



HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION • DEPARTMENT OF HAWAIIAN HOME LANDS

Community Information Meeting

Papakōlea Sewer Projects

November 18, 2021



Meeting Kuleana

- 1) Be respectful of the person talking – please do not interrupt the person that is talking;
- 2) Wait for the facilitator to call on you or type your question into the chat box
- 3) When addressing other participants (verbally or in the chat box), be respectful, show aloha, treat others how you would like to be treated;
- 4) Agree to disagree — accept that others may have different perspectives and opinions.
- 5) Have an open mind — take home new ideas or new information.



Meeting Agenda

- To provide an update to the Papakōlea Homestead Community on DHHL's Sewer Improvement Project
 - The purpose of the project is to upgrade sewer improvements and access which comply with City and County Standards.
- Question and Answer



\$13 Million Total Cost
(2016-2019)





Papakōlea Subdivision

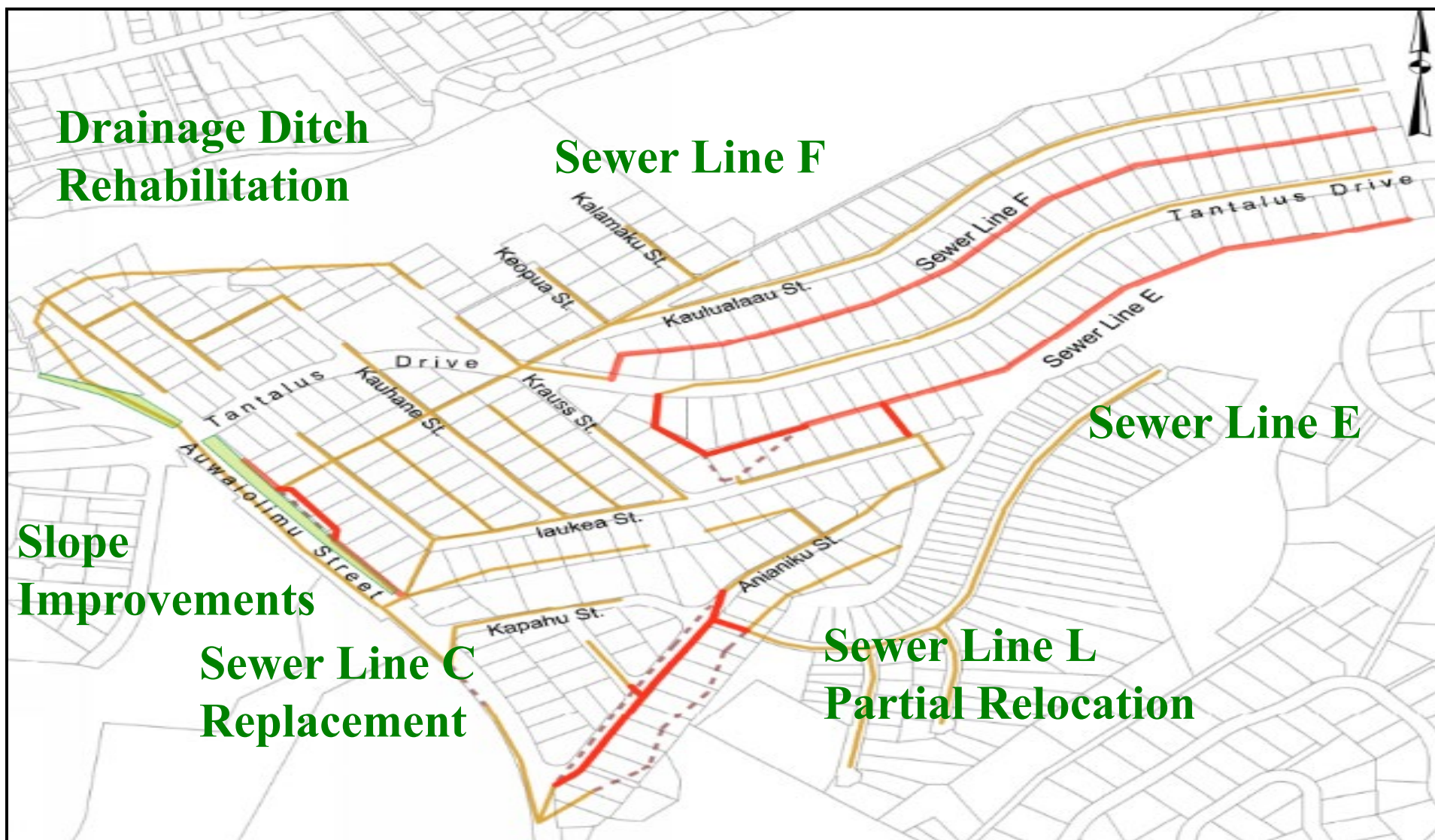
Phase 1

Sewer Improvements

2016-2019



Papakōlea Phase 1 Sewer Improvements

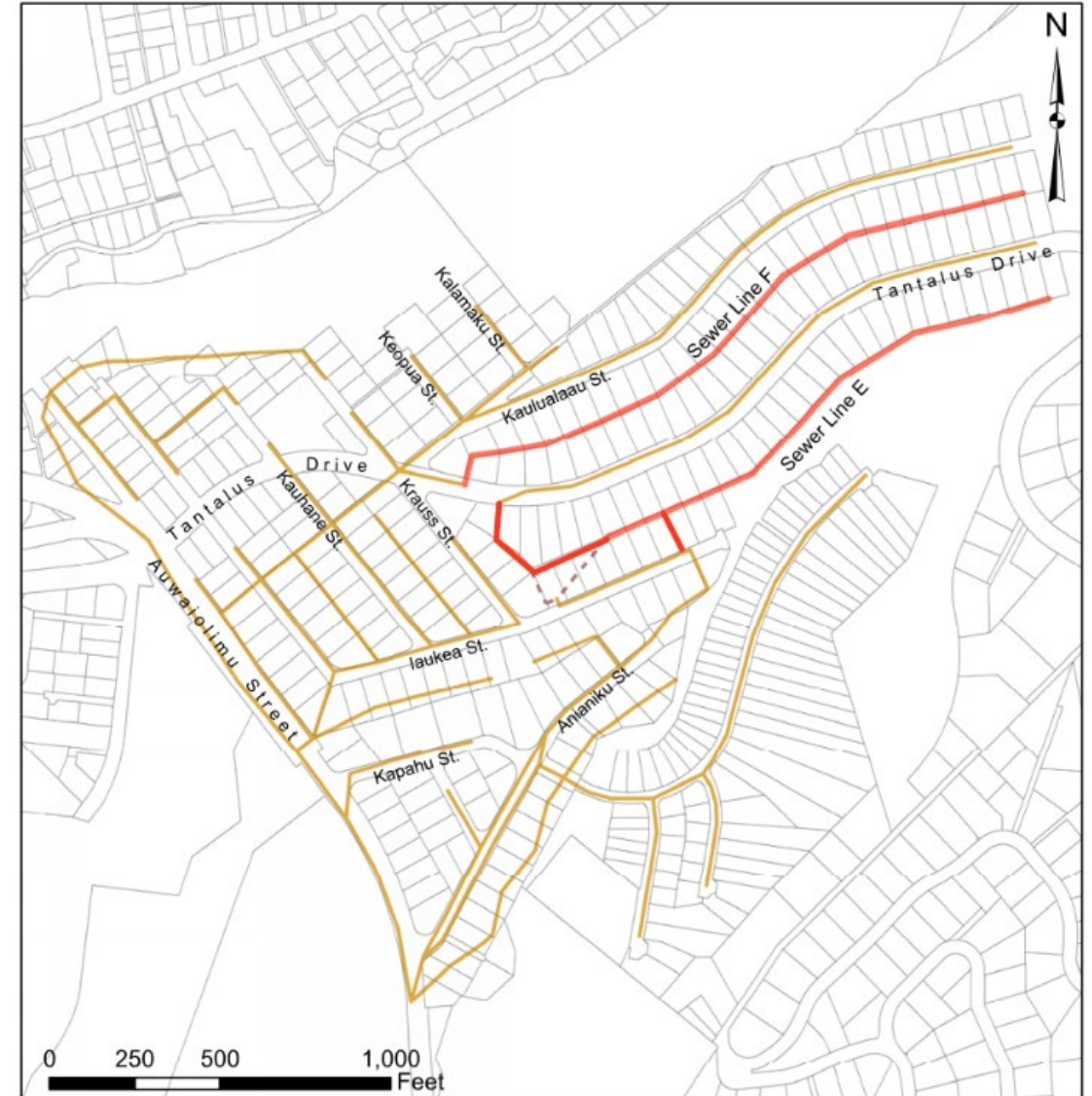




Papakōlea Phase 1 Sewer Improvements

Sewer Line E & F:

- 65 Lots
- 4,200 Linear feet
- 28 New sewer manholes





Papakōlea Phase 1 Sewer Improvements

Sewer Line E:

- Realigned and rerouted sewer line and manhole to avoid bisecting properties





Papakōlea Phase 1 Sewer Improvements

Sewer Line L Realignment:

