discharges of construction dewatering effluent will be required. However, a NPDES general or individual permit for discharges composed entirely of storm water runoff associated with construction activities that result in the disturbance of one acre or more of total land area will be required for the subject project. The NPDES permit has been incorporated and addressed in Sections 3.5 and 3.10 of the forthcoming Draft EA.
3. The State Department of Land and Natural Resources, Historic Preservation Division (SHPD) has been contacted regarding the subject project. The SHPD provided a comment letter dated April 10, 2006 (included in Appendix B of the forthcoming Draft EA) regarding the subject proposed sewer rehabilitation project. The SHPD's comments have been incorporated and addressed in Section 3.12 of the forthcoming Draft EA.
4. It is acknowledged that any discharges related to the subject project's construction or operation activities shall comply with the applicable State Water Quality Standards as

Mr. Lau
May 22, 2006
Page 2

specified in the Hawaii Administrative Rules of the State Department of Health, Title 11,
Chapter 54.

Your participation in the pre-assessment consultation phase of the environmental review process
is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

A handwritten signature in black ink, appearing to read "John H. Katahira". The signature is fluid and cursive, with a long horizontal stroke at the end.

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. William Wong, Chief
State of Hawaii
Department of Health
Safe Drinking Water Branch
919 Ala Moana Boulevard, Room 308
Honolulu, Hawaii 96814

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Wong,

Thank you for your phone call on March 13, 2006 indicating that you have no comments regarding the subject proposed sewer rehabilitation project at this time. Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME LEINAALA FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH

P.O. Box 3378
HONOLULU, HAWAII 96801-3378

March 22, 2006

In reply, please refer to:
File: EHSD/NRIAQ

Mr. John Katahira
Project Manager
The Limtiaco Consulting Group
650 Iwilei Road, Suite 208
Honolulu, Hawaii 96817

Dear Mr. Katahira:

**SUBJECT: Comments to the Pre-Assessment Consultation, Draft Environmental Assessment
Houghtailing Street Area Sewer Rehabilitation, Honolulu, Oahu
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035**

Our comments should be printed as follows:

“Project activities shall comply with the Administrative Rules of the Department of Health:

- Chapter 11-46 Community Noise Control.

Should there be any questions, please contact me at 586-4701.

Sincerely,

Russell S. Takata
Program Manager
Noise, Radiation & IAQ Branch



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Russell Takata, Program Manager
State of Hawaii
Department of Health
Noise, Radiation and Indoor Air Quality Branch
P.O. Box 3378
Honolulu, Hawaii 96801-3378

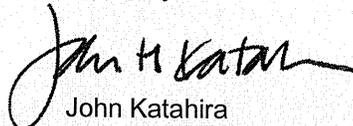
Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Takata,

Thank you for your letter dated March 22, 2006 regarding the subject proposed sewer rehabilitation project (File: EHSD/NRIAQ). Your written comment item has been incorporated and addressed in Section 3.11 of the forthcoming Draft Environmental Assessment, which discusses the subject project's compliance with the provisions of the Administrative Rules of the State Department of Health, Title 11, Chapter 46, "Community Noise Control" noise regulations.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,


John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD06/2296

March 13, 2006

Eugene Lee
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

RE: Pre-Draft Environmental Assessment for the Proposed Houghtailing Street Area Sewer Rehabilitation, Honolulu, O'ahu, TMK: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035.

Dear Mr. Lee,

The Office of Hawaiian Affairs (OHA) is in receipt of your March 1, 2006 request for comment on the above listed proposed project. OHA offers the following comments:

Due to the limited amount of information found in the pre-assessment consultation letter, our staff has opted to hold our comments until we receive the Draft Environmental Assessment. Thank you for your correspondence.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,


Clyde W. Nāmu'o
Administrator

CC: ✓ John Katahira
The Limitiaco Consulting Group
650 Iwilei Road, Suite 208
Honolulu, HI 96817



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Clyde Namuo, Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

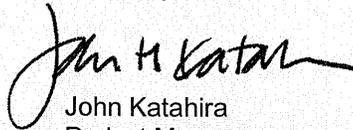
Dear Mr. Namuo,

Thank you for your letter dated March 13, 2006 indicating that you have opted to hold your comments regarding the subject proposed sewer rehabilitation project at this time, until your receipt of the forthcoming Draft Environmental Assessment (EA). As requested, work will cease immediately in the vicinity of any historic remains encountered during construction activities conducted in association with the subject project and the State Historic Preservation Division shall be contacted. This written comment has incorporated and addressed in Section 3.12 of the forthcoming Draft EA.

Furthermore, it should be noted that, the State Department of Land and Natural Resources, Historic Preservation Division (SHPD) has been contacted regarding the subject project. The SHPD provided a comment letter dated April 10, 2006 (included in Appendix B of the forthcoming Draft EA) regarding the subject proposed sewer rehabilitation project. The SHPD's comments and recommendations have been incorporated and addressed in Section 3.12 of the forthcoming Draft EA.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,



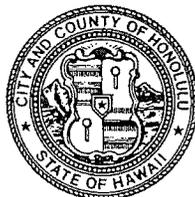
John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. WEB SITE: www.honoluluodpp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR



HENRY ENG, FAICP
DIRECTOR

DAVID K. TANQUE
DEPUTY DIRECTOR

06WWB023 (SG)
2006/ELOG-484

March 21, 2006

MEMORANDUM

TO: EUGENE C. LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: SUNG HO LAI
WASTEWATER DIVISION

FROM: *Dennis M. Nishimura*
For HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: PRE-ASSESSMENT CONSULTATION
HOUGHTAILING STREET AREA SEWER REHABILITATION
DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

This is in response to The Limtiaco Consulting Group's letter dated March 1, 2006, requesting comments for the proposed Houghtailing Street Area Sewer Rehabilitation DEA. We have reviewed the project and have the following comments:

1. The DEA should discuss how the proposed project supports the City's General Plan and the Primary Urban Center Development Plan.
2. The DEA should disclose what projects (housing, commercial, etc.) could be supported with the enhanced capacity, and the general location of such developments, if any.
3. Include a list of any land use permits/approvals that may be required.
4. Include costs, sources of funding, project phasing and timeframe for completion.
5. Discuss alternatives for the proposed project that were considered.

If you have any questions, please contact Mr. Scott Gushi of the Wastewater Branch at 523-4886.

HE:dl
[436775]

cc: Mr. Jon Katahira, The Limtiaco Consulting Group, Inc.



