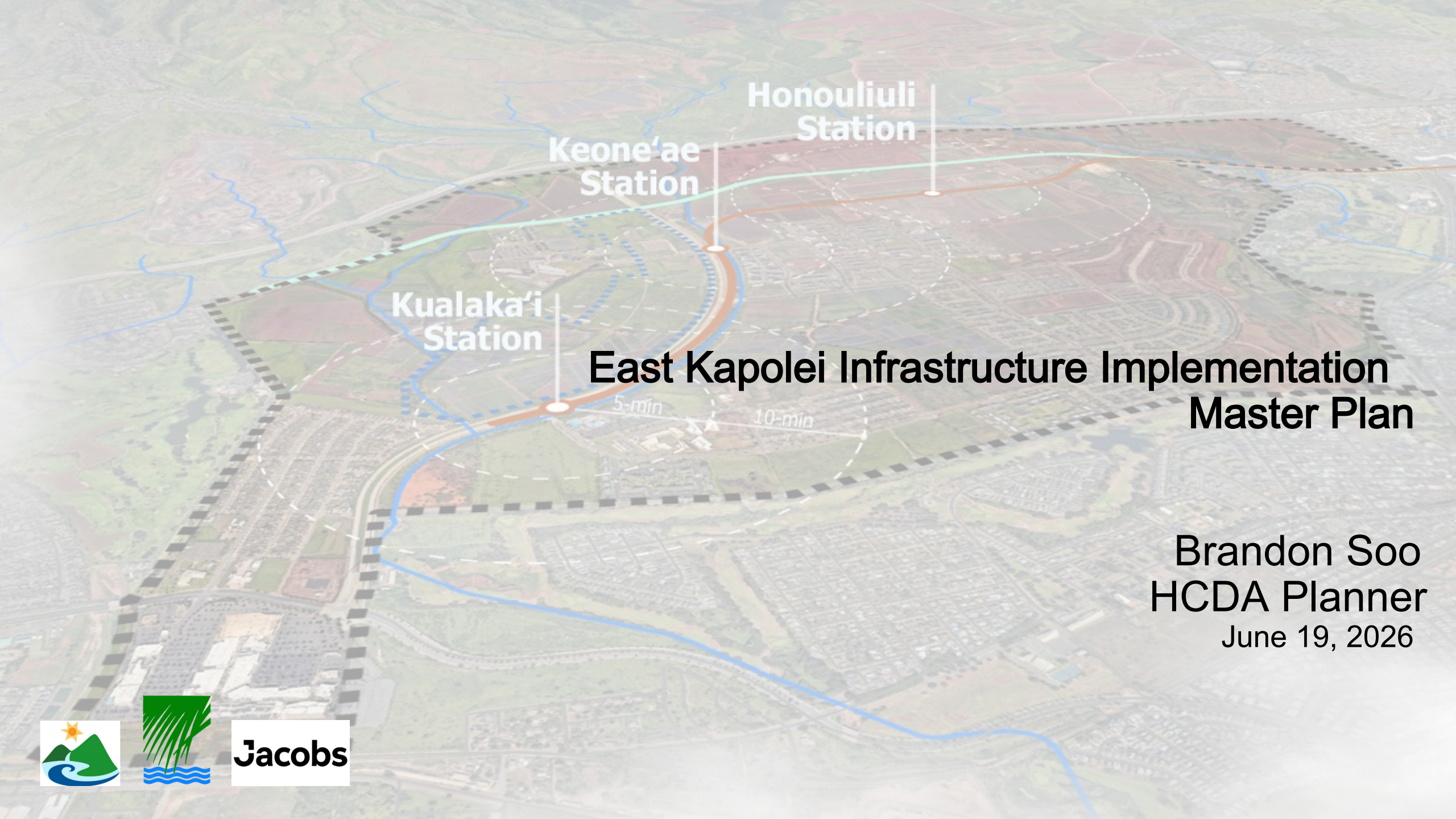


East Kapolei Infrastructure Implementation Master Plan

Brandon Soo
HCDA Planner

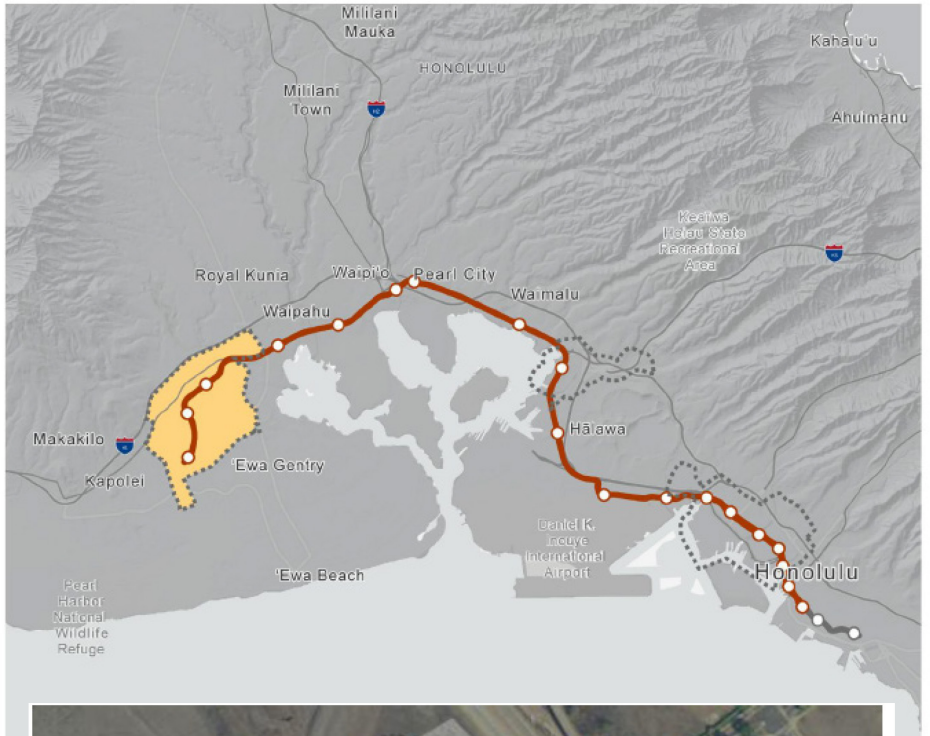
June 19, 2026

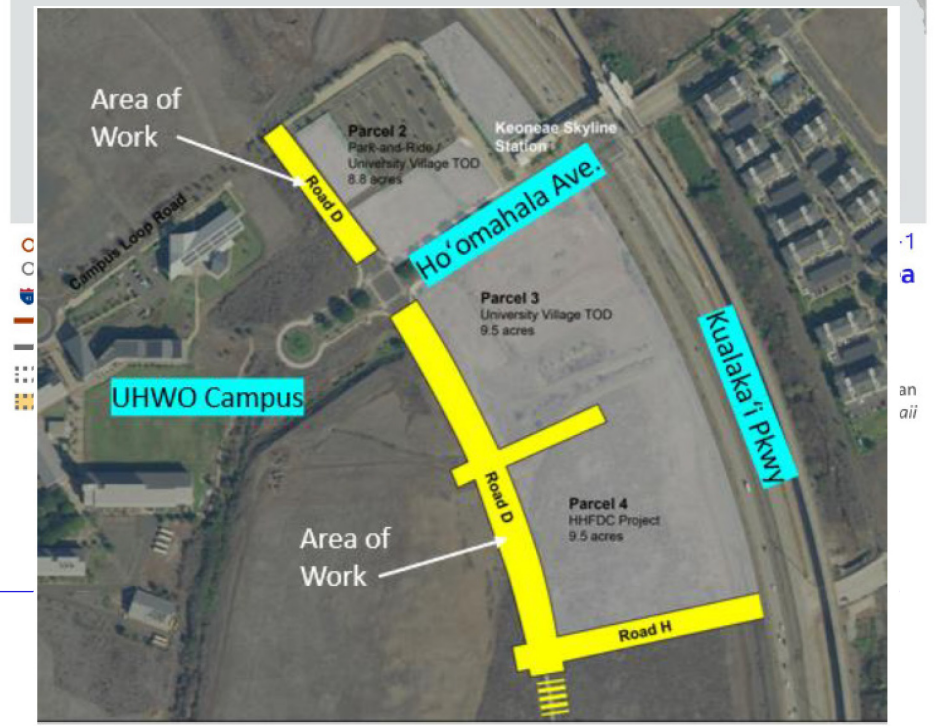
Agenda

- Background
- Project Team and Scope
- Key Findings
- Implementation Framework
- Phase 1 Projects
- Bundling
- Next Steps

Background

- TOD Priority Areas for O‘ahu:
  - East Kapolei
  - Hālawa-Stadium
  - Iwilei-Kapālama
- Act 164, SLH 2023, appropriated funds to plan the infrastructure needed to realize rapid TOD buildout around the three East Kapolei stations.
  - Road D & H : $35 million





Background

- This master plan was developed to help prioritize infrastructure funding across approximately 1,000 acres of state land, and to identify rough order-of-magnitude costs and alternative financing and delivery mechanisms.
- Much of the study area is undeveloped and is owned primarily by four major landowners – the University of Hawai‘i West O‘ahu, DHHL, DLNR, and DR Horton.