- 900 LF, 10-inch pipe
- 6 New sewer manholes
- 16 Lateral reconnections
- Abandon existing Sewer line K and L in place

Completed:

- September 2019



Papakōlea Phase 1 Sewer Improvements

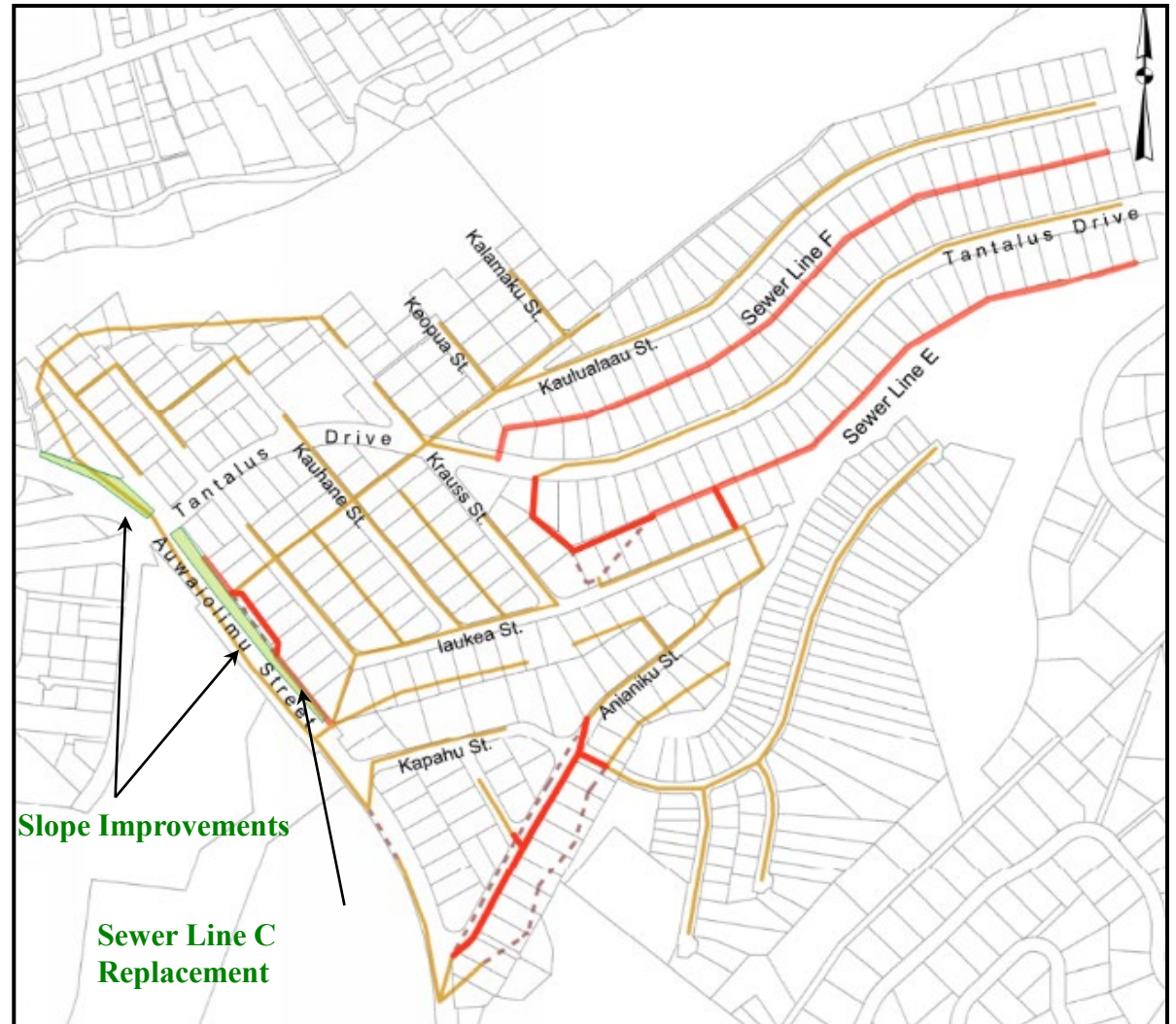
Slope C and C-1 Replacement:

Slope Stabilization

- 34,000 square feet
- Completed June 2018
- Cost: \$4 Million

Sewer Line C & C-1

- Completed August 2019
- 520 Linear feet,
- 8" pipe
- (5) New sewer manholes





Papakōlea Subdivision
Phase 2
Sewer Improvements
2020- present



Proposed Improvements

Objectives:

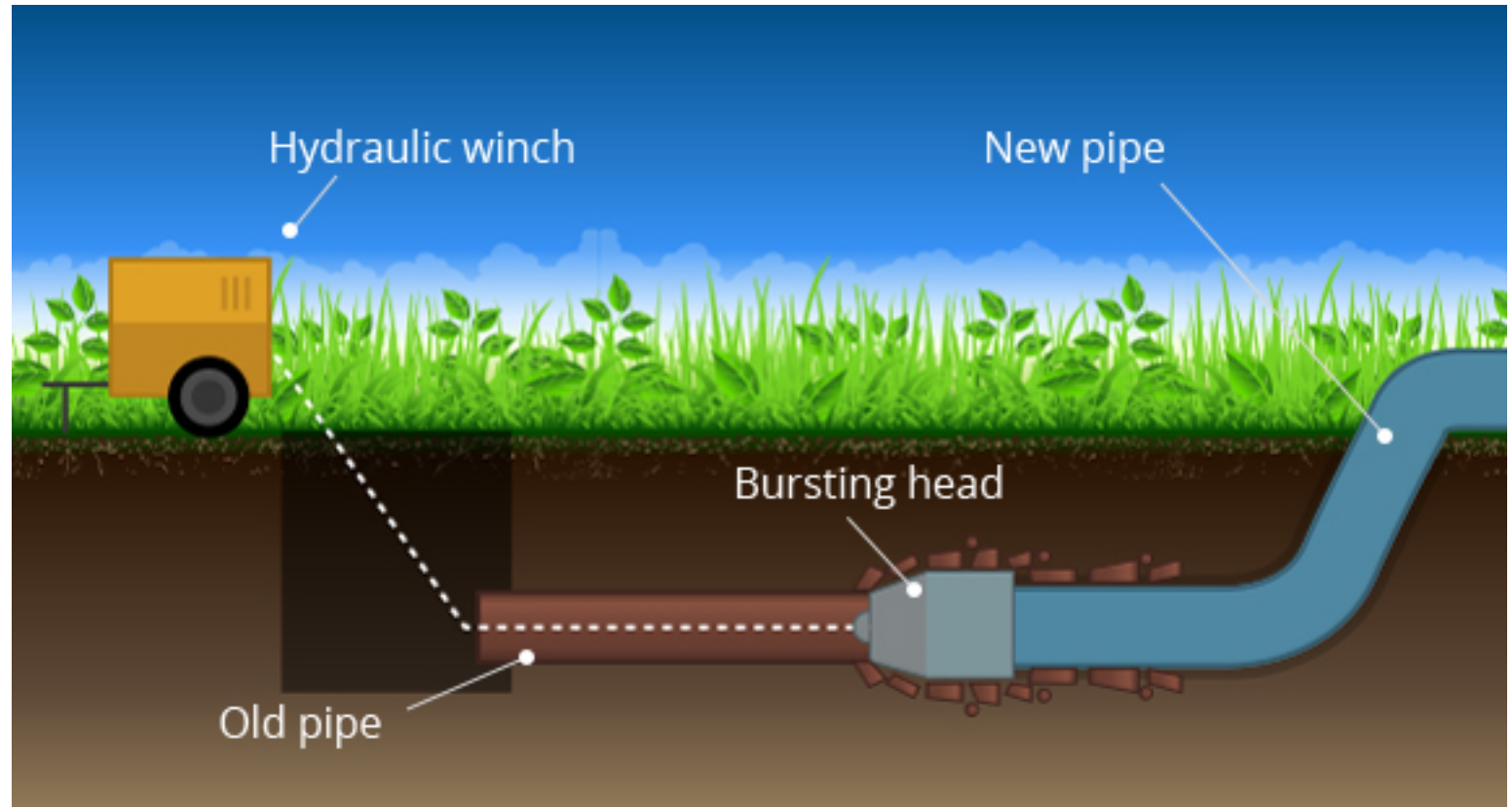
- Replace aging sewer system (80+ years old)
- Reduce sewer spills
- To meet existing City & County of Honolulu Standards for ownership transfer
- Continue progress from Phase 1 sewer improvements projects



Pipe Bursting

Static Pipe Bursting Process

- A bursting head and new pipe is pulled through existing pipe
- Broken pipe is pushed into the surrounding soil
- Avoids exposing existing utilities
- Minimizes ground disturbance





Low Pressure Sewer System

Low Pressure Sewer System (LPSS)

An alternative to a conventional gravity sewer system. Utilizes a collection tank and control panel to pump sewage from the house to the roadway sewer system.





