DEPARTMENT OF WATER SUPPLY
COUNTY OF HAWAI'I

KĪLAUEA ERUPTION RECOVERY

Water Supply Infrastructure Projects
Kīlauea Recovery Meeting

Virtual Public Meeting
October 28, 2021

Presenters

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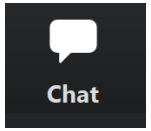
Hawai’i County Planning Department

Keith Okamoto, Manager – Chief Engineer
Hawai’i County Department of Water Supply

Meeting Agenda

1. Overview of Federal Funding and Approach to Identify Projects
2. Presentation on Proposed Improvement Projects
3. Next Steps
4. Question & Answer

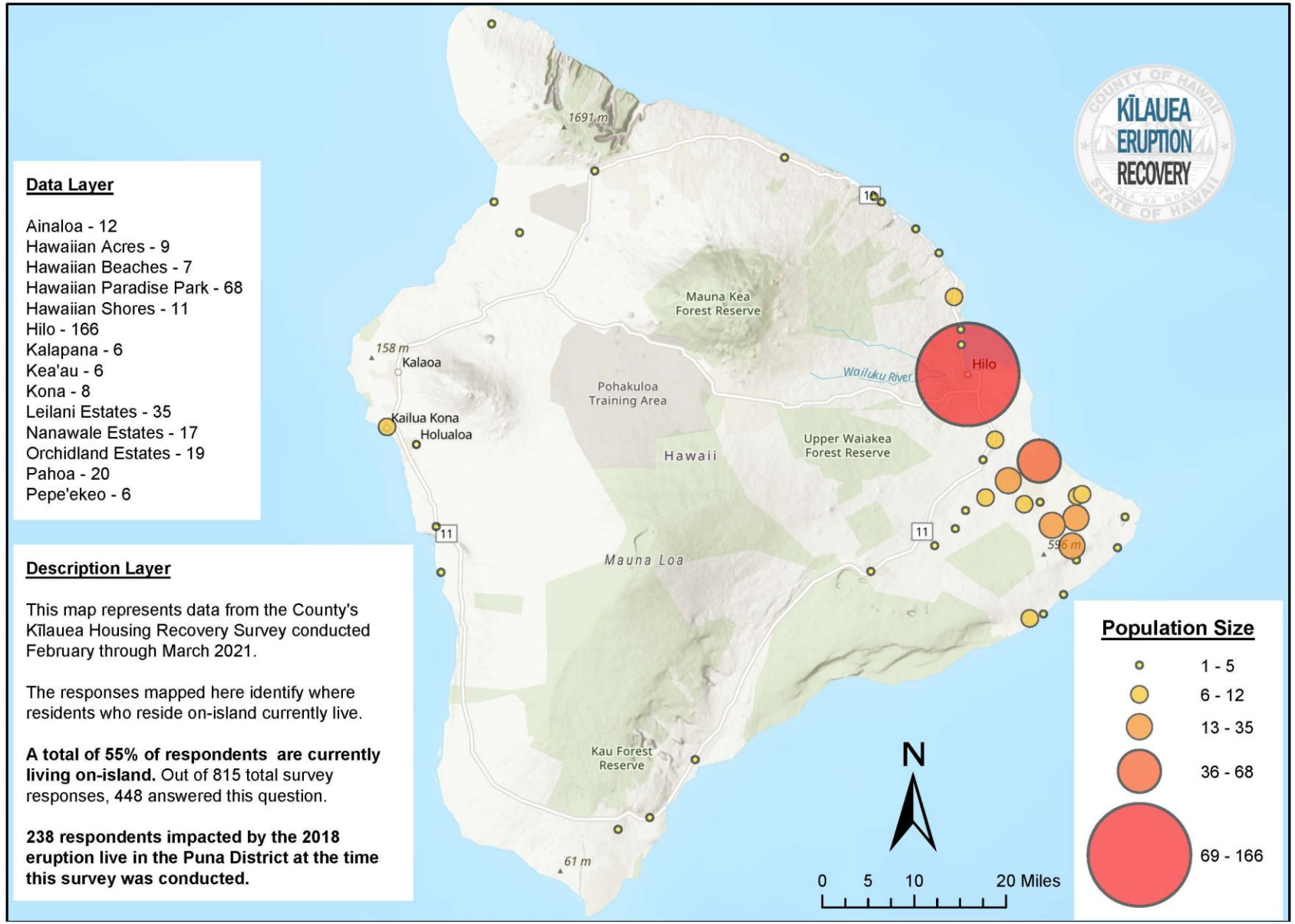
General Ground Rules

- Participants will be muted throughout the meeting.
- If you have a comment or a question, please enter it into the Chat Box by accessing this icon 

at the bottom of you screen.
- Comments and questions will be discussed at the end of the presentation.
- Staff will moderate questions.