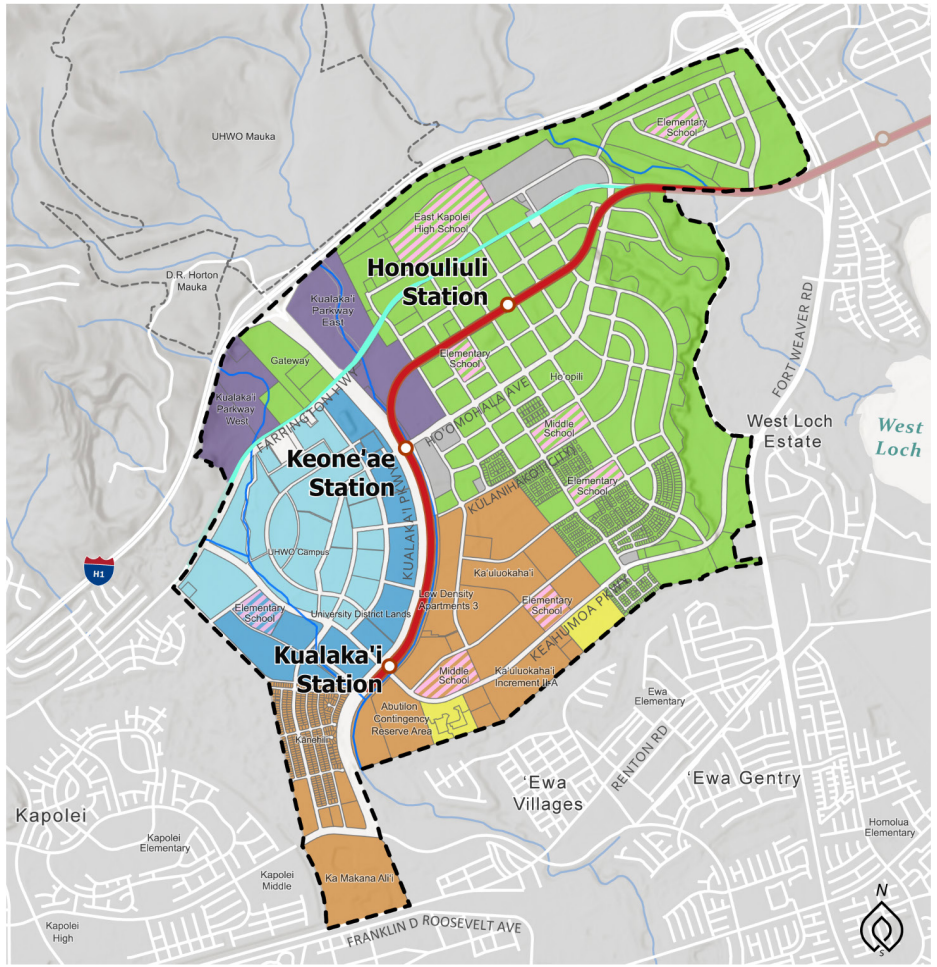


FIGURE 1-2
Major Landowners

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

The Team

Collaborative team of SMEs for each infrastructure system, cost estimators, planners, and experts in funding, financing, & value creation

Combined expertise from Jacobs, HDR, & Ron Ho

Infrastructure systems included in this exercise:

- Sewer,
- Stormwater,
- Potable/non-potable water,
- Electric,
- Telecom, and
- Connectivity/transportation

Project Scope

1. Site and Infrastructure Assessment
   - Review existing conditions
   - Identify information gaps
   - Determine condition assessment and baseline capacities
2. Build-out and Infrastructure Needs
   - Determine build-out scenario
   - Identify information gaps
   - Estimate utility demands
   - Identify infrastructure improvements
3. Strategic Implementation Framework
   - Establish engineering assumptions
   - Order of magnitude cost estimates
   - Critical Path Analysis (CPA)
   - Formulate implementation strategy
   - Identify enabling actions
   - Identify CIP appropriations
   - Define alternative financing and delivery methods

PLANNED BUILDOUT SCENARIO: Anticipated Development by Land Use Type

Land Use Type	Existing	New Total	Total Planned Build-out	Previously Approved Master Plan Total Build-out*	Total Build-out Difference
Residential (DU)	4,211	22,860	27,071	18,964	8,107
Residential (SF)	8,128,900	37,288,800	45,417,700	n/a	n/a
Commercial /Institutional (SF)	2,378,589	5,053,491	7,432,080	8,329,325	-897,245
Industrial/Business Park (SF)	n/a	2,290,252	2,290,252	2,825,000	-534,748
Hotel (Keys)	180	360	540	180	360
Hotel (SF)	106,200	212,400	318,600	n/a	n/a
Public Schools (SF)	155,000	847,000	1,002,000	n/a	n/a
GRAND TOTAL (SF)	10,768,689	45,691,943	56,460,632	n/a	n/a