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Henry Eng, Director
City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Eng,

Thank you for your letter dated March 21, 2006 regarding the subject proposed sewer rehabilitation project. The following items are offered in response to your written comments:

1. This written comment item has been incorporated and addressed in Sections 4.3 and 4.4 of the forthcoming Draft Environmental Assessment (EA), which discusses the subject project's relationship to the City and County of Honolulu General Plan and the Primary Urban Center Development Plan.
2. Regarding your comment item #2, the subject project is intended to support the existing and future needs of the sewer system within the project area based on existing uses and is not anticipated to support any potential new or future development projects (housing, commercial, etc.).
3. Section 6 of the forthcoming Draft EA provides a list of the permits and approvals that may be required for the subject proposed sewer rehabilitation project.
4. This written comment item has been incorporated and addressed in Section 2.7 of the forthcoming Draft EA, which discusses the subject project's schedule and construction cost, including sources of funding.
5. A discussion of the alternatives for the proposed project that were considered has been incorporated and addressed in Section 5 of the forthcoming Draft EA.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

March 15, 2006

TO: EUGENE LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: LESTER K. C. CHANG, DIRECTOR

SUBJECT: PRE-ASSESSMENT CONSULTATION, DRAFT ENVIRONMENTAL
ASSESSMENT, HOUGHTAILING STREET AREA SEWER
REHABILITATION TAX MAP KEYS 1-6-011 TO 1-6-020, 1-6-027, 1-8-034
TO 1-8-035

On behalf of the Department of Design and Construction, The Limtiaco Consulting Group has requested our Pre-Assessment Consultation comments on the Houghtailing Street Area Sewer Rehabilitation Project.

The Department of Parks and Recreation has no comment on the project. As it will not directly impact any program or facility of the department, you are invited to remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.



LESTER K. C. CHANG
Director

LKCC:mk
(143526)

cc: John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Lester K.C. Chang, Director
City and County of Honolulu
Department of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, Hawaii 96707

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Chang,

Thank you for your letter dated March 15, 2006 indicating that you have no comments regarding the subject proposed sewer rehabilitation project. Per your request, given that the subject project will not directly impact any Department of Parks and Recreation program or facility, we will remove the department as a consulted entity from the remainder of the environmental review process.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

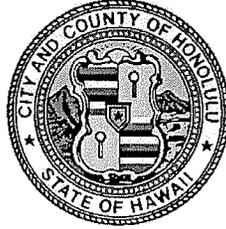


John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

DIVISION OF ROAD MAINTENANCE
99-999 IWAENA STREET, AIEA, HAWAII 96701
TELEPHONE: (808) 484-7600 FAX: (808) 484-7633



MUFI HANNEMANN
MAYOR

LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE K. MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 06-242

March 21, 2006

MEMORANDUM

TO: EUGENE C. LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: *Laverne Higa*
LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

SUBJECT: **PRE-ASSESSMENT CONSULTATION, DRAFT ENVIRONMENTAL ASSESSMENT
HOUGHTAILING STREET AREA SEWER REHABILITATION, HONOLULU, OAHU
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034 TO 1-8-035**

We request your consideration in reducing the amount of open cut trenching and explore other options such as directional borings in lieu of open cut trenching. In those locations where there is no other alternative to open cut trenching, we request that you use flowable fill or controlled low strength material as backfill material.

Should you have any questions, please contact Larry Leopardi, Chief of the Division of Road Maintenance, at 484-7600.

cc: Limtiaco Consulting Group
 Attn: John Katahira



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Ms. Laverne Higa, P.E., Director and Chief Engineer
City and County of Honolulu
Department of Facility Maintenance
1000 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Ms. Higa,

Thank you for your letter dated March 21, 2006 regarding the subject proposed sewer rehabilitation project (DRM 06-242). The majority of the proposed sewer system improvements within the project area will utilize construction methods that do not require excavation or trenching activities, namely the use of cured-in-place pipe (CIPP) lining. Per your request, open cut trench construction has been kept to a minimum. The use of open cut trenching will and must be employed where CIPP lining does not adequately address the existing sewer system deficiencies. For those locations where open cut trenching methods will be utilized, the use of flowable fill or controlled low strength material as backfill material will be considered during the design phase of the subject project. It is acknowledged that the use of such materials would be suitable; however, the determination as to whether or not these materials can be used in construction of the subject project will ultimately be based on the cost-effectiveness and construction budget constraints.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

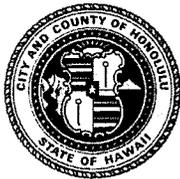
John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4529 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



MELVIN N. KAKU
ACTING DIRECTOR

ALFRED A. TANAKA, P.E.
DEPUTY DIRECTOR

TP3/06-143511R

March 22, 2006

MEMORANDUM

TO: EUGENE LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: MELVIN N. KAKU, ACTING DIRECTOR

SUBJECT: HOUGHTAILING STREET AREA SEWER REHABILITATION

Thank you for the March 1, 2006 letter from The Limitiaco Consulting Group, requesting our comments on the subject project. We would like to offer the following comments for your consideration as you prepare the draft environmental assessment (EA):

1. The draft EA should address and discuss the traffic impacts of the project on the City street network during construction. Mitigation measures proposed to minimize the impact of the project on City transportation facilities should also be discussed.
2. Traffic control plans should be prepared for each phase of construction work. In order to minimize traffic impacts, project construction should be phased to ensure that work scheduled for a certain day can be started and completed during the same work day. Limiting construction work to off-peak daytime hours should be used as a means to further minimize traffic impacts on the surrounding neighborhood.
3. As a reminder, the following note should be included on future construction plans: The Contractor shall notify Oahu Transit Services, Inc. (OTS-TheBus contractor), Ed Sniffen (848-4571) or Lowell Tom (848-4578), two weeks prior to construction, informing them of location, scope of work, proposed closure of any street or traffic lanes, and the need to relocate any bus stops. The Contractor shall also notify OTS (TheHandiVan contractor), Art Loebel (454-5085) or John Black

Eugene Lee, Deputy Director

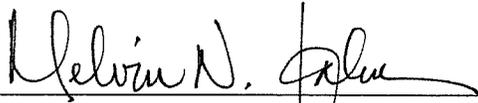
Page 2

March 22, 2006

(454-5041) two weeks prior to construction, informing them of location, scope of work, and proposed closures of any street or traffic lanes.

4. For your information, the Traffic Signal and Technology Division is currently working on a construction project along School Street. The project will install an overhead signal communication cable from intersection to intersection from Likelike Highway to Pali Highway. The Notice to Proceed for this project is anticipated to be issued in June 2006 and approximately three months of construction will be required.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at Local 6976.