Overview of Federal Funding for Water Projects

- The 2018 Kīlauea eruption caused about $40 million in damage to water infrastructure, including the loss of about 14.5 miles of waterlines in lower Puna.
- DWS will receive about $30 million, or 75% of the damage assessment, from the Federal Emergency Management Agency (FEMA) on a reimbursement basis to support water infrastructure improvements. A 25% local match will be supported by State loans for lava recovery.
- Eligible, alternate infrastructure projects can be pursued with FEMA funding under this capped grant program.



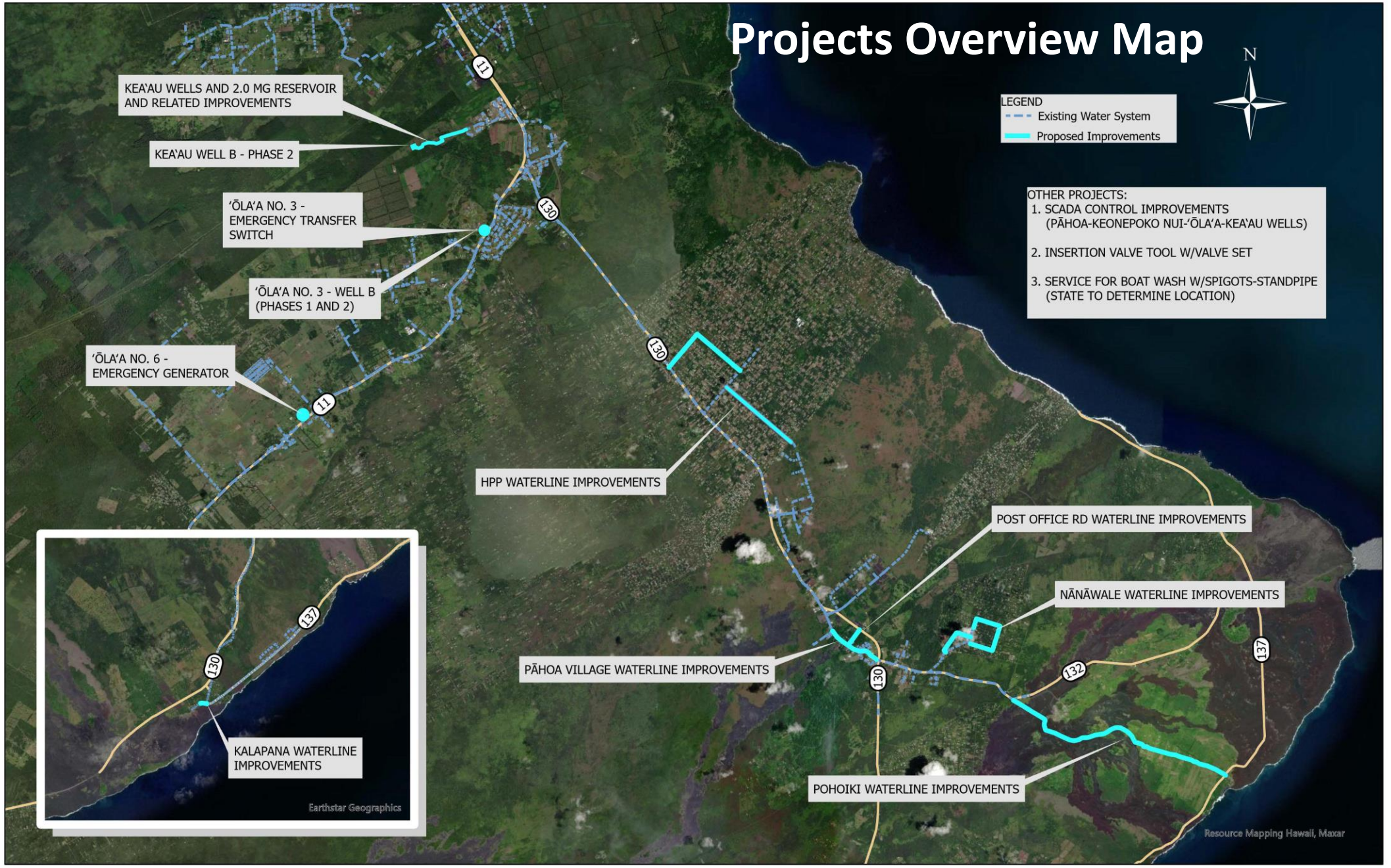
Residents Displaced by the 2018 Kīlauea Eruption: Where They Live On-Island

Esri, CGIAR, USGS, Esri, HERE, Garmin, SafeGraph, FAO, METI/ NASA, USGS, EPA, COHGIS, Kīlauea Recovery Housing Survey