** OPSD 2020*
DU = dwelling units
n/a = not applicable
SF = square feet

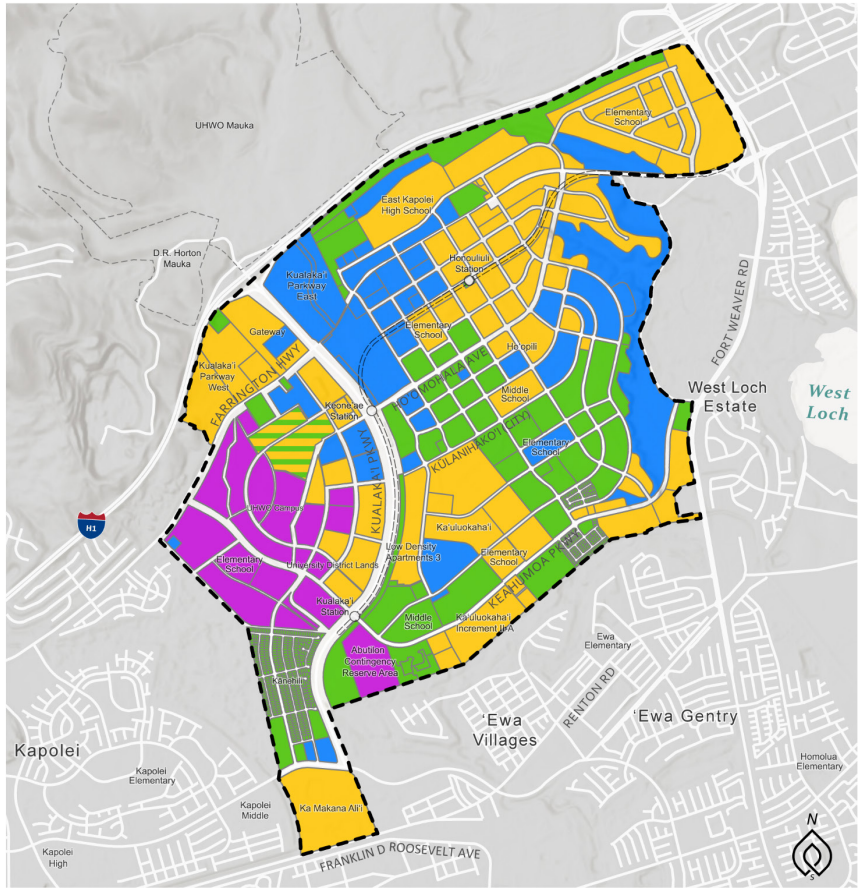


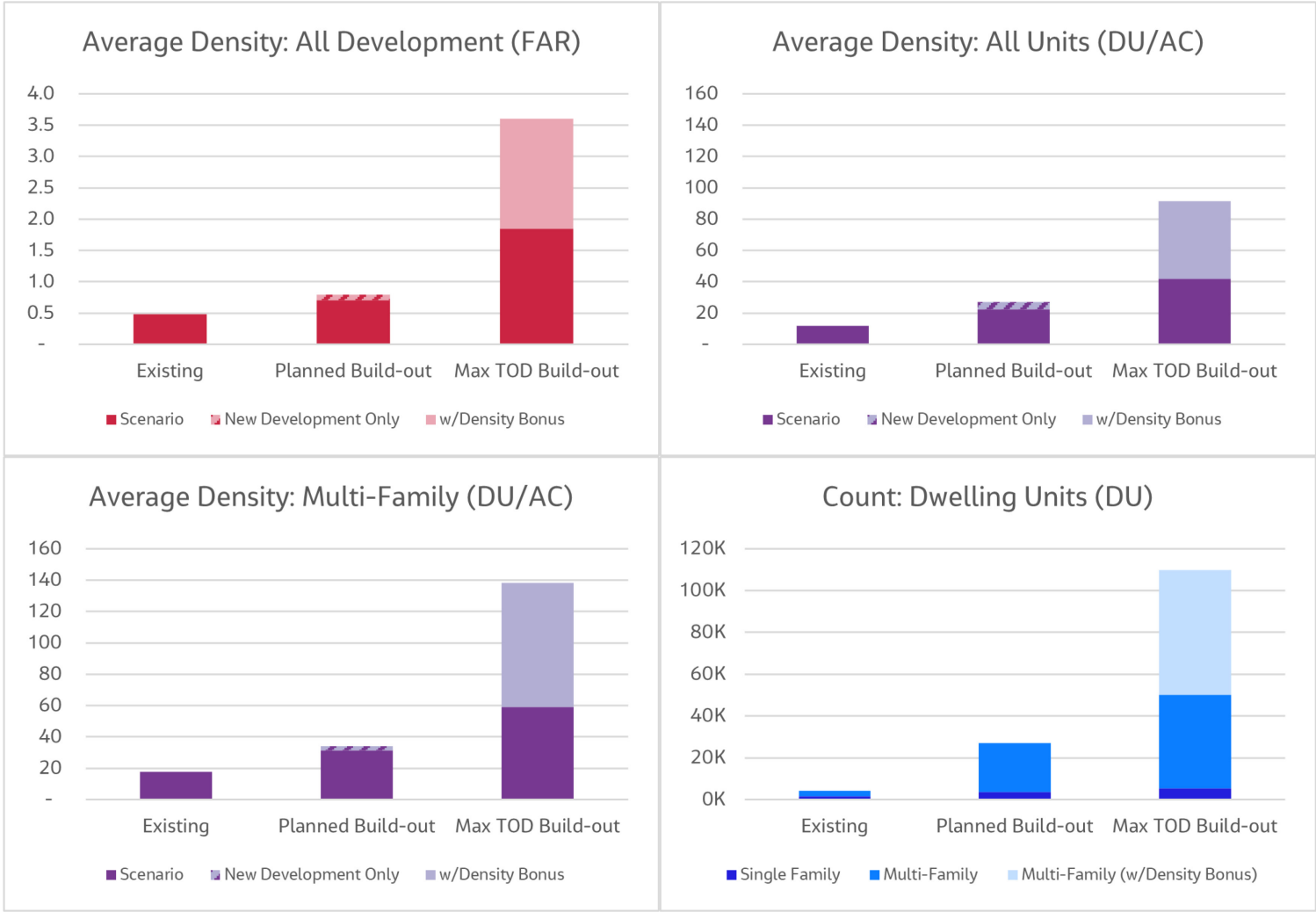
FIGURE 3-1
Planned Build-out: Development Phasing

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii, City and County of Honolulu, Esri, NASA, NGA, USGS, FEMA

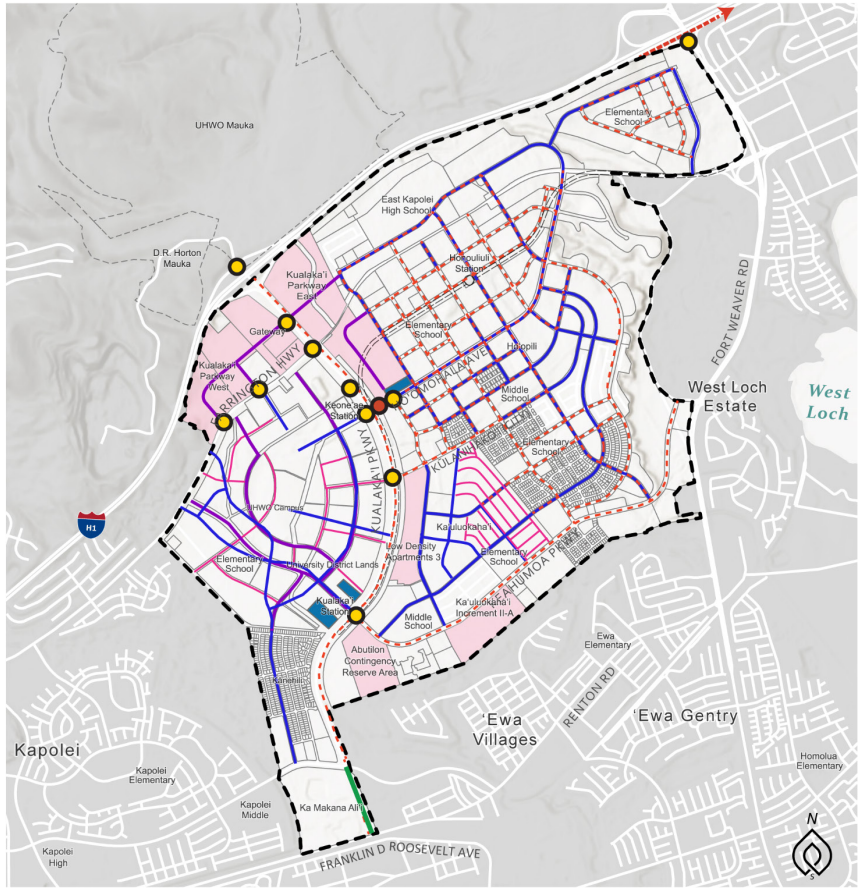
Build-out Scenario Comparisons

- **28%** of the project area's developable land **has already been built out** (existing).
- There is opportunity to achieve greater density under the proposed TOD zoning, which the State and landowners could explore as the area continues to develop.



KEY FINDINGS: Transportation

- The timing of roadway, bike, pedestrian, street tree, parking, and Complete Street improvements are directly linked to the development of the parcels.
- A few offsite regional transportation improvements (that is, projects that are not within a development parcel but are required due to the impacts of a proposed development) are included in the project list.
- Multiple gaps in transportation exist, and the projects identified in this study may shift as new plans and reports are made available. The current transportation gaps include the following:
  - The update to the 2014 Hoʻopili traffic impact analysis report is complete but has not been released because it has not yet received approval from all the reviewing agencies.
  - UHWO, DHHL, and DLNR have provided preliminary information on their parcels but have not performed recent traffic studies that are required as a prerequisite for development plan approval.



East Kapolei Project Area
Rail Stations
Skyline Rail Corridor
Park and Ride Lots
UHWO Station Multimodal Access Improvements
Roadway Intersection Improvements
Kualakaʻi Parkway Extension
H-1 Freeway Widening
Secondary Roads
Minor Roads
Bike Lanes*
Minor Roads (Undefined)
Shared Use Paths*

FIGURE 3-3
All Identified Transportation Improvement Projects

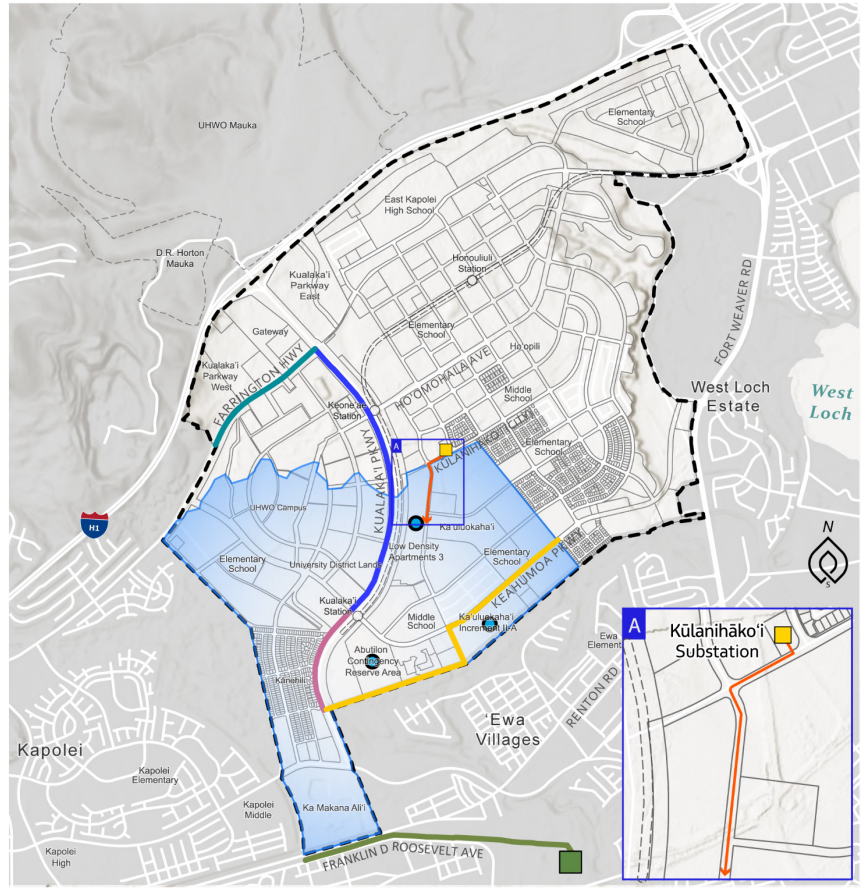
East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii, City and County of Honolulu, Esri, NASA, NGA, USGS, FEMA

*D.R. Horton Bike Lanes and Shared Use Paths are shown for connectivity purposes and not included in the Project List

KEY FINDINGS: Sanitary Sewer

- Multiple improvements will need to be completed in phases as each development comes online to allow the wastewater system to function properly.
- UHWO and DHHL have provided preliminary development information on their parcels but have not submitted the necessary wastewater master plans that are required to obtain city approval and ensure properly sized sewer upgrades and wastewater treatment capacities are in place.