MELVIN N. KAKU

cc: Mr. John Katahira, Project Manager
✓ The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Melvin N. Kaku, Acting Director
City and County of Honolulu
Department of Transportation Services
650 South King Street
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

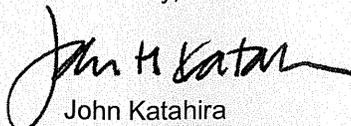
Dear Mr. Kaku,

Thank you for your letter dated March 22, 2006 regarding the subject proposed sewer rehabilitation project. The following items are offered in response to your written comments:

1. Section 3.14.1 of the forthcoming Draft Environmental Assessment (EA) discusses the subject project's potential impacts on City and County of Honolulu (City) roadways and traffic within the project area. Mitigation measures proposed to minimize potential impacts on traffic and existing City transportation facilities are also provided in this section of the forthcoming Draft EA.
2. Regarding your comment item #2, traffic control plans for the subject project will be prepared and a street usage permit will be obtained prior to the construction of the proposed sewer improvements. Additionally, construction work will be performed during daytime hours (as opposed to night work) when traffic volumes are generally low within the residential neighborhoods of the project area and minimal impacts to residents can be expected. This written comment item has been incorporated and addressed in Section 3.14.1 of the forthcoming Draft EA.
3. Per your request, Oahu Transit Services, Inc. (OTS) will be informed of the subject project schedule two weeks prior to the commencement of construction activities. Additionally, it is recognized that close coordination with OTS will be necessary to ensure minimal inconvenience to motorists and public transportation services. This written comment has incorporated and addressed in Section 3.14.1 of the forthcoming Draft EA.
4. It is acknowledged that the overhead signal communication cable project along North School Street, from the Likelike Highway intersection to the Pali Highway intersection, is anticipated to be constructed over an approximately 3-month period during the summer of 2006. However, construction activities associated with the subject project are not expected to begin until as early as January 2008.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

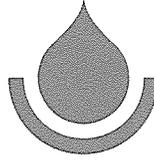

John Katahira
Project Manager

Mr. Kaku
May 22, 2006
Page 2

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



March 8, 2006

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK

RODNEY K. HARAGA, Ex-Officio
LAVERNE T. HIGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

Mr. John Katahira
The Limtiaco Consulting Group
650 Iwilei Road, Suite 208
Honolulu, Hawaii 96817

Dear Mr. Katahira:

Subject: Your Letter of March 1, 2006 on the Draft Environmental Assessment for the
Houghtailing Street Area Sewer Rehabilitation, TMK: 1-6-011 to 1-6-020, 1-6-027,
1-8-034 to 1-8-035

Thank you for the opportunity to comment on the proposed project.

The construction drawings should be submitted for our review and approval.

The construction schedule should be coordinated to minimize impact to the water system.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

KEITH S. SHIDA
Principal Executive
Customer Care Division



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Keith S. Shida, Principal Executive
City and County of Honolulu
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

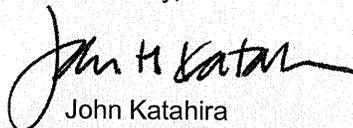
Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Shida,

Thank you for your letter dated March 8, 2006 regarding the subject proposed sewer rehabilitation project. Per your request, the construction drawings will be submitted for your review and approval and the construction schedule will be coordinated with the Board of Water Supply to minimize any possible impacts to the water system. Your comments have been incorporated and addressed in Section 3.14.2 of the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,



John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

April 14, 2006

Eugene Lee, Deputy Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Lee,

**Subject: Pre-Assessment Consultation, Draft Environmental Assessment
Houghtailing Street Area Sewer Rehabilitation, Honolulu, Oahu
Tax Map Keys Plat: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035**

Thank you for the opportunity to review your plans dated March 2006, and received on March 3, 2006. We have no comments to add to the design of this project for the sheets you have submitted at this time.

If you have any questions, please call Kenwynn Goo at 840-2967.

Sincerely,



Lynette Yoshida
Section Manager - Network Engineering and Planning

c: File (Kalihi)

K. Goo

L. Matsubara

✓ John Katahira, Project Manager, The Limitiaco Consulting Group, 650 Iwilei Road,
Suite 208, Honolulu, Hawaii 96817



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Ms. Lynette Yoshida, Section Manager
Hawaiian Telcom (formerly Verizon Hawaii, Inc.)
Network Engineering and Planning
1177 Bishop Street
Honolulu, Hawaii 96813

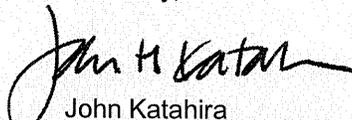
Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Ms. Yoshida,

Thank you for your letter dated April 14, 2006 indicating that you have no comments to add to the design of the subject proposed sewer rehabilitation project at this time. Please note that Hawaiian Telcom's facilities will be confirmed, and necessary adjustments will be made to avoid disturbance to the telephone system. Additionally, Hawaiian Telcom will be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases of the subject project. Please refer to Section 3.14.5 of the forthcoming Draft Environmental Assessment for more information.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,


John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch



March 28, 2006

Mr. Eugene Lee
Deputy Director
Dept. of Design & Construction
City & County of Honolulu
650 S. King Street - 11th Floor
Honolulu, HI 96813

Dear Mr. Lee:

**Re: Pre-Assessment Consultation, DEA
Houghtailing Street Area Sewer Rehabilitation
Honolulu, Oahu (TMKs: 1-6-011 to 1-6-20,
1-6-027, 01-8-034 to 1-8-035)**

Thank you for the opportunity to comment on the draft EA being prepared for the Houghtailing Street Area Sewer Rehabilitation project. We have reviewed the pre-assessment materials and have no comments or objections at this time.

Please continue to keep us informed as the project develops. In the event that our facilities or existing easements within the project area become affected, please forward two sets of plans for our review as soon as possible so that we may evaluate potential impacts. In the meantime, HECO will need continued access to our facilities for maintenance purposes.

Our point of contact for this project is Roy Noda, Principal Engineer, Structural Division, Engineering Department. Please feel free to deal directly with Roy (543-7067) to coordinate HECO's continuing input in this project.

Sincerely,

Kirk S. Tomita
Senior Environmental Scientist

cc: Mr. John Katahira
R. Noda





THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Kirk S. Tomita, Senior Environmental Scientist
Hawaiian Electric Company Inc.
PO Box 2750
Honolulu, Hawaii 96840

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Tomita,

Thank you for your letter dated March 28, 2006 indicating that you have no comments or objections regarding the subject proposed sewer rehabilitation project at this time. Per your request, Hawaiian Electric Company Inc. (HECO) will continue to be informed as the subject project develops. HECO's facilities will be identified during the design phase, and two sets of the construction plans for the proposed sewer rehabilitation project will be submitted for review. HECO will also be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases of the subject project. Additionally, it is recognized that HECO will need continued access to its facilities for maintenance purposes. Your comments have been incorporated and addressed in Section 3.14.5 of the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch



P.O. Box 3000
Honolulu, Hawaii 96802-3000

March 7, 2006

Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Attention: Mr. Eugene Lee
Deputy Director

Gentlemen:

Subject: Draft Environmental Assessment for
Houghtailing Street Area Sewer Rehabilitation

Please be advised that The Gas Company, LLC maintains underground utility gas mains in the project vicinity, which serves commercial and residential customers in the area and is interconnected with the utility network in Honolulu. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please call me at 594-5570.