Initial Map Creation: October, 2021

Approach to Identify Projects

- Eligible under FEMA 428 Public Assistance Program Guidelines
- Alignment with Kīlauea Recovery and Resilience Plan
- Re-investment in region impacted by 2018 Kīlauea eruption in light of geological conditions and participation in housing buyout program
- Building resiliency and redundancy into existing water systems
- Service to where eruption-impacted households have relocated to
- Benefit to economic development and addressing growth in Puna
- Coordination with other County and State infrastructure investments


Projects Overview Map
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LEGEND
Existing Water System
Proposed Improvements
OTHER PROJECTS:
1. SCADA CONTROL IMPROVEMENTS (PĀHOA-KEONEPOKO NUI-ʻŌLAʻA-KEAʻAU WELLS)
2. INSERTION VALVE TOOL W/VALVE SET
3. SERVICE FOR BOAT WASH W/SPIGOTS-STANDPIPE (STATE TO DETERMINE LOCATION)
KEAʻAU WELLS AND 2.0 MG RESERVOIR AND RELATED IMPROVEMENTS
KEAʻAU WELL B - PHASE 2
ʻŌLAʻA NO. 3 - EMERGENCY TRANSFER SWITCH
ʻŌLAʻA NO. 3 - WELL B (PHASES 1 AND 2)
ʻŌLAʻA NO. 6 - EMERGENCY GENERATOR
HPP WATERLINE IMPROVEMENTS
POST OFFICE RD WATERLINE IMPROVEMENTS
NĀNĀWALE WATERLINE IMPROVEMENTS
PĀHOA VILLAGE WATERLINE IMPROVEMENTS
POHOIKI WATERLINE IMPROVEMENTS
KALAPANA WATERLINE IMPROVEMENTS
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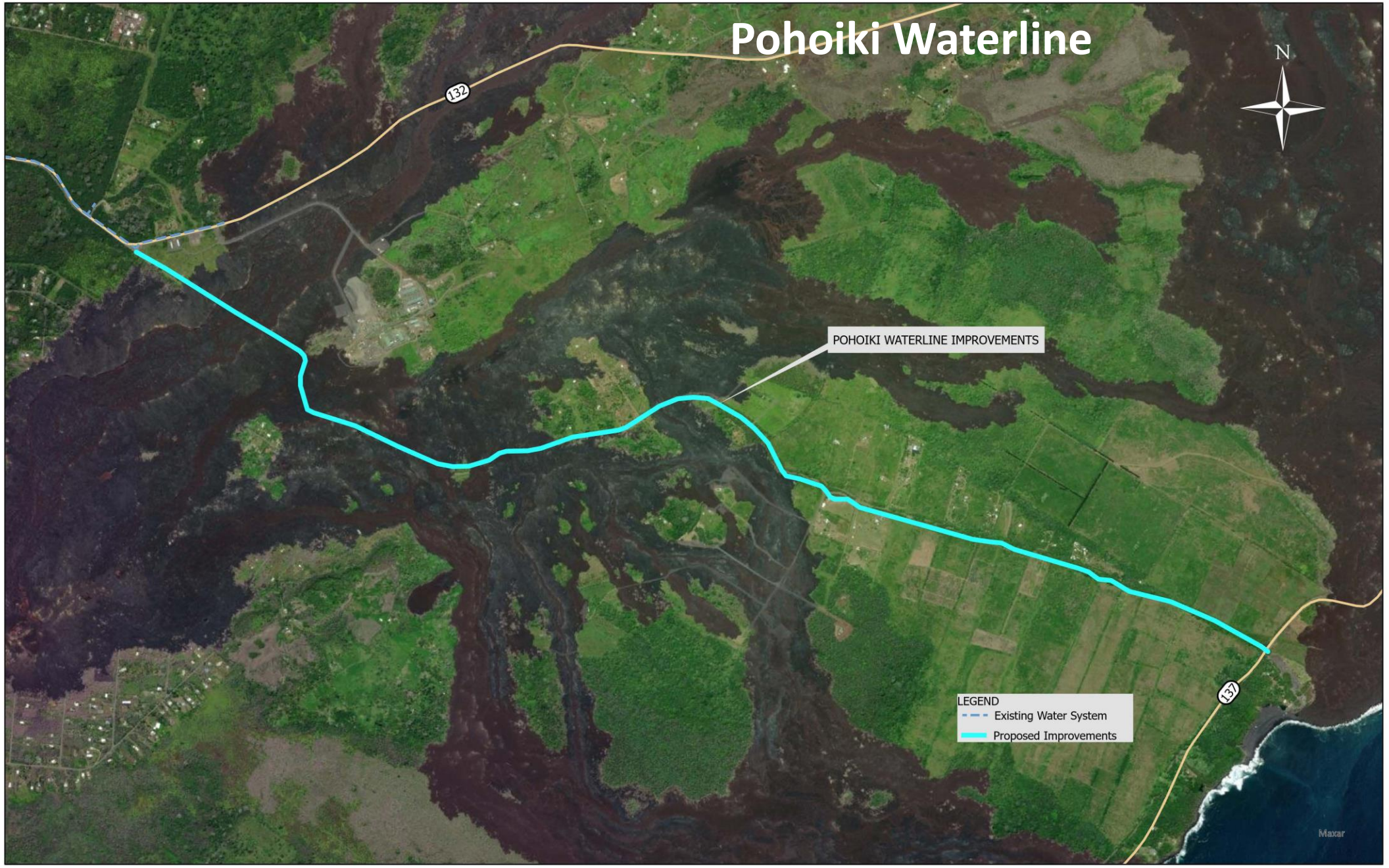
Earthstar Geographics
Resource Mapping Hawaii, Maxar