East Kapolei Project Area
Rail Stations
Skyline Rail Corridor
12kV Line Extension to DHHL land
Hawaiian Electric Substation
Keahumoa Trunk Sewer Upgrade (36" to 42")
Kualaka'i Trunk Sewer Extension to Farrington Hwy (30")
New 18" Farrington Highway Sewer
Kualaka'i Trunk Sewer Upgrade (30" to 36")
Kapolei Interceptor Upgrade (42" to 48")
Honouliuli Wastewater Treatment Plant
R1 Water Service Connections
1.0 MG Potable Water Tank in 215-ft Service Zone

FIGURE 3-4
All Identified Utility Improvement Projects (Non-Transportation)

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii, City and County of Honolulu
Esri, NASA, NGA, USGS, FEMA

KEY FINDINGS: Storm Drainage

- No inter-developmental CIPs are proposed.
- Consolidating stormwater infrastructure would be challenging but would free up developable land around the rail stations currently being used as stormwater facilities.

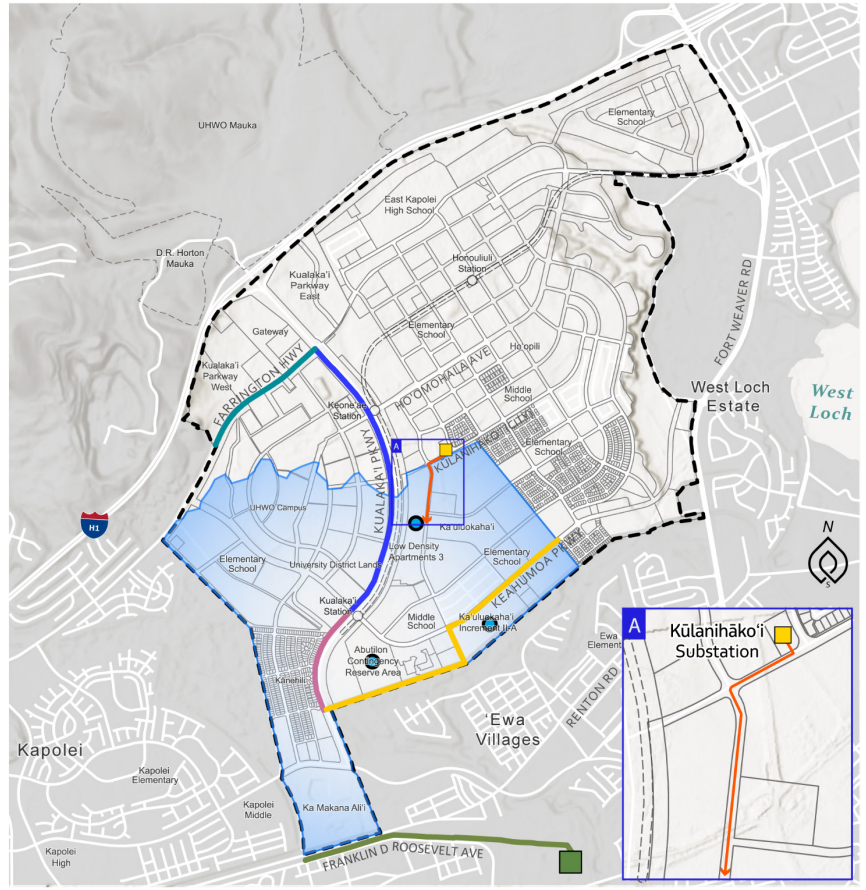


FIGURE 3-4
All Identified Utility Improvement Projects (Non-Transportation)

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii, City and County of Honolulu
Esri, NASA, NGA, USGS, FEMA

KEY FINDINGS: Water

- Most potable and non-potable water system improvements needed to support the planned build-out of the project area have either already been constructed or have been identified and funded.
- Nominal improvements to the recycled water system are required to support DHHL's Kaʻuluokahaʻi multi-family parcels.
- Additional regional improvements to the water system may be beneficial; however, none have been identified as enabling or critical infrastructure needs.

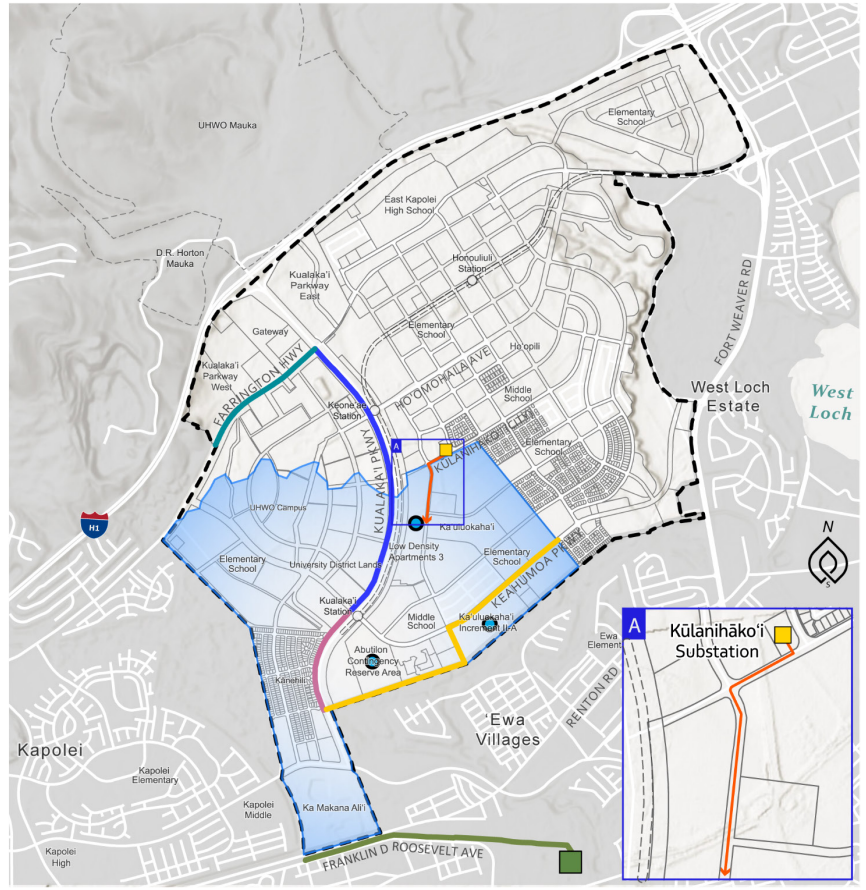


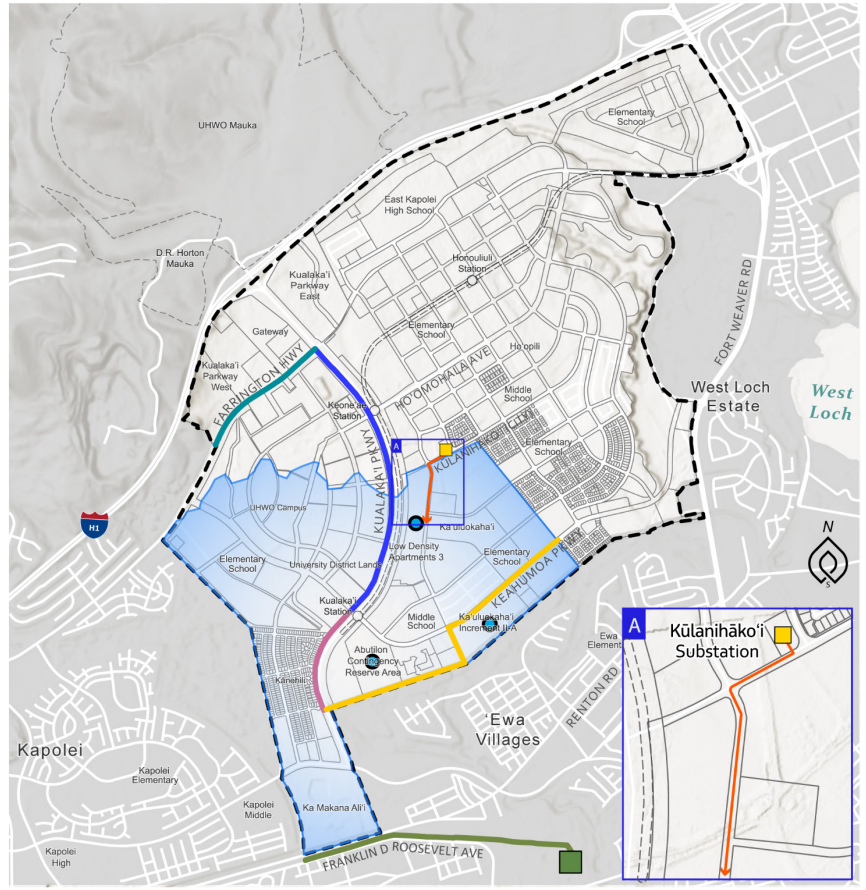
FIGURE 3-4
All Identified Utility Improvement Projects (Non-Transportation)

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii, City and County of Honolulu
Esri, NASA, NGA, USGS, FEMA

KEY FINDINGS: Electrical Power

- Several inter-development electrical infrastructure improvements to the project area needed to support future growth have already been completed.
- A cable installation (or line extension) for DHHL East Kapolei Increment II has been identified as a project in the Ho‘opili area and will further solidify a robust network of electrical infrastructure in the EKMP area.