- Phase 2A

- Replacement for Sewer Lines C, C-2, D, D-1, D-3, D-5 & G, and spot repairs using pipe bursting and open trench methods
- CLSM fill and abandon 2,000 feet of pipe along SL K, L
- Replace 3,400 feet of gravity sewer lines





Phase 2A Impacts

Typical Impacts

- Remove trees and shrubs
- Relocate storage units/area, sheds, structures out of sewer easement.
- Demolish and reconstruct walls, fences, driveways, and sidewalks.
Temporarily inaccessible during construction.



Photos 1 & 2. Reconstruct walkway and staircase between Auwaiolimu St. and laukea St.



Phase 2A Impacts

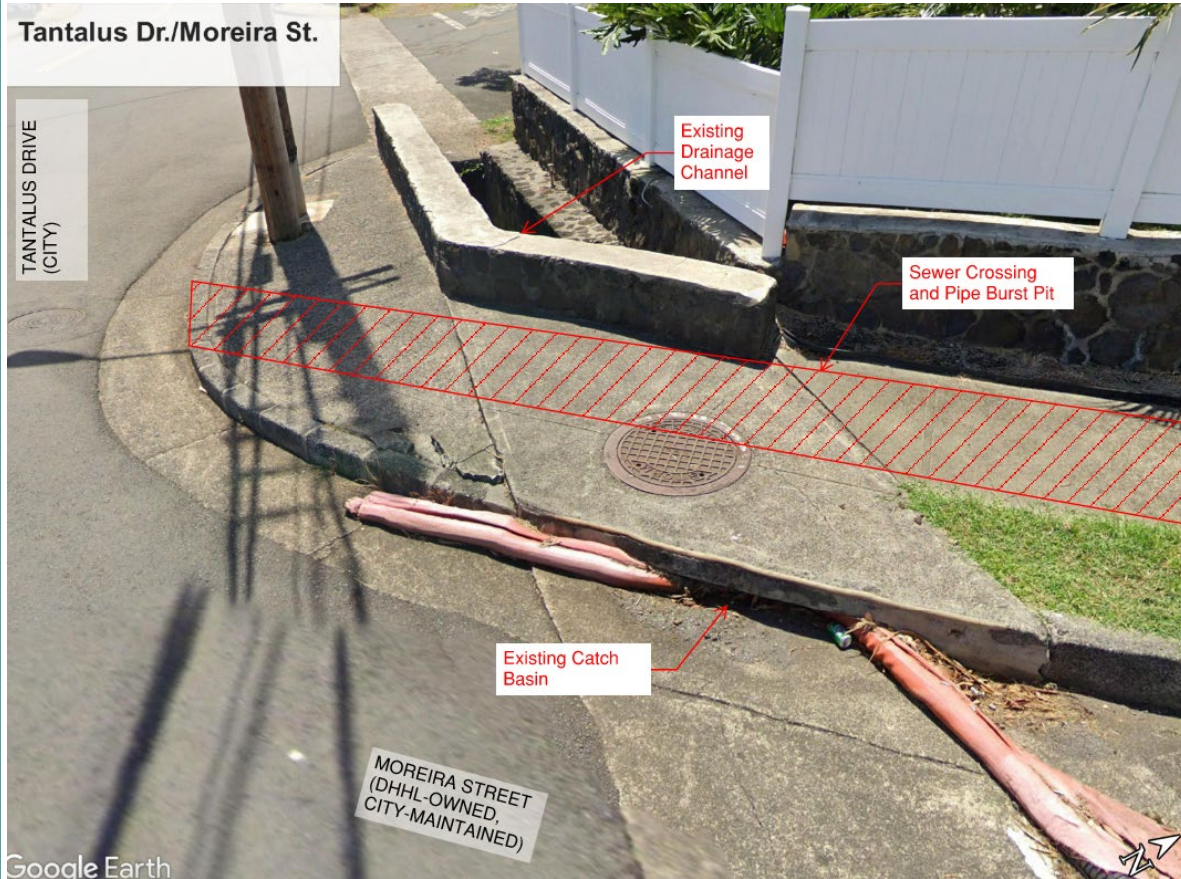


Photo 1. Existing sewer line crosses under the existing historic drainage channel.



Photo 2. Exist. sewer line runs under a large existing mango tree. Tree to be potentially removed.



- East of Tantalus Dr.
 - Replace Sewer Lines A, C, C-3, C-4, J
 - 2,120 feet of gravity sewer lines
 - Install 28 LPSS
 - SL D-2, D-4, I, & K-2 difficult accessibility
 - Upsize SL A south of Iaukea St. to 12-in.
 - Requires City & County of Honolulu coordination
- West of Tantalus Dr.
 - Alternative 1 – All LPSS
 - Alternative 2 – Partial LPSS & re-routing flows





Phase 2B – Alternative 1

West of Tantalus Dr.