Pohoiki Waterline
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POHOIKI WATERLINE IMPROVEMENTS
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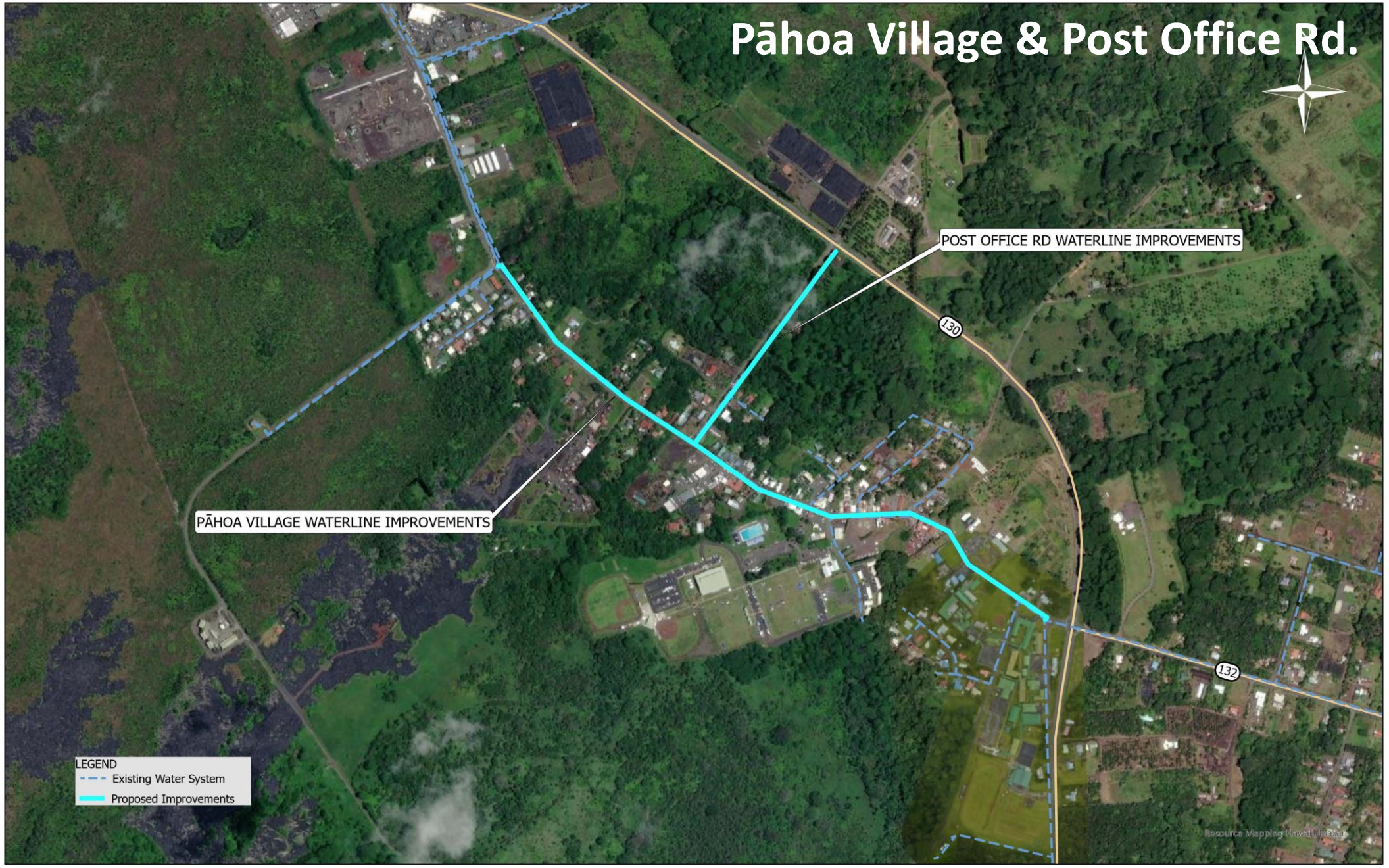
LEGEND
Existing Water System
Proposed Improvements
Maxar