East Kapolei Project Area
Rail Stations
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12kV Line Extension to DHHL land
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New 18" Farrington Highway Sewer
Kualaka'i Trunk Sewer Upgrade (30" to 36")
Kapolei Interceptor Upgrade (42" to 48")
Honouliuli Wastewater Treatment Plant
R1 Water Service Connections
1.0 MG Potable Water Tank in 215-ft Service Zone

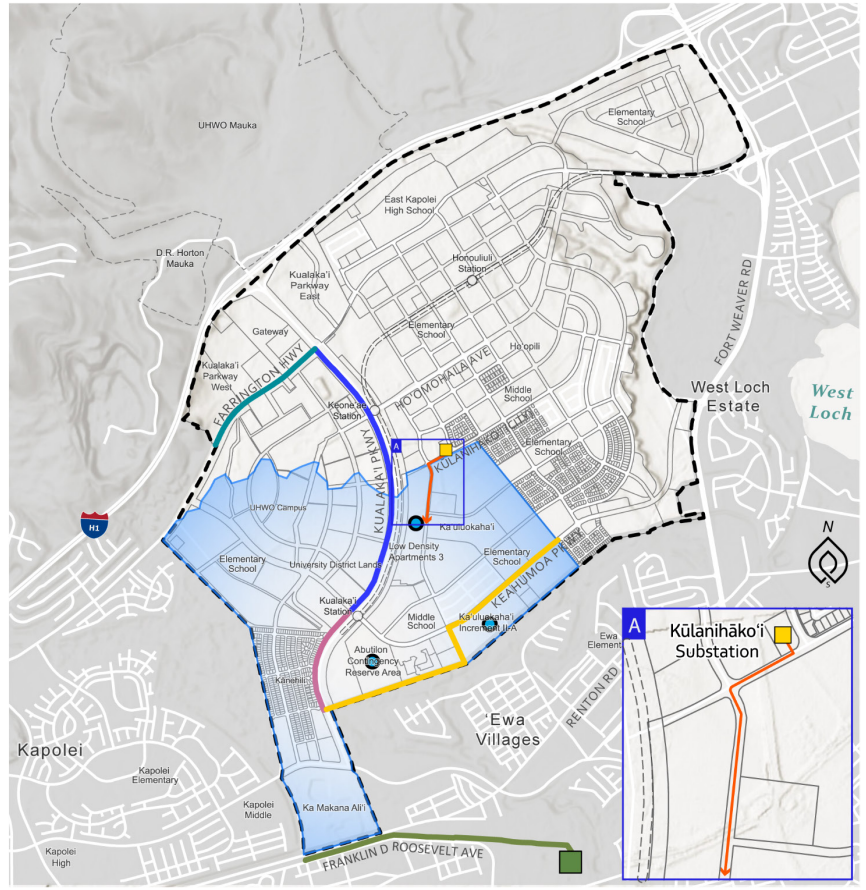
FIGURE 3-4
All Identified Utility Improvement Projects (Non-Transportation)

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii, City and County of Honolulu
Esri, NASA, NGA, USGS, FEMA

KEY FINDINGS: Telecommunications

- Current telecom infrastructure within the EKMP area operates well below capacity; as such, no inter-developmental CIPs are proposed.
- Increases to the fiberoptic trunking capacity required to support the proposed build -out will be planned, designed, and funded by the respective telecommunications service providers.



East Kapolei Project Area
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FIGURE 3-4
All Identified Utility Improvement Projects (Non-Transportation)

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

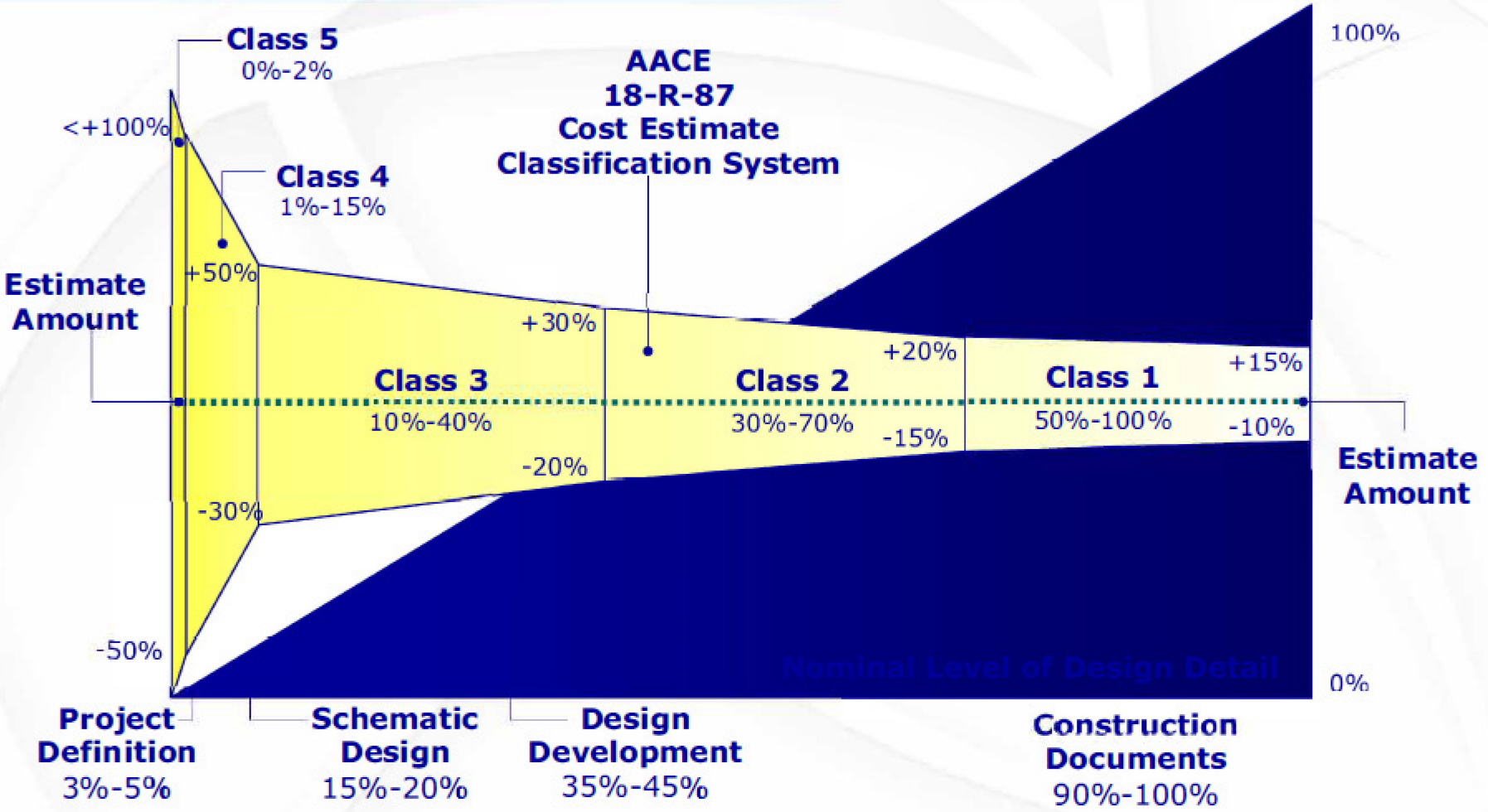
Map Credit: State of Hawaii, City and County of Honolulu
Esri, NASA, NGA, USGS, FEMA