- Keep same sewer flow path
- Convert 38 homes to LPSS
- 700 ft, 8-in gravity pipes
- 1,350 ft, 3-in sewer force mains
- CLSM fill and abandon 2,500 ft SL
 - Difficult accessibility and safety concerns. Structures built on SL A and along cliffside.

Alternative #1:

Estimated Cost: \$7.3 million



| Legend | |
|--------|-----------------------------|
| | Ph. 2B Gravity Sewer Line |
| | Ph. 2B LPSS SFM |
| | Ph. 2B Abandon Pipe |
| | LPSS |
| | Existing Gravity Sewer Line |

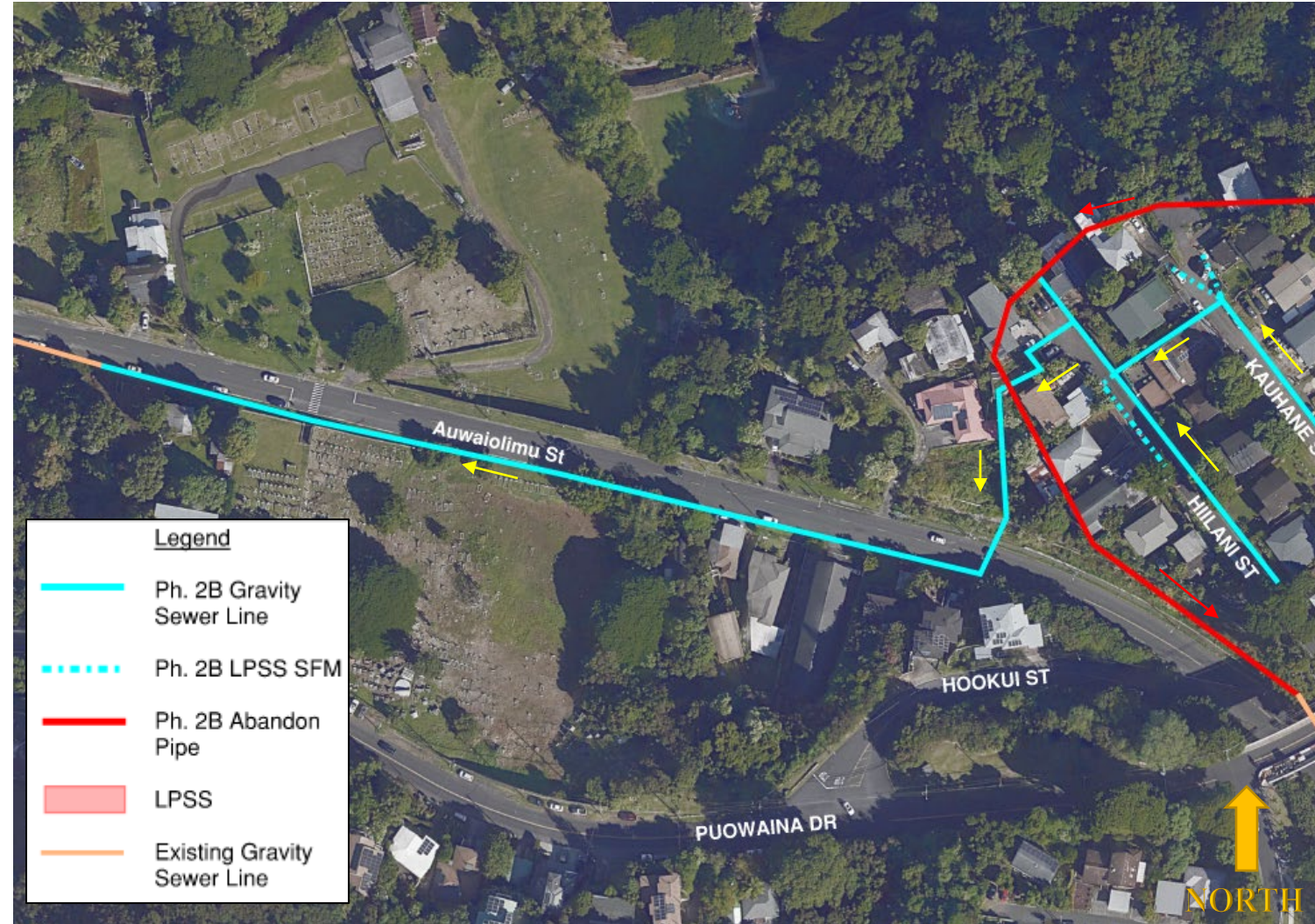


Phase 2B – Alternative 2

- Connect to existing sewer system in Auwaiolimu St.
 - 8-inch 1,040 LF in Auwaiolimu St.
 - May require upgrades to City system downstream.