Pohoiki Waterline Improvements

- The proposed waterline project hinges on the ability to install a waterline that won’t be impacted due to subsurface temperatures along the waterline alignment.
- Estimated cost: $6 million
- Estimated construction duration: 24 months
- Service for boat wash, spigots - Contingency for boat wash if waterline to Pohoiki can't be restored.
    - Estimated Cost: $100,000
    - Estimated construction duration: 1 month


Pāhoa Village & Post Office Rd.
POST OFFICE RD WATERLINE IMPROVEMENTS
PĀHOA VILLAGE WATERLINE IMPROVEMENTS
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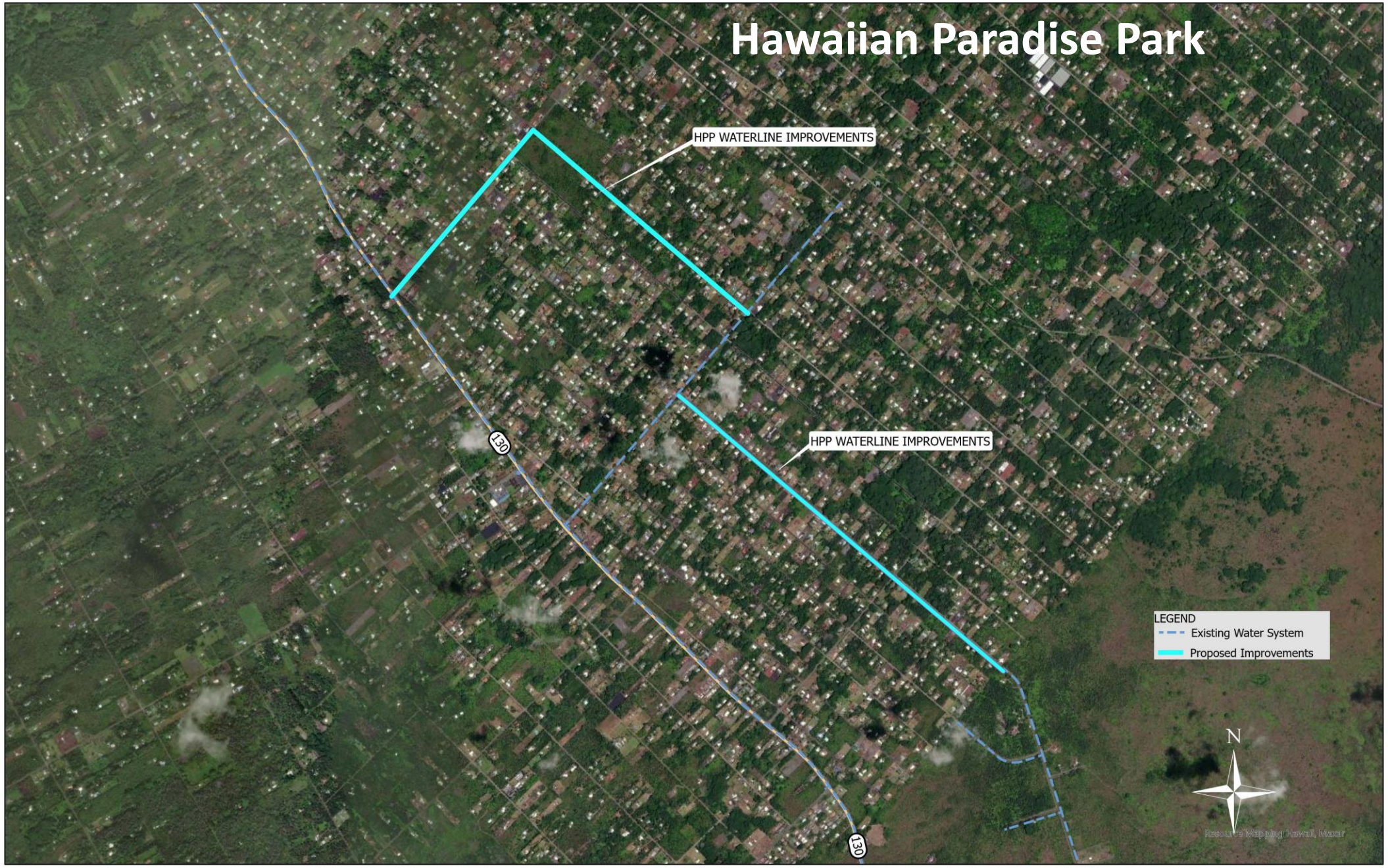
LEGEND
Existing Water System
Proposed Improvements