Infrastructure Project List

Build-out and Infrastructure Needs

Project	Agency/Developer	Location Detail	Description	Phase(s)
Sanitary Sewer				
Keahumoa Trunk Sewer Upgrade (36-inch to 42-inch)[x]	DLNR and DHHL (12%) D.R. Horton (73%) CCH (15%)	Approximately a block west of Iwikuamo'o Street and Keahumoa Parkway intersection and down Mango Road to Kualaka'i Parkway	Upgrade the existing 36-inch trunk sewer to 42 inches.	Phase 1 (2025 to 2029)
Kualaka'i Trunk Sewer Extension to Farrington Highway (30-inch)	DLNR/DHHL/D.R. Horton (no allocation available)	Kualaka'i Parkway North of Keahumoa Parkway to Farrington Highway	Extend the 30-inch trunk sewer.	Phase 2 (2030 to 2039), before Kualaka'i East and West development
New 18-inch Farrington Highway Sewer	DLNR/D.R. Horton (no allocation available)	Along Farrington Highway, west of Farrington Highway and Kualaka'i Parkway	Install a new 18-inch sewer.	Phases 2 and 3 (2030 to 2049), following DLNR Kualaka'i West project schedule
Kualaka'i Trunk Sewer Upgrade (30-inch to 36-inch)[x]	DLNR and DHHL (6%) D.R. Horton (5%) UHWO (75%) CCH (5%)	South of Keahumoa Parkway and Kualaka'i Parkway intersection to Kualaka'i Parkway and Mango Road intersection	Upgrade the existing 30-inch trunk sewer to 36 inches.	Phase 3 (2040 to 2049), if UHWO Mauka is not downsized
Kapolei Interceptor Upgrade (42-inch to 48-inch)	DLNR and DHHL (9%) D.R. Horton (41%) UHWO (34%) CCH (15%)	Franklin D Roosevelt Avenue to Honouliuli Wastewater Treatment Plant	Upgrade the existing 42-inch interceptor sewer to 48 inches.	Phase 3 (2040 to 2049), if UHWO Mauka is not downsized
Water: Potable				
1 MG potable water tank in the 215-foot service zone	UHWO	215-foot service zone	Expand the storage capacity of the 215-foot service zone by adding 1 MG of additional storage.	Phase 3 (2040 to 2049)
Water: Non-potable				
R1 water service connection at the Abutilon Contingency Reserve Area	DHHL	Abutilon Contingency Reserve Area	Provide 4-inch service connection to the 8-inch R1 main within the Keahumoa Parkway right-of-way.	Phase 3 (2040 to 2049)
R1 water service connection at the LDA-3 parcel	DHHL	LDA-3 parcel	Provide 4-inch service connection to the 8-inch R1 main within the extension of the Māweke Street right-of-way.	Phase 2 (2030 to 2039)
R1 water service connection at the Increment II-A parcel	DHHL	Increment II-A parcel	Provide 4-inch service connection to the 8-inch R1 main within the extension of the Keahumoa Parkway right-of-way.	Phase 2 (2030 to 2039)
Electrical Power				
12-kV Line Extension	DHHL	From the Kūlanihāko'i Substation to DHHL land	Circuits from the Kūlanihāko'i Substation are planned to provide power to Increment II subdivisions D, E, and F.	Phase 2 (2030 to 2039)
Transportation: Bikeway and Pedestrian Improvements				
Kualaka'i Parkway Off-street Pathway (DTS 2-47)	HDOT	H-1 Fwy to Kapolei Parkway	Add a 10-foot concrete walkway (shared-use path) including street trees. A portion from Farrington Highway to Kapolei Parkway is already constructed.	Phase 3 (2040 to 2049)
East Kapolei II Development Bikeways (DTS RD-9)	DHHL	East Kapolei II Development	Future roads should include bike lanes.	Phase 2 (2030 to 2039)
Ho'opili Bikeways (DTS RD-10)	D.R. Horton	Ho'opili Development	A proposed internal bike network (shared-use path) where future roads should include bike lanes.	Phases 1 and 2 (2025 to 2039)
UHWO Bikeways (DTS RD-19)	UHWO	Keahumoa Parkway, Ho'omohala Avenue, Road D, Road C, and two paths not along roads	Future roads should include bike lanes.	Phases 1 through 3 (2025 to 2049)
Kinoiki Street Bike Lane (DTS 2-45)	DHHL	Kapolei Parkway to UHWO development	Add bike lane striping to existing streets.	Phase 2 (2030 to 2039)
Maunakapu Street Bike Lane (DTS 3-51)	DHHL	Keahumoa Parkway to end	Add bike lane striping to existing streets.	Phase 2 (2030 to 2039)
Māweke Street Bike Lane (DTS 3-52)	DHHL	Keahumoa Parkway to end	Add bike lane striping to existing streets.	Phase 2 (2030 to 2039)

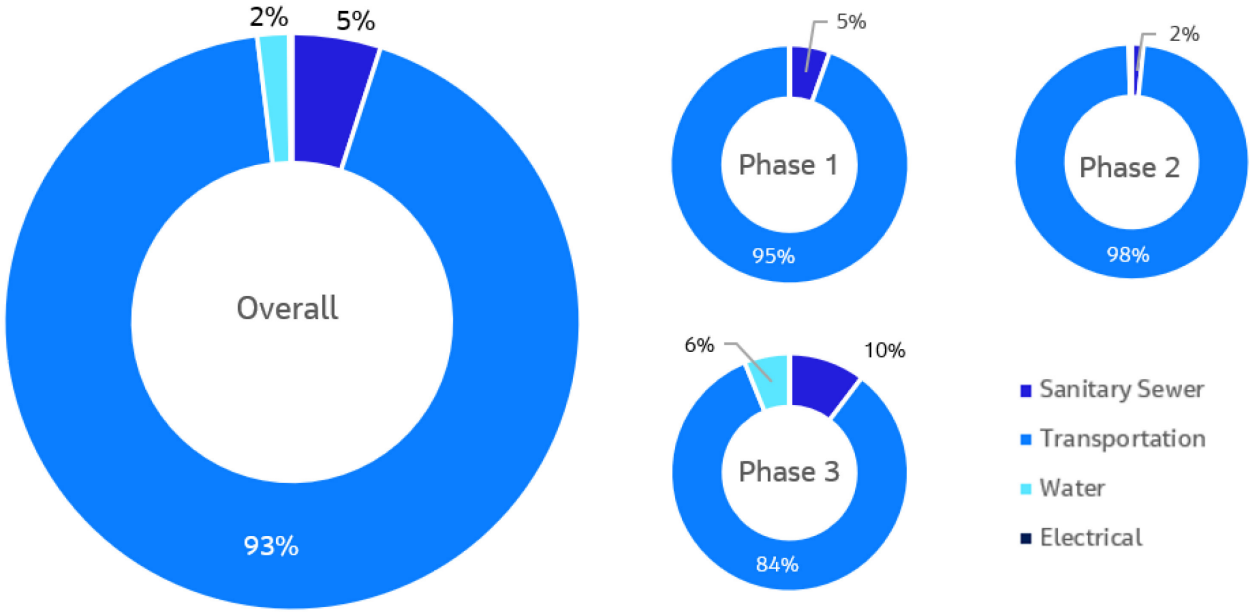
AACE – Classification System



Construction Cost Estimate Accuracy Ranges

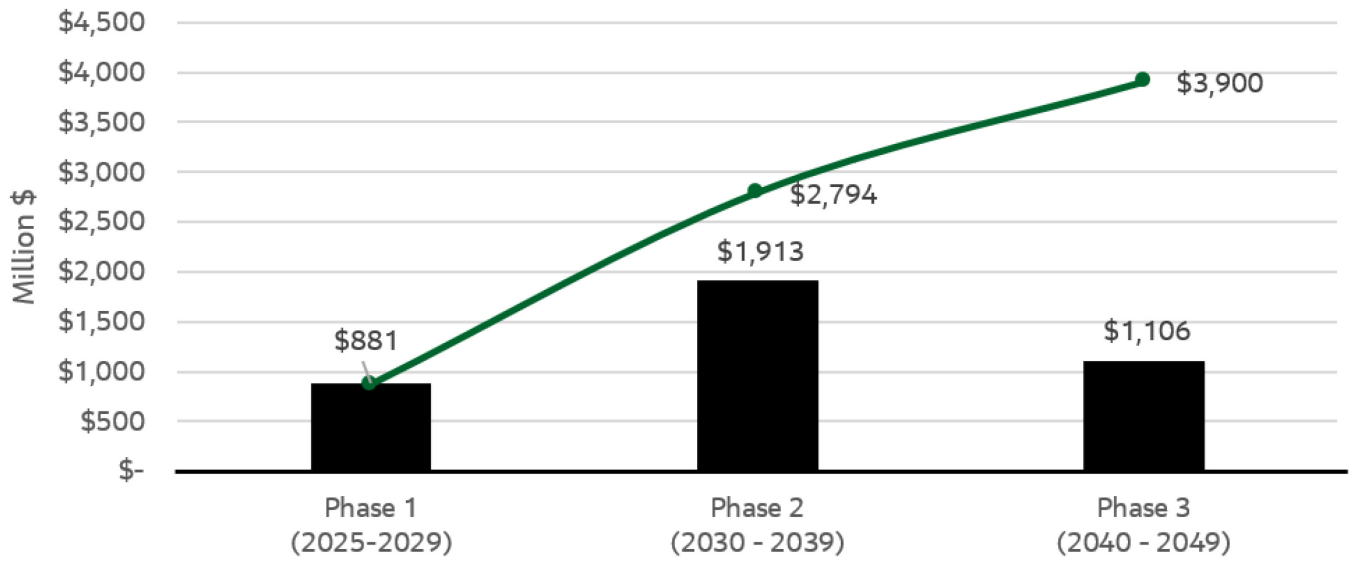
Infrastructure System Breakdown

- Transportation improvements represent the largest share of projected capital expenditures across all phases of the master plan
- Overall, 93% of projected expenditure
- Transportation focused spend reflects the need to establish functional mobility networks before significant development can proceed



Capital Expenditure by Phase

- The total estimated capital requirement is $3.9 billion over the master plan's 25-year horizon
- The schedule developed produces cumulative capital uses of $0.88 billion in Phase 1, $1.91 billion in Phase 2, and $1.11 billion in Phase 3
- Phased structure reflects the need to deliver foundational infrastructure early
- Distribution of costs across phases also provides flexibility to adjust sequencing if funding availability or market conditions shift



KEY FINDINGS: Strategic Implementation Framework

Strategy	Key Findings
Bundling	Project bundling can generate efficiency. Clustering related projects into coherent financing bundles along established corridors can improve funding competitiveness, financing scale, procurement efficiency, and delivery coordination.
Funding Stack Matrix	A ranking matrix can be used as an implementation tool. This funding and financing matrix provides a view of capital sources for potential project financing bundles. This informs decision-making, prioritization, and project packaging.
Iterative Implementation	Application and execution will be iterative. Because of technical complexity and the number of agencies, communities, developers, and capital providers involved, implementation will require repeated refinement as projects move forward.
Transportation-Lead	Transportation is the lead asset class. Most of the EKMP infrastructure program is made up of transportation projects, making mobility investment the anchor of the overall strategy.

Project Locations (Phase 1 Only)

Table 6-1. Proposed Funding Matrix for Phase 1 Projects (2025 to 2029)

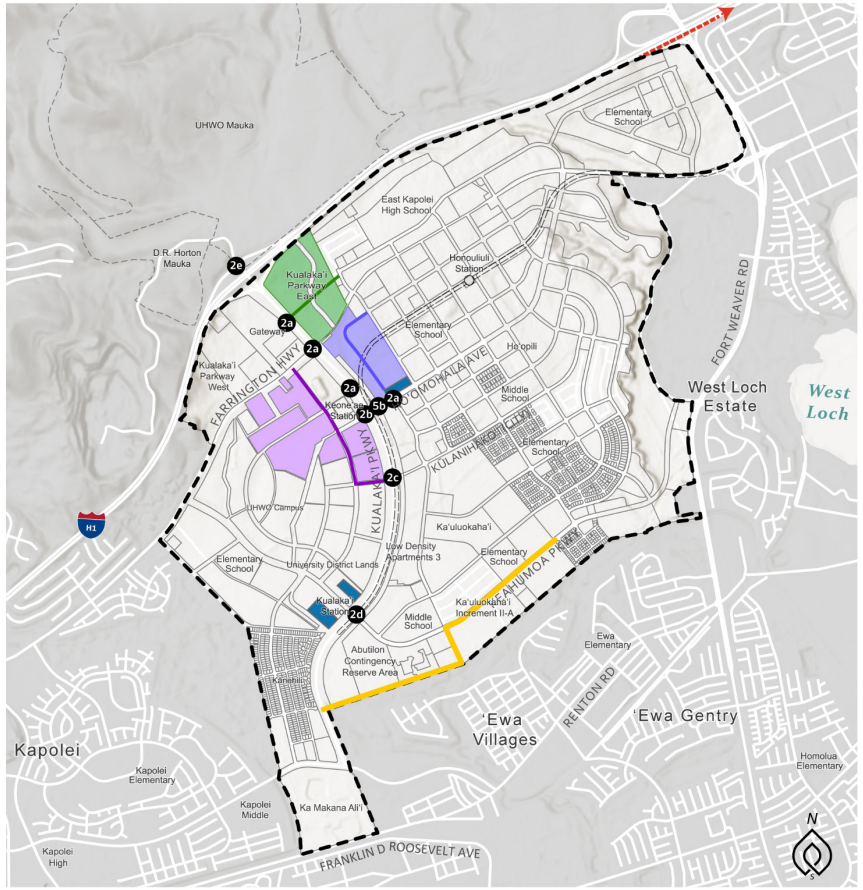
Project #s[a]	Project Description	Estimated Direct Cost (millions)	Grants	Appropriations	Loans	Bonding	Fees and Taxes	Developer Contributions	Other
0	Keahumoa Trunk Sewer Upgrade from 36-inch to 42-inch	$28.6	MP	P	LP	MP	MP	LP	LP
1	DLNR Keone'ae Station. Parcel Roads	$55.9	MP	P	P	MP	P	P	LP
2a	DLNR Kualaka'i Parkway Intersection Improvements	$33.3	MP	P	MP	MP	P	P	LP
2b	Kualaka'i Parkway and Ho'omohala Avenue Intersection Improvements	$14.5	MP	P	MP	MP	P	P	LP
2c	Kualaka'i Parkway and Kūlanihāko'i Street Intersection Improvements	$26.7	MP	P	MP	MP	P	P	LP
2d	Kualaka'i Parkway and Keahumoa Parkway Intersection Improvements	$26.7	MP	P	MP	MP	P	P	LP
2e	Westbound H-1 Freeway and Kualaka'i Parkway Interchange Improvements	$21.0	MP	P	MP	MP	P	P	LP
3	DLNR Kualaka'i East Parcel Roads	$40.5	MP	P	MP	MP	P	MP	LP
4	H-1 Freeway Widening	$130.9	MP	P	MP	MP	P	LP	MP
5a	Park-and-Ride Lots	$60.0	MP	P	MP	MP	P	P	LP
5b	UHWO Station Multimodal Access Improvements	$8.7	MP	MP	P	MP	P	P	LP
6	UHWO Roads	$75.2	MP	P	MP	MP	P	MP	LP

[a] Project numbers align with Figure 6-1.

Notes on applicability:

- Grants are advisable whenever available.
- Appropriations are feasible for small projects or specific design costs.
- Loans are most relevant for larger projects or bundles.
- Fees and taxes are likely used in combination with other financing.
- Developer contributions are likely if a project falls within one developer or landowner.
- Other financing is most relevant for larger projects or bundles.

MP = Most Probable
P = Probable
LP = Less Probable



East Kapolei Project Area
0 - Keahumoa Trunk Sewer Upgrade from 36-inch to 42-inch
1 - DLNR Keone'ae Station Parcel Roads
2a - DLNR Kualaka'i Pkwy Intersection Improvements
2b - Kualaka'i Pkwy & Ho'omohala Ave Intersection Improvements
2c - Kualaka'i Pkwy & Kūlanihāko'i St Intersection Improvements
2d - Kualaka'i Pkwy & Keahumoa Pkwy Intersection Improvements
2e - Westbound H-1 Fwy & Kualaka'i Pkwy Interchange Improvements
3 - DLNR Kualaka'i East Parcel Roads
4 - H-1 Freeway Widening
5a - Park and Ride Lots
5b - UHWO Station Multimodal Access Improvements
6 - UHWO Roads

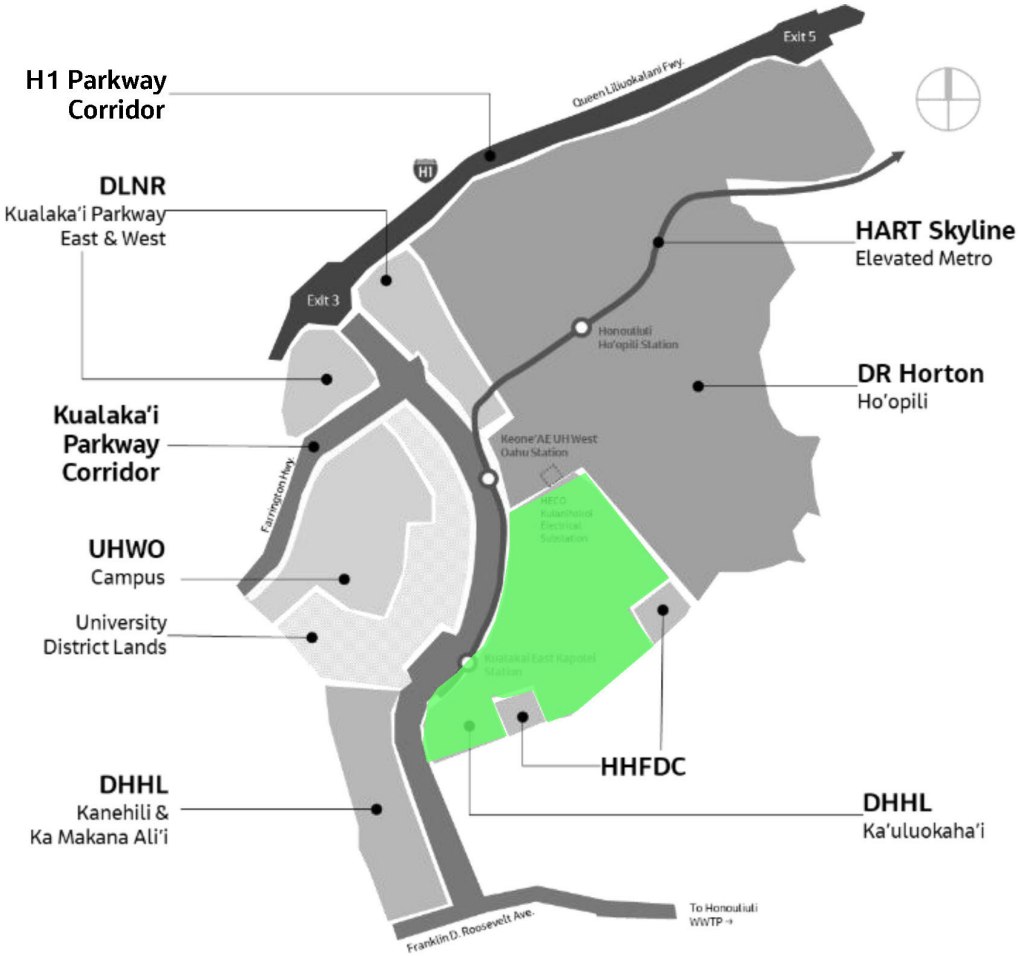
FIGURE 6-1
Project Locations (Phase 1 Only)

East Kapolei Infrastructure Master Plan
Honolulu, Hawaii

Map Credit: State of Hawaii
City and County of Honolulu, Esri, NASA, NGA, USGS, FEMA

Phase 1 Bundling Example (Project No. 0)

Keahumoa Trunk Sewer Upgrade



Infrastructure System: Sanitary Sewer

- Upsize existing sewer from 36" upgrade to 42"
- Length approx. 4,250 linear feet

Estimated Capital Costs

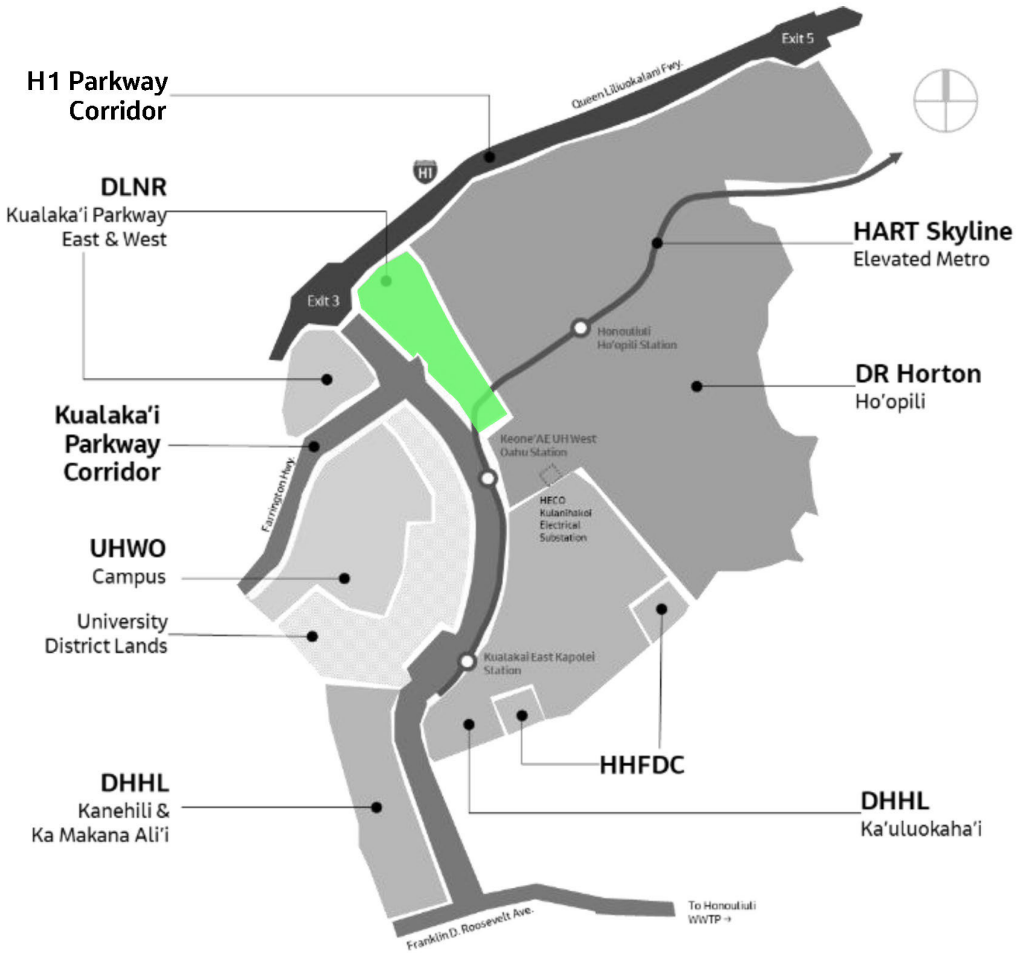
- Direct: $28.6M
- Indirect: $19.6M
- Total: $48.3M

Most Probable Capital Sources (Potential)

- Grants
- Bonding
- Fees and Taxes

Phase 1 Bundling Example (Project Nos. 1 and 3)

DLNR Projects



Infrastructure System: Transportation

- New secondary roads
- New minor roads

Estimated Capital Costs

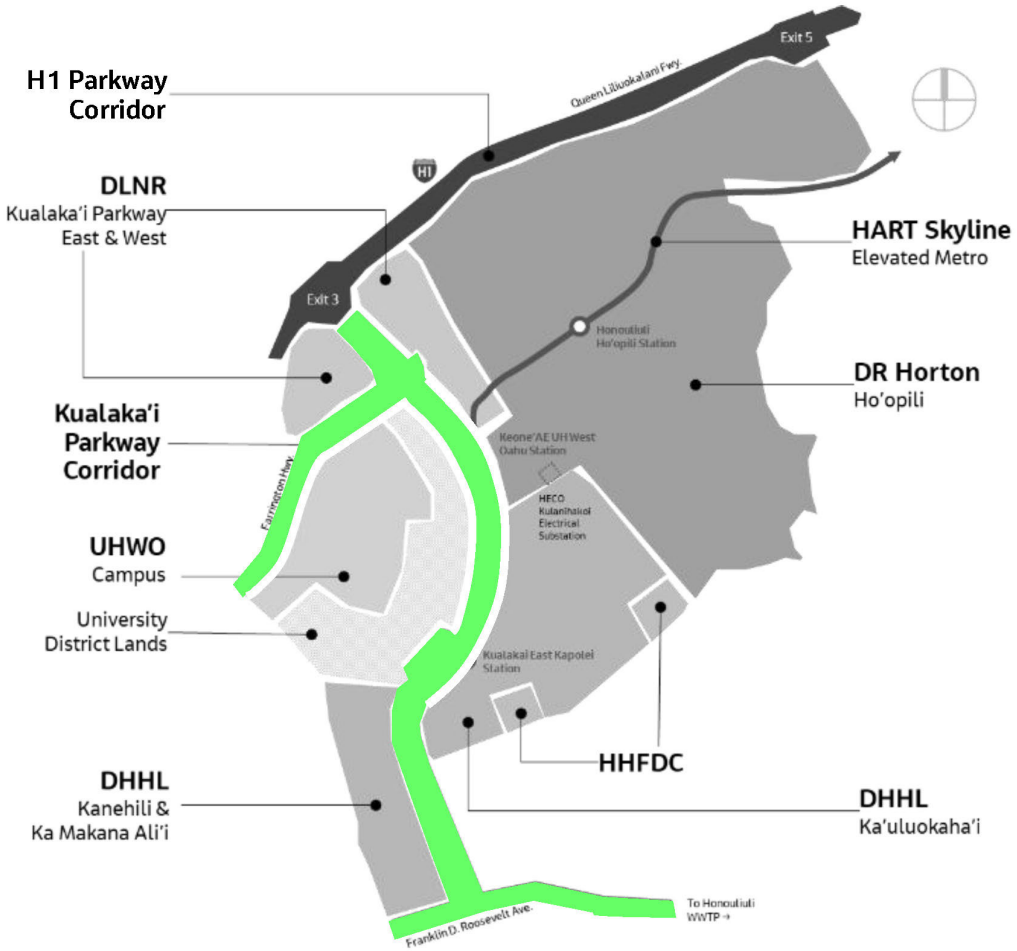
- Direct: $96.4M
- Indirect: $66.3M
- Total: $162.7 M

Most Probable Capital Sources (Potential)

- Grants
- Bonding

Phase 1 Bundling Example (Project No. 2)

Kualaka‘i Parkway Corridor



Infrastructure System: Transportation

- Kualakaʻi Parkwayroad improvements
- Kualakaʻi Parkway intersectionsand offramps

Estimated Capital Costs