Alternative #2:

Estimated Cost: \$9.5 million





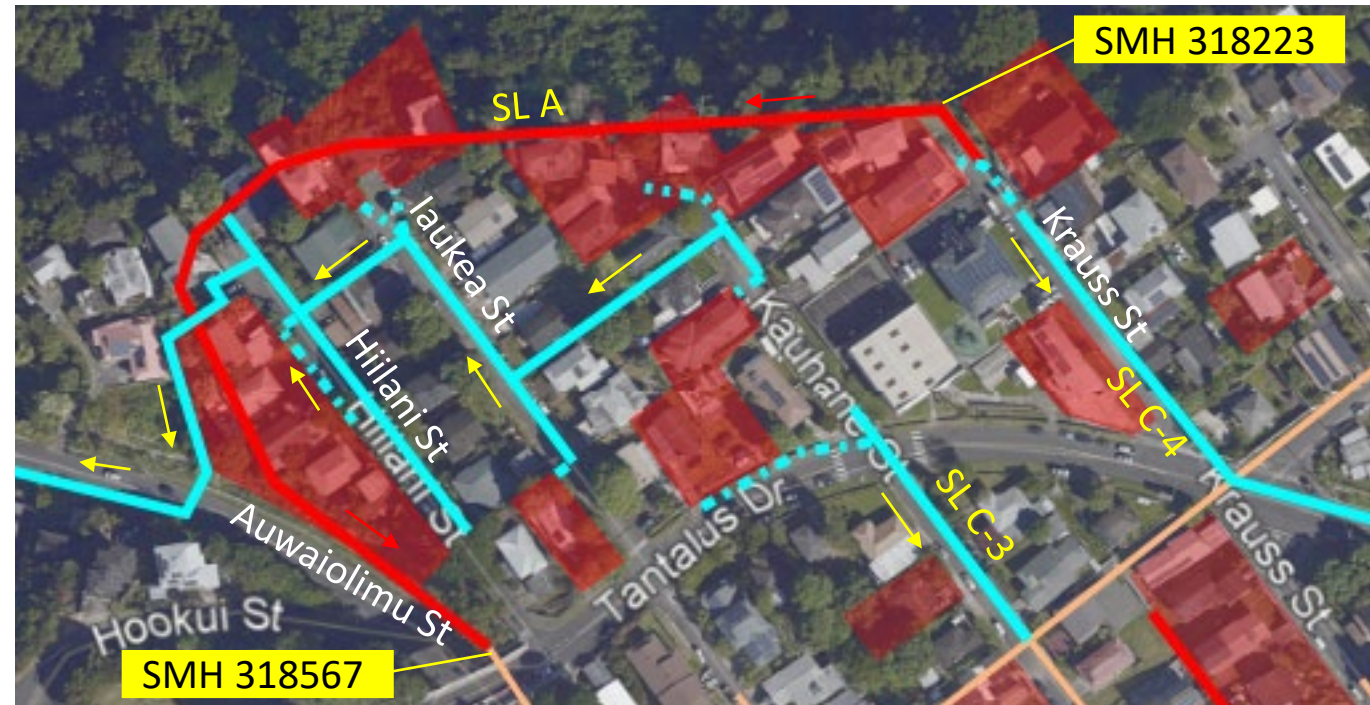
Phase 2B – Alternate 2

West of Tantalus Dr.

- Convert 21 homes to LPSS
- 1,600 ft, 8-in gravity pipes
- 720 ft, 3-in sewer force mains
- CLSM fill and abandon 1,430 ft SL

Alternative #2:

Estimated Cost: \$9.5 million

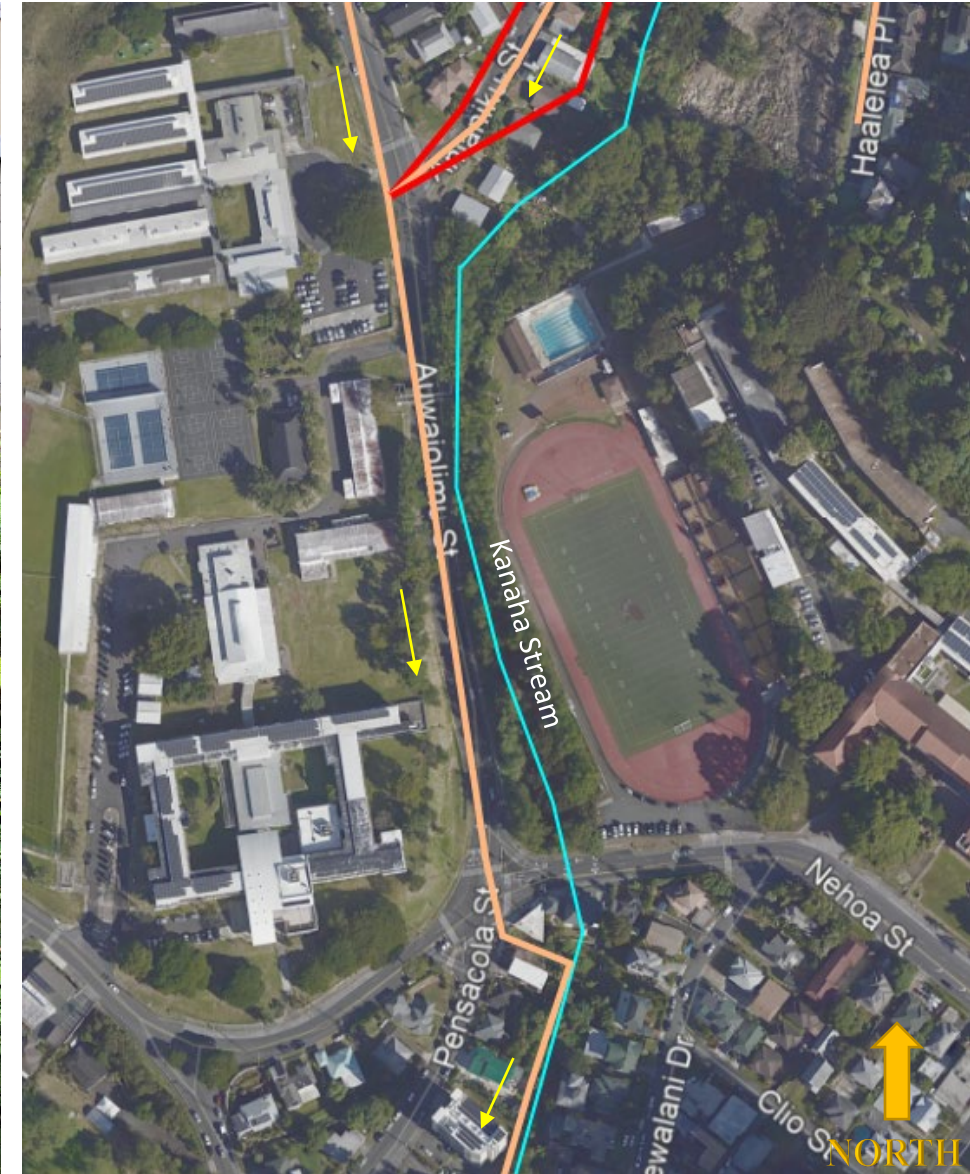


| Legend | |
|--------|-----------------------------|
| | Ph. 2B Gravity Sewer Line |
| | Ph. 2B LPSS SFM |
| | Ph. 2B Abandon Pipe |
| | LPSS |
| | Existing Gravity Sewer Line |



Phase 2B Typical Impacts

- LPSS requires coordination with homeowners for placement.
- Homeowners are responsible for management of pump station and laterals within property.
- Install sewer in access route from Hiilani St. to Auwailimu St.
- Coordinate with future city upgrades





Phase 2B –Alternate 2 Impacts

- Heavy SHPD involvement
- Crosses the historic Auwaiolimu St. ditch
- Limited space to construct by ditch
- Auwaiolimu St. by contrary is sensitive area
 - Coordinate with City
 - A few unsewered homes along Auwaiolimu St. might need downstream upgrades



Key Map





Major Challenges

Construction

- Accessibility (for construction & maintenance)
 - Majority of sewer lines are located:
 - Between homes
 - Behind buildings at top of steep drop offs
 - In sidewalks near retaining walls
 - Existing sewer easements need to be wider and have been encroached.
 - Many obstacles near/atop line: homes, garages, large trees, retaining walls, etc.
 - Safety – Sewer lines behind homes are typically at the top edge of steep slopes

Coordination

- Sewer Line replacement – close coordination with homeowners for:
 - Access & impact to property
 - Clearing easements
 - LPSS – Installation and acceptance of maintenance
- Heavy SHPD involvement with Phase 2B-Alt 2
 - Historical Ditch
 - Auwaiolimu St
- Coordination with City, their downstream system impacts Papakolea's



Mahalo



DEPARTMENT OF HAWAIIAN HOME LANDS

www.dhhl.hawaii.gov/po/oahu