Pāhoa Village Waterline Improvements

- The proposed project includes the installation of waterlines along the Pāhoa Village Road from Apa‘a Street to the Pāhoa By-Pass Road Intersection.
- The proposed project will supplement the existing waterline within Pāhoa Village Road that was installed in 1961 providing redundancy and improving the resiliency and fire flow capacity along the improvements route.
- Estimated cost: $3 million
- Estimated construction duration: 15 months

Post Office Road Waterline Improvements

- The proposed project includes the installation of a waterline along the Post Office Road from the Pāhoa Village Road to the Pāhoa By-Pass Road Intersection where proposed improvements to the road are being considered.
- The installation of fire hydrants along the proposed waterline route will improve fire protection for the community.
- Estimated cost: $1 million
- Estimated construction duration: 6 months


Hawaiian Paradise Park
HPP WATERLINE IMPROVEMENTS
HPP WATERLINE IMPROVEMENTS
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LEGEND
Existing Water System
Proposed Improvements
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Hawaiian Paradise Park Waterline Improvements

- The proposed project will add an interconnection between the ʻŌlaʻa-Mountain View water system with the Pāhoa water system through the end of the existing waterline in the DHHL Makuʻu Subdivision.
- The proposed improvements will also extend along Kaloli Drive and will be able to serve the County regional park project.
- These water system improvements will improve the redundancy and resiliency for both the ʻŌlaʻa-Mountain View and Pāhoa water systems.
- The installation of fire hydrants along the proposed waterline routes will improve fire protection for the community.
- Estimated cost: $6.5 million
- Estimated construction duration: 18 months


Nānāwale Estates
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NĀNĀWALE WATERLINE IMPROVEMENTS
NĀNĀWALE WATERLINE IMPROVEMENTS
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Existing Water System
Proposed Improvements
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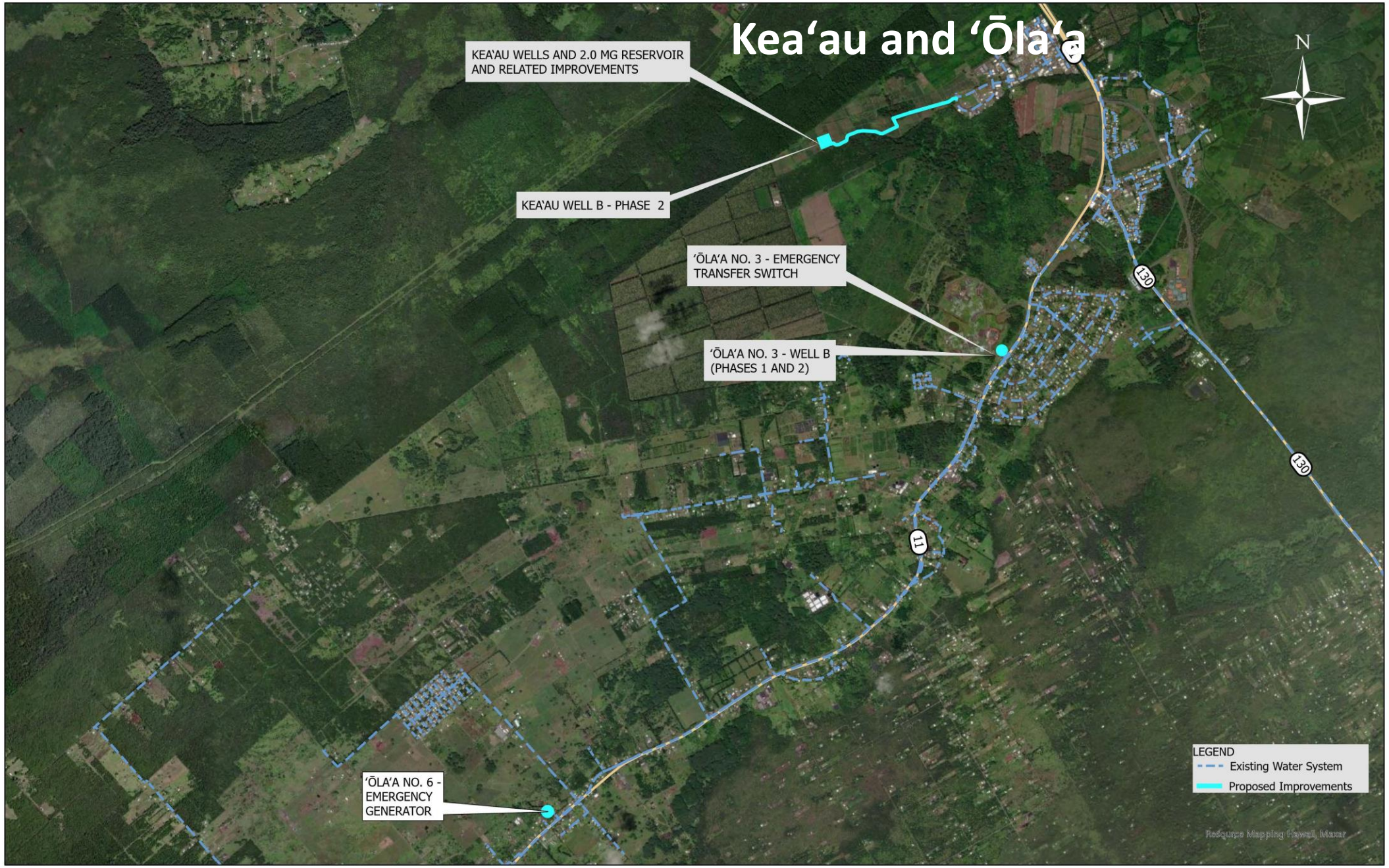
Resource Mapping Hawaii, Maxar