Sincerely,

Charles E. Calvet, P.E.
Manager, Engineering

CEC:krs
06-124

cc: ✓ Mr. John Katahira, The Limtiaco Consulting Group



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

May 22, 2006

Mr. Charles Calvet, P.E., Manager
The Gas Company
Engineering Department
P.O. Box 3000
Honolulu, Hawaii 96802-3000

Subject: Pre-Assessment Consultation
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035
Honolulu, Oahu, Hawaii

Dear Mr. Calvet,

Thank you for your letter dated March 7, 2006 regarding the subject proposed sewer rehabilitation project. Per your request, The Gas Company's utility lines will be identified and any infrastructure conflicts or damage to the gas distribution system will be avoided. Additionally, The Gas Company will be notified of the construction schedule and coordination activities will be executed as appropriate throughout the design and construction phases of the subject project. Your comments have been incorporated and addressed in Section 3.14.5 of the forthcoming Draft Environmental Assessment.

Your participation in the pre-assessment consultation phase of the environmental review process is appreciated. Should you have any questions, please contact me at 596-7790.

Sincerely,

John Katahira
Project Manager

cc: Mr. Sung Ho Lai, City and County of Honolulu, Department of Design and Construction,
Wastewater Division, Planning Branch

APPENDIX C

DRAFT ENVIRONMENTAL ASSESSMENT COMMENTS AND RESPONSES

LINDA LINGLE
GOVERNOR OF HAWAII

RECEIVED



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

6 JUL 17 12:15

DESIGN & CONSTRUCTION
WASTEWATER BRANCH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

July 6, 2006

163 797
div 2
dep ce
WW

In reply, please refer to:
EPO-06-094

06 JUL 14 PM 12:54
DEPT OF DESIGN & CONSTRUCTION
GOVERNOR'S OFFICE

Mr. Eugene Lee, Deputy Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Lee:

SUBJECT: Draft Environmental Assessment for Houghtailing Street Area Sewer Rehabilitation
Honolulu, Oahu, Hawaii
TMK: (1) 1-6-011 to 1-6-020; 1-6-027; 1-8-034 to 1-8-035

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch comments.

Wastewater Branch

We have reviewed the subject document which proposes to rehabilitate a portion of the City's existing municipal wastewater collection system located within the Houghtailing Street Area, Honolulu, Oahu. The sewer system within this project area consists of approximately 42,289 linear feet of sewer line, ranging from 6-inch to 30-inch diameter pipes and 311 manholes. The proposed sewer rehabilitation project seeks to address existing hydraulic deficiencies, structural problems, and current maintenance issues that have developed in the project area.

As there are no individual wastewater systems in the project area and there are no significant changes from the Pre-Assessment Consultation, thus we have no objections to the proposed rehabilitation project.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4294.

Post-It® Fax Note	7671	Date	7/17/06	# of pages	2
To	Brooke Webber	From	S.H. Lai		
Co./Dept	TLCG	Co.	DOC/WOIP		
Phone #	596-7790	Phone #	527-5398		
Fax #	596-7361	Fax #	523-4642		

Mr. Lee
July 6, 2006
Page 2

We strongly recommend that you review all of the Standard Comments on our website: www.state.hi.us/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

If there are any questions about these comments please contact Jiakai Liu with the Environmental Planning Office at 586-4346.

Sincerely,



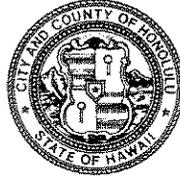
KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
WWB

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 06-0288

October 12, 2006

Mr. Kelvin H. Sunada, Manager
State of Hawaii
Department of Health
Environmental Planning Office
P.O. Box 3376
Honolulu, Hawaii 96801

Dear Mr. Sunada:

Subject: Draft Environmental Assessment (EA)
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034, 1-8-035
Honolulu, Oahu, Hawaii

Thank you for your letter dated July 6, 2006, completing your review of the subject Draft EA (EPO-06-094). We understand that the document was routed for review to the various branches of the Department of Health's (DOH) Environmental Health Administration, and that only the Wastewater Branch provided comments.

While the Wastewater Branch concluded that it has no objections to the proposed project, we acknowledge that due to the nature of the proposed project, conformance with the applicable provisions of the Administrative Rules of the Department of Health's, Chapter Title 11-62, "Wastewater Systems" is necessary. Additionally, it is understood that the Wastewater Branch reserves the right to review the detailed wastewater plans associated with the proposed project for conformance with the applicable rules.

Per the recommendation of your office, we have reviewed the Standard Comments on the DOH website in order to determine those comments specifically applicable to the subject project which should be adhered to. During our review of the Standard Comments, we identified that most of the pertinent comments specifically applicable to the subject project have been addressed in the Draft EA and will also be incorporated into the Final EA. However, the following pertinent and applicable comment was recognized as requiring conformance, and will be incorporated into Section 3.3 of the Final EA and complied with for the duration of the project:

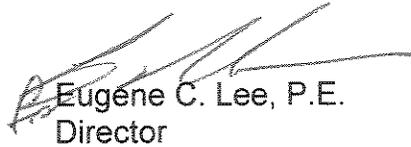
Mr. Sunada
Page 2
October 12, 2006

Solid and Hazardous Waste Branch- Standard Comments

5) Hawaii Revised Statutes Chapter 103D-407 stipulates that all highway and road construction and improvement projects funded by the State or a county or roadways that are to be accepted by the State or a county as public roads shall utilize a minimum of ten per cent crushed glass aggregate as specified by the Department of Transportation in all base-course (treated or untreated) and sub-base when the glass is available to the quarry or contractor at a price no greater than that of the equivalent aggregate.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: Mr. John Katahira, The Limtiaco Consulting Group

[Handwritten mark]

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 588-4195
FACSIMILE (808) 566-4190
E-mail: oaqo@health.state.hi.us

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du
dup U
will

July 7, 2006

Mr. Eugene Lee, Deputy Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

06 JUL 11 PM 1:58

DEPT OF DESIGN & CONSTR
CITY AND COUNTY OF HONOLULU

Dear Mr. Lee:

Subject: Draft Environmental Assessment for the Houghtailing Street Area Sewer Rehabilitation, Oahu

Thank you for the opportunity to review the subject document. We have no comment.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Genevieve Salmonson
Director

Post-It® Fax Note	7671	Date	7/17/06	# of pages	3
To	Brooke Webber	From	Sung Ho Lai		
Co./Dept.	TLCG.	Co.	DPC/WP.F		
Phone #	596-7790	Phone #	527-5398		
Fax #	596-7361	Fax #	523-4642		

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

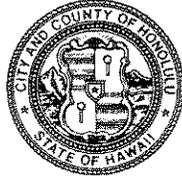
6 JUL 14 AM 10

RECEIVED

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0294

October 10, 2006

Ms. Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

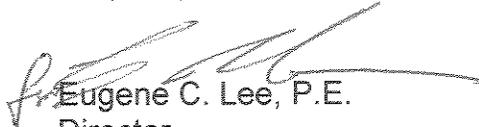
Dear Ms. Salmonson:

Subject: Draft Environmental Assessment (EA)
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034, 1-8-035
Honolulu, Oahu, Hawaii

Thank you for your letter dated July 7, 2006 completing your review of the subject Draft EA and concluding that your agency has no comments regarding the proposed project.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: Mr. John Katahira, The Limtiaco Consulting Group

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

June 28, 2006

Mr. Eugene Lee
Attn: Mr. Sung Ho Lai
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawai'i 96813

LOGNO: 2006.2161
DOC NO: 0606CM37
Archaeology

Dear Mr. Lee:

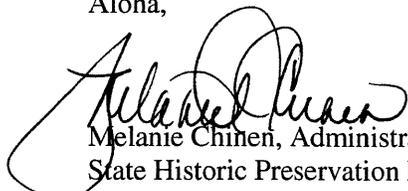
**SUBJECT: Chapter 6E-8 Historic Preservation Review [City & County] –
DEA for Proposed Houghtailing Street Sewer Area Rehabilitation
Kapālama and Nu‘uanu Ahupua‘a, Honolulu [Kona] District, Island of O‘ahu
TMK: (1) 1-6-011 to 020, 1-6-027, 1-8-034 and 035:various parcels**

Thank you for the opportunity to review the aforementioned DEA, which we received on March 5, 2006. In a letter (LOG NO: 2006.0924, DOC NO: 0606CM37) dated April 10, 2006, we commented on the proposed undertaking, and recommended archaeological monitoring to mitigate against potential harm to subsurface sites that may be present in portions of the project area. Quoting from our (3/5/06) letter:

There are two areas in particular that may yield historically-significant sites, including unmarked burials. First, there is a group of three cemeteries (Ka‘ahumanu, Maluhia, and Puea) located within the project area, at the intersection of North School Street and Kapalama Avenue. Second, there is a second cemetery (Pu‘ukamali‘i, also known as Kalaepohaku) located along the boundary of the project area, at Kamali‘i Street. All excavations conducted in the vicinity of these cemeteries should be monitored by a qualified archaeologist. It is not uncommon for additional, unmarked burials to be located outside of the established boundaries of cemeteries.

We look forward to reviewing an archaeological monitoring plan for this project. Please call Dr. Chris Monahan at 808-692-8015 if you have any questions about this letter.

Aloha,


Melanie Chinen, Administrator
State Historic Preservation Division

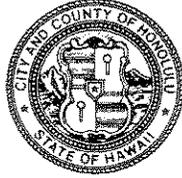
CM

Cc: Mr. John Katahira, The Limtiaco Consulting Group
Ms. Genevieve Salmonson, OEQC

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 06-0298

October 10, 2006

Ms. Melanie Chinen, Administrator
State of Hawaii
Department of Land and Natural Resources
Historic Preservation Division
601 Kamokila Boulevard, Suite 555
Kapolei, Hawaii 96707

Dear Ms. Chinen:

Subject: Draft Environmental Assessment (EA)
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034, 1-8-035
Honolulu, Oahu, Hawaii

Thank you for your letter dated June 28, 2006 completing your review of the subject Draft EA. The comments made by your agency during the pre-assessment consultation phase of the environmental review process for the proposed project (in a letter dated April 10, 2006) have been incorporated and addressed in Section 3.12 of the Draft EA. As stated in this section of the Draft EA and per your recommendation (as presented in the April 10, 2006 letter), a qualified archeological monitor will be hired and an acceptable archeological monitoring plan for the proposed project will be submitted to your office for review prior to the commencement of any ground-altering activities. Your comments will also be incorporated into the Final EA.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Eugene C. Lee".

Eugene C. Lee, P.E.
Director

c: Mr. John Katahira, The Limtiaco Consulting Group



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD06/2296B

June 28, 2006

Eugene Lee
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

RE: Draft Environmental Assessment for the Proposed Houghtailing Street Sewer Rehabilitation, Honolulu, O'ahu, TMK 1-6-011 to 1-6-020, 1-6-027, 1-8-034 to 1-8-035.

Dear Mr. Lee,

The Office of Hawaiian Affairs (OHA) is in receipt of your June 6, 2006 submission and offers the following comments:

Our staff has no comment specific to the above-listed submission at this time. Thank you for your continued correspondence.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

Aloha,


Clyde W. Nāmu'o
Administrator

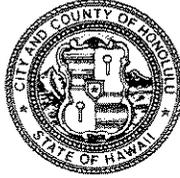
Cc: ✓ John Katahira
Limtiaco Consulting Group
650 Iwilei Road, Suite 208
Honolulu, HI 96817

Genevieve Salmonson
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
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MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0296

October 12, 2006

Mr. Clyde Namuo, Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Namuo:

Subject: Draft Environmental Assessment (EA)
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034, 1-8-035
Honolulu, Oahu, Hawaii

Thank you for your letter dated June 28, 2006, completing your review of the subject Draft EA and concluding that your agency has no comments specific to the subject Draft EA at this time.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: Mr. John Katahira, The Limtiaco Consulting Group

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



June 8, 2006

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK

RODNEY K. HARAGA, Ex-Officio
LAVERNE T. HIGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

TO: EUGENE C. LEE, P.E., DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: for  CLIFFORD P. LUM, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR HOUGHTAILING STREET
AREA SEWER REHABILITATION TMK PLATS 1-6-011 TO 1-6-020, 1-6-027,
1-8-034 TO 1-8-035

Thank you for the opportunity to comment on the proposed project.

The construction drawings should be submitted for our review and approval.

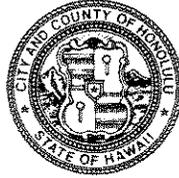
The construction schedule should be coordinated to minimize impact to the water system.
Please coordinate construction with the Board of Water Supply's Capital Projects Division,
Support Section (748-5740) for possible conflicts.

If you have any questions, please contact Robert Chun at 748-5440.

cc: Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control
Mr. John Katahira, Project Manager, The Limtiaco Consulting Group
Howard Tanaka

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
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Web site: www.honolulu.gov



MUFI HANNEMANN
MAYOR

EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 06-0297

October 10, 2006

MEMORANDUM

TO: CLIFFORD P. LUM, P.E., MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034, 1-8-035
HONOLULU, OAHU, HAWAII

Thank you for your letter dated June 8, 2006 completing your review of the subject Draft EA. As stated in Section 3.14.2 of the Draft EA, the construction drawings associated with the proposed project will be submitted to the Board of Water Supply (BWS) for review and approval. Additionally, the construction schedule will be coordinated with the BWS to minimize any possible impacts to the water system. Your comments regarding the submission of construction drawings for review and the coordination of the construction schedule will also be incorporated into the Final EA.

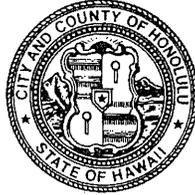
We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

c: Mr. John Katahira, The Limtiaco Consulting Group

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. WEB SITE: www.honoluluodpp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR



HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

06WWB062 (SG)
2006/ELOG-1350

July 7, 2006

MEMORANDUM

TO: EUGENE C. LEE, P.E., ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: SUNG HO LAI
WASTEWATER DIVISION

FROM: *For Dennis M. Nishimura*
HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR HOUGHTAILING
STREET AREA SEWER REHABILITATION

This is in response to your letter dated May 24, 2006 requesting comments for the proposed project. We have reviewed the DEA and have the following comments:

1. Clarify what "projected increases in flow" pertains to in the last paragraph on page 1-2. The applicant has previously stated that the subject project is not anticipated to accommodate any new residential or commercial development. The DEA should state this. Is the projected increase in flow a result of higher infiltration and inflow as the pipe ages, or from other sources?
2. Include a discussion on the future wastewater flows generated from the project area.
3. SECTION 3.4 SOILS: Excavation and backfill activities are not considered grading and, therefore, compliance with the grading ordinance is not applicable. Appropriate BMPs, however, should be implemented.
4. SECTION 6.3 CITY AND COUNTY OF HONOLULU:
 - a. Delete the Grubbing, Grading, and Stockpiling Permit.
 - b. Include right-of-entry approvals.

Mr. Eugene C. Lee, P.E.
July 7, 2006
Page 2

5. SECTION 8.2: DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION –
OTHER INTERESTED PARTIES: Are there other parties that will be affected by
the project besides KSBE, such as businesses, and institutions?

If you have any questions, please contact Mr. Scott Gushi of the Wastewater Branch at
523-4886.

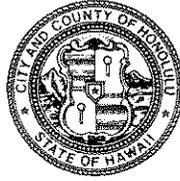
HE:dl
[463446]

cc: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
✓ Mr. John Katahira, Project Manager
The Limtiaco Consulting Group

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
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Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0287

October 12, 2006

MEMORANDUM

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTN: DENNIS NISHIMURA, BRANCH HEAD
WASTEWATER BRANCH

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034, 1-8-035
HONOLULU, OAHU, HAWAII

Thank you for your letter dated July 7, 2006, completing your review of the subject Draft EA. We offer the following in response to your comments:

1. Clarify what "projected increase in flow" pertains to in the last paragraph on page 1-2. In the last paragraph on page 1-2 of the Draft EA, the sentence that includes the statement regarding "projected increases in flow" will be revised in the Final EA to read "In areas where a sewer line has been identified for rehabilitation or replacement, the flow capacity of the sewer line will be improved to accommodate existing and future flow levels."
2. Include a discussion on the future wastewater flows generated from the project area. In order to clarify future wastewater flows as referred to throughout the Draft EA, a footnote will be incorporated into the Final EA after the first use of the term "future flow" (on page 1-2 of the Draft EA) to read "¹ Used here and throughout this report, 'future flow' refers to the City's hydraulic model for wastewater flow calculations projected to the year 2020. In contrast, 'existing flow' (which was also used for the project's hydraulic analysis) refers to current wastewater flow conditions based on the input available when the City's hydraulic model was last updated in 2001. In both instances, the City utilizes specific input

- variables – such as service area, land use, population, dry weather and wet weather inflow/infiltration – to model the wastewater flow characteristics for any given portion of the sewer system. Therefore, ‘future flow’ does not necessarily represent future development, but the anticipated wastewater flow for the year 2020 based on the City’s hydraulic model.”
3. SECTION 3.4 SOILS: Your clarification that excavation and backfill activities are not considered grading and, therefore, do not trigger the need for compliance with the City’s grading ordinance is acknowledged and appreciated. Therefore, the last sentence in the fourth paragraph on page 3-4 of the Draft EA will be revised in the Final EA to read “Excavation and backfill activities are not expected to have any significant impact on the subsurface of the project area, and will include appropriate erosion control measures.”
 4. SECTION 6.3 CITY AND COUNTY OF HONOLULU:
 - a. The suggested deletion of “Grubbing, Grading, and Stockpiling Permit” will be made to this section of the Final EA.
 - b. A statement will be incorporated into this section of the Final EA to read “Right-of-Entry Approvals: To be obtained prior to access of sewer easements.”
 5. SECTION 8.2 DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION- OTHER INTERESTED PARTIES: Any potential affects associated with the subject project on residences, businesses, or institutions located within or surrounding the project area are addressed in Section 3.13.1 of the Draft EA. As noted in this section of the Draft EA, overall, potential impacts or inconveniences that may occur to residents and surrounding businesses and institutions during construction of the proposed project will be temporary in nature and will cease upon completion of the construction. As presented in Sections 3.13.1 and 8.1 of the Draft EA, the project area residents and tenants have been consulted regarding the proposed project on various occasions. These comments will also be incorporated into the Final EA. Additionally, a statement indicating that a flyer will be sent to those residences, businesses, or institutions directly exposed to potential impacts as a result of construction activities will be incorporated into the Final EA and complied with prior to construction of the project.

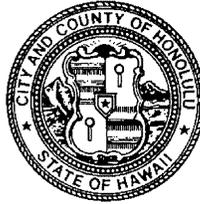
We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at extension 5398.

c: Mr. John Katahira, The Limtiaco Consulting Group

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 692-5054 • Fax: (808) 692-5857
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 06-646

July 3, 2006

MEMORANDUM

TO: EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: SUNG HO LAI

FROM: *Laverne Higa*
LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TMK PLATS 1-6-011 TO 1-6-020, 1-6-034 TO 1-8-035
HONOLULU, OAHU, HAWAII**

Thank you for the opportunity to provide comments on the DEA, dated May 2006, for the subject project.

We support the cured-in-place pipe (CIPP) lining method for rehabilitating existing sewer lines. To lessen the impact on project roadways, we request that open trench construction be kept to a minimum and utilized only where less destructive methods may not be feasible.

A problem inherent with open trench construction is adequate compaction of the backfill. Therefore, we request that flowable fill or Controlled Low Strength Material (CLSM) be evaluated and/or considered for use as backfill material. The DEA makes no mention of backfilling methods to be incorporated in the project.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 484-7697.

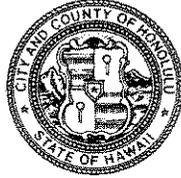
cc: Office of Environmental Quality Control
Attention: Genevieve Salmonson, Director

✓ The Limitiaco Consulting Group
Attention: John Katahira

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
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Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 06-0290

October 12, 2006

MEMORANDUM

TO: LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034, 1-8-035
HONOLULU, OAHU, HAWAII

Thank you for your letter dated July 3, 2006, completing your review of the subject Draft EA (DRM 06-646). We offer the following in response to your comments:

We acknowledge your support of the cured-in-place pipe (CIPP) lining method for sewer rehabilitation within the project area. As stated in the Draft EA, the majority of the proposed sewer system improvements within the project area will utilize construction methods that do not require excavation or trenching activities, namely the use of CIPP lining, and open cut trench construction has been kept to a minimum. The use of open cut trenching will and must be employed where CIPP lining does not adequately address the existing sewer system deficiencies. The use of other trenchless pipe rehabilitation methods were evaluated but were determined to be either ineffective or cost prohibitive.

Ms. Higa
Page 2
October 12, 2006

For those locations where open cut trenching methods will be utilized, the use of flowable fill or controlled low strength material as backfill material will be considered during the design phase of the subject project. It is acknowledged that the use of such materials would be suitable; however, the determination as to whether or not these materials can be used in construction of the subject project will ultimately be based on the cost-effectiveness and construction budget constraints. The above statements regarding the use of backfilling methods will be incorporated into Section 2.6.1 Sewer Line Rehabilitation/Replacement Methods, Open Cut Trench of the Final EA.

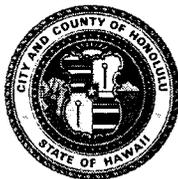
We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

c: Mr. John Katahira, The Limtiaco Consulting Group

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4529 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



MELVIN N. KAKU
DIRECTOR

TP6/06-157556R

July 11, 2006

MEMORANDUM

TO: EUGENE LEE, ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: SUNG HO LAI, WASTEWATER PLANNING BRANCH

FROM: MELVIN N. KAKU, DIRECTOR

SUBJECT: HOUGHTAILING STREET AREA SEWER REHABILITATION

Thank you for the May 24, 2006 letter from The Limtiaco Consulting Group, requesting our review of and comments on the draft environmental assessment for the subject project. We have the following comments on Section **3.14.1. Roadways and Traffic Considerations, Impacts and Mitigation Measures** (Page 3-25):

1. The following statement should be added to this section: "All traffic controls within the street right-of-way shall be maintained during the construction phase and all permanent traffic controls disturbed during the construction phase shall be replaced by the contractor upon completion of the construction work".
2. The second sentence in the second complete paragraph should be corrected to read, "The public transit system is administered by the DTS through its contractor, Oahu Transit Services, Incorporated."

Eugene Lee, Acting Director
Page 2
July 11, 2006

3. The last sentence in the last paragraph should be revised to state that if bus stop areas are subject to construction impacts, they must be ADA compliant.

Should you have any questions regarding these comments, please contact Ms. Faith Miyamoto of the Transportation Planning Division at Local 6976.


MELVIN N. KAKU

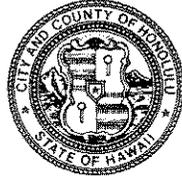
cc: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

Mr. John Katahira, Project Manager
The Limtiaco Consulting Group

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

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Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0289

October 12, 2006

MEMORANDUM

TO: MELVIN N. KAKU, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM:  EUGENE C. LEE, P.E. DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034, 1-8-035
HONOLULU, OAHU, HAWAII

Thank you for your letter dated July 11, 2006, completing your review of the subject Draft EA. We offer the following in response to your comments:

1. SECTION 3.14.1 Roadways and Traffic Considerations, Impacts and Mitigation Measures (Page 3-25): The suggested statement, "All traffic controls within the street right-of-way shall be maintained during the construction phase and all permanent traffic controls disturbed during the construction phase shall be replaced by the contractor upon completion of the construction work.", will be added to the third complete paragraph in this section of the Final EA.
2. SECTION 3.14.1 Roadways and Traffic Considerations, Impacts and Mitigation Measures (Page 3-25): Per your request, the second sentence in the second complete paragraph of the Draft EA will be corrected and incorporated into the Final EA to read as, "The public transit system is administered by the DTS through its contractor, Oahu Transit Service, Incorporated."

Mr. Kaku
Page 2
October 12, 2006

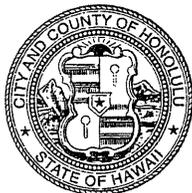
3. SECTION 3.14.1 Roadways and Traffic Considerations, Impacts and Mitigation Measures (Page 3-25): Your clarification is acknowledged and appreciated. In the Final EA, a statement will be added after the last sentence in the last paragraph to reflect that if bus stop areas are impacted during construction activities, they shall be made Americans with Disabilities Act compliant.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at extension 5398.

c: Mr. John Katahira, The Limtiaco Consulting Group

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 SOUTH STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 723-7139 • FAX: (808) 723-7111 • INTERNET: www.honolulufire.org



MUFI HANNEMANN
MAYOR

KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

July 5, 2006

TO: EUGENE LEE, DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: KENNETH G. SILVA, FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS: 1-6-011 TO 1-6-020, 1-6-027, AND 1-8-034 TO 1-8-035
HONOLULU, OAHU, HAWAII

In response to a letter dated May 24, 2006, from John Katahira of The Limtiaco Consulting Group regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with for the duration of the project:

1. Maintain fire apparatus access throughout the construction site.
2. Maintain access to fire hydrants. Please notify the HFD's Fire Communication Center at 523-4411 regarding any interruption of the existing fire hydrant system.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.

A handwritten signature in black ink, appearing to read "Kenneth G. Silva".

KENNETH G. SILVA
Fire Chief

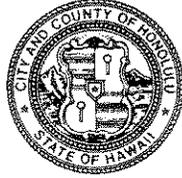
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cc: Genevieve Salmonson, Office of Environmental Quality Control
John Katahira, The Limtiaco Consulting Group ✓

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WW.P 06-0295

October 10, 2006

MEMORANDUM

TO: KENNETH G. SILVA, FIRE CHIEF
HONOLULU FIRE DEPARTMENT

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034, 1-8-035
HONOLULU, OAHU, HAWAII

Thank you for your letter dated July 5, 2006 completing your review of the subject Draft EA. The following Honolulu Fire Department (HFD) requirements, as listed in your comment letter, will be incorporated into the Final EA and complied with for the duration of the project:

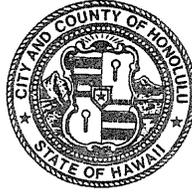
1. Maintain fire apparatus access throughout the construction site.
2. Maintain access to fire hydrants. Notify the HFD's Fire Communication Center at 523-4411 regarding any interruption of the existing fire hydrant system.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

c: Mr. John Katahira, The Limtiaco Consulting Group

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
<http://www.honolulupd.org>
www.honolulu.gov



MUFI HANNEMANN
MAYOR

BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE **BS-DK**

June 6, 2006

TO: EUGENE C. LEE, P.E., DEPUTY DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
HOUGHTAILING STREET AREA SEWER REHABILITATION
TMK: PLATS 1-6-011 TO 1-6-020, 1-6-027, 1-8-034 TO 1-8-035

Thank you for the opportunity to review and comment on the subject project.

This project should have no unanticipated impact on the facilities or operations of the Honolulu Police Department.

Should you have any questions, please call Major Kurt Kendro of District 5 (Kalihi) at 529-3156 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

BOISSE P. CORREA
Chief of Police

By *William Chus*
KARL GODSEY
Assistant Chief of Police
Support Services Bureau

cc: Ms. Genevieve Salmonson, OEQC
✓ Mr. John Katahira, The Limtiaco
Consulting Group

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

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MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0293

October 12, 2006

MEMORANDUM

TO: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

FROM:  EUGENE C. LEE, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
HOUGHTAILING STREET AREA SEWER REHABILITATION
TAX MAP KEYS PLATS: 1-6-011 TO 1-6-020, 1-6-027, 1-8-034, 1-8-035
HONOLULU, OAHU, HAWAII

Thank you for your letter dated June 6, 2006, completing your review of the subject Draft EA and concluding that the proposed project should have no unanticipated impact on the Honolulu Police Department's facilities or operations.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at extension 5398.

c: Mr. John Katahira, The Limtiaco Consulting Group



July 5, 2006

Mr. Eugene Lee - Deputy Director
Department of Design & Construction
City & County of Honolulu
650 S. King Street - 11th Floor
Honolulu HI 96813

Attn: Mr. Sung Ho Lai

Dear Mr. Lee:

**Re: Houghtailing Street Area Sewer Rehabilitation
Honolulu, Oahu, Hawaii
TMKs: 1-6-011 to -020, 1-6-027, 1-8-034 to -035**

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company, Inc. (HECO) has no objections to the proposed project.

We appreciate your efforts to keep us apprised during the planning process. As the project develops, please continue to keep us informed. Further along in your design, we will be better able to evaluate the effects on our system facilities. In the meantime, HECO will need continued access for maintenance of any of our easements and facilities located on the project site(s).

Thank you again for requesting our input.

Sincerely,

Kirk S. Tomita
Senior Environmental Scientist

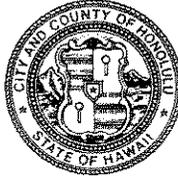
cc: OEQC
Mr. John Katahira



DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
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MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0291

October 12, 2006

Mr. Kirk S. Tomita, Senior Environmental Scientist
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840

Dear Mr. Tomita:

Subject: Draft Environmental Assessment (EA)
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034, 1-8-035
Honolulu, Oahu, Hawaii

Thank you for your letter dated July 5, 2006, completing your review of the subject Draft EA and concluding that your agency has no objections to the proposed project.

Per your request and as described in Section 3.14.5 of the Draft EA, Hawaiian Electric Company Inc. (HECO) will continue to be informed as the subject project develops. Additionally, it is recognized that HECO will need continued access to its facilities and easements located within the project area for maintenance purposes. Your comments regarding efforts to keep HECO informed of the subject project and continued access to HECO facilities for maintenance purposes will also be incorporated into the Final EA.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: Mr. John Katahira, The Limtiaco Consulting Group



P.O. Box 3000
Honolulu, Hawaii 96802-3000

June 6, 2006

City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Attention: Mr. Eugene Lee
Deputy Director

Gentlemen:

Subject: Draft Environmental Assessment for
Houghtailing Street Area Sewer Rehabilitation

Please be advised that The Gas Company, LLC maintains underground utility gas mains in the project vicinity, which serves commercial and residential customers in the area and is interconnected with the utility network in Honolulu. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.

Thank you for the opportunity to comment on the Draft Environmental Assessment. Should there be any questions, or if additional information is desired, please call Stason Nishimura at 594-5689.

Sincerely,

Charles E. Calvet, P.E.
Manager, Engineering

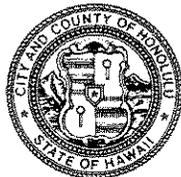
CEC:krs
06-143

cc: Ms. Genevieve Salmonson, Office of Environmental Quality Control
Mr. John Katahira, The Limtiaco Consulting Group

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

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HONOLULU, HAWAII 96813
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MUFI HANNEMANN
MAYOR



EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

WWW.P 06-0292

October 12, 2006

Mr. Charles Calvet, P.E., Manager
The Gas Company
Engineering Department
P.O. Box 3000
Honolulu, Hawaii 96802-3000

Dear Mr. Calvet:

Subject: Draft Environmental Assessment (EA)
Houghtailing Street Area Sewer Rehabilitation
Tax Map Keys Plats: 1-6-011 to 1-6-020, 1-6-027, 1-8-034, 1-8-035
Honolulu, Oahu, Hawaii

Thank you for your letter dated June 6, 2006, completing your review of the subject Draft EA. Section 3.14.5 of the Draft EA describes The Gas Company's utility lines within the project area and notes precautionary and mitigative measures to be implemented throughout the design and construction phases of the proposed project with the purpose of minimizing any potential conflicts with the existing gas distribution system. As stated in this section of the Draft EA, The Gas Company will be notified of the construction schedule and coordination activities will be executed as appropriate. Your comments will also be incorporated into the Final EA.

We appreciate your interest and participation in the Draft EA public review phase of the environmental review process. Your letter, along with this response, will be included in the forthcoming Final EA. Should you have any questions, please contact Mr. Sung Ho Lai of the Wastewater Division at 527-5398.

Very truly yours,


Eugene C. Lee, P.E.
Director

c: Mr. John Katahira, The Limtiaco Consulting Group