Nānāwale Waterline Improvements

- The proposed project includes the installation of new waterlines within the Nānāwale Estates Subdivision to create a looped system that will improve circulation and resiliency of the existing water system.
- The installation of fire hydrants along the proposed waterline routes will improve fire protection for the community.
- Estimated cost: $3 million
- Estimated construction duration: 15 months


Kea‘au and ‘Ōla‘a
KEA'AU WELLS AND 2.0 MG RESERVOIR AND RELATED IMPROVEMENTS
KEA'AU WELL B - PHASE 2
‘ŌLA‘A NO. 3 - EMERGENCY TRANSFER SWITCH
‘ŌLA‘A NO. 3 - WELL B (PHASES 1 AND 2)
‘ŌLA‘A NO. 6 - EMERGENCY GENERATOR
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LEGEND
Existing Water System
Proposed Improvements
Resource Mapping Hawaii, Maxar

Kea‘au Well & Reservoir Improvements

- This proposed project includes a reservoir, transmission waterline and well above the existing Shipman Industrial Park that will connect an additional water source and storage to the existing ‘Ōla‘a-Mountain View Water System that also services water south to the DHHL Maku‘u Subdivision.
- The ‘Ōla‘a-Mountain View water system is able to provide emergency redundant water service to the Pāhoa water system thus, this project will increase the resiliency to both water systems.
- Estimated cost: $19.2 million
- Estimated construction duration: 48 months

Kea‘au Well B Phase 2 Improvements

- This proposed project will add a second well to the previously noted Kea‘au Well & Reservoir project.
- Estimated cost: $6 million
- Estimated construction duration: 15 months

ʻŌlaʻa System Improvements

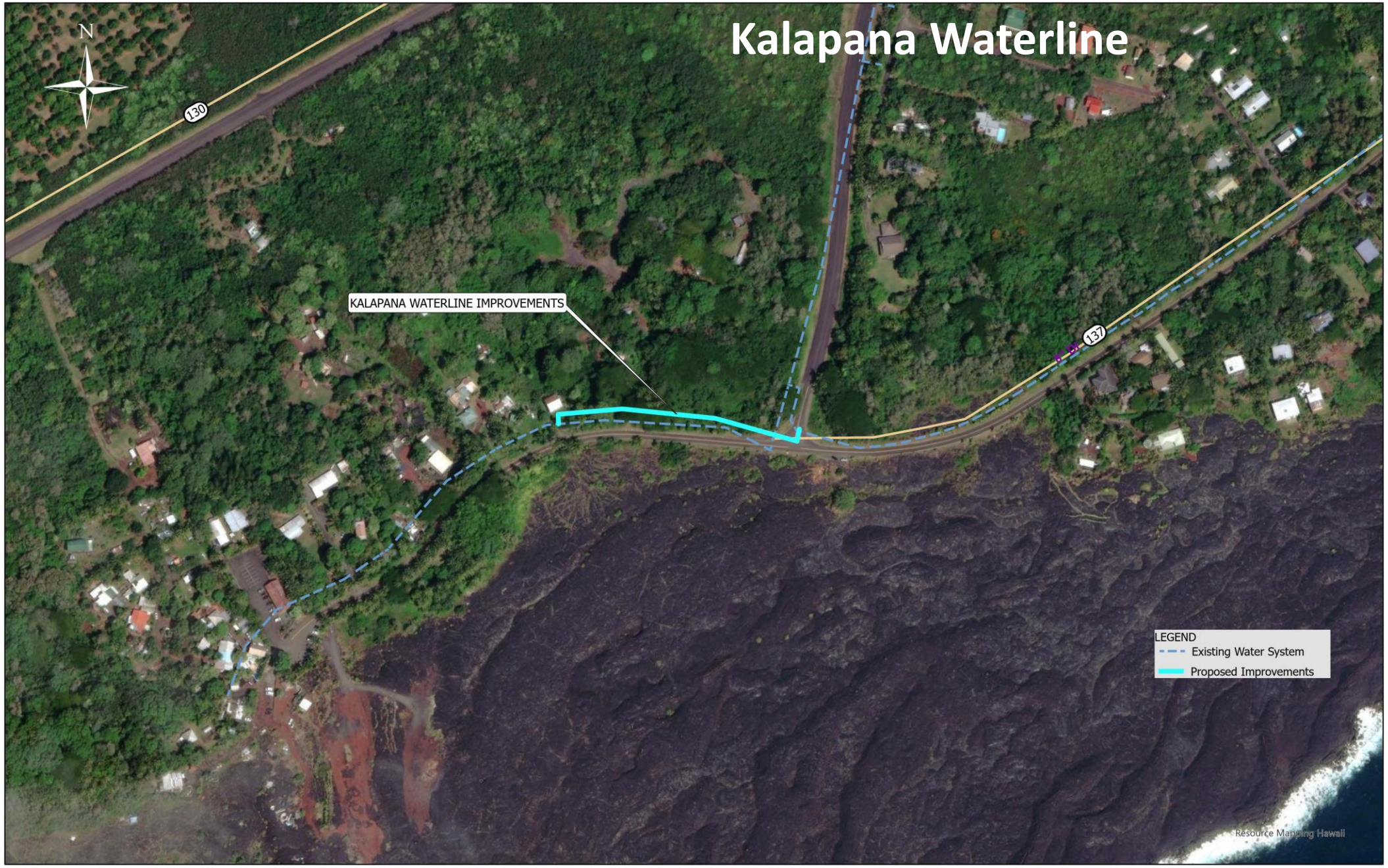
ʻŌlaʻa No. 6 Generator and No. 3 Emergency Transfer Switch:

- The proposed project includes the installation of one portable emergency generator at the ʻŌlaʻa No. 6 well site and the installation of an emergency transfer switch to the existing ʻŌlaʻa No. 3 well.
- The improvements will improve resiliency for both the ʻŌlaʻa-Mountain View and Pāhoa water systems during prolonged power outages.
- Estimated cost: $500,000

ʻŌlaʻa System Improvements

ʻŌlaʻa No. 3 Well B Improvements:

- The proposed project includes an additional source and related improvements at the existing ʻŌlaʻa No. 3 well and reservoir site.
- These improvements will provide additional capacity as well as improve resiliency and redundancy to the existing ʻŌlaʻa-Mountain View water system where there are currently two sources; and will improve the resiliency and redundancy for the Pāhoa water system.
- Estimated cost: $7 million
- Estimated construction duration: 30 months


Kalapana Waterline
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KALAPANA WATERLINE IMPROVEMENTS
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LEGEND
Existing Water System
Proposed Improvements
Resource Mapping Hawaii

Kalapana Waterline Remediation

- The proposed project will relocate a portion of the existing waterline that appears to be leaking out of the inundation area at the intersection of Highways 130 and 137.
- The proposed waterline improvements would decrease water losses within the system, increasing the efficiency of the water system as well as decreasing the electricity costs to run the wells in the system.
- Estimated cost: $150,000
- Estimated construction duration: 3 months

Additional Projects

Supervisory Control and Data Acquisition equipment for Keonepoko Nui, Pāhoa, and ʻŌlaʻa wells:

- The proposed project includes the installation of Supervisory Control and Data Acquisition (SCADA) equipment at existing DWS facilities in the ʻŌlaʻa-Mountain View water system as well as the Pāhoa water system. The improvements improve resiliency by allowing monitoring of the wells and reservoirs remotely through one SCADA system at the Hilo Operations Center.
- Estimated cost: $1 million
- Estimated construction duration: 9 months

Additional Projects

Insertion valve tool and valves to increase system resilience

- The proposed purchase includes the acquisition of an insertion valve tool and pairs of various sized valves.
- This tool will provide DWS the flexibility in emergency situations to install valves at strategic locations while the water system is active or for other waterline work while keeping the number of customers impacted to a minimum.
- Estimated cost: $250,000

Next Steps

- Refine list of alternate infrastructure projects to propose to FEMA.
- Finalize estimated budget, scope, and preliminary design on alternate projects; then submit for FEMA review.
- FEMA completes review of projects, including environmental and historic preservation review.
- FEMA issues Notice to Proceed on approved projects.
- DWS proceeds with designs and subsequent bids for construction.
- DWS completes construction.

Question & Answer

Insights and feedback can be provided via online form:
https://forms.gle/DquFXu4M72hm4Pac6

Mahalo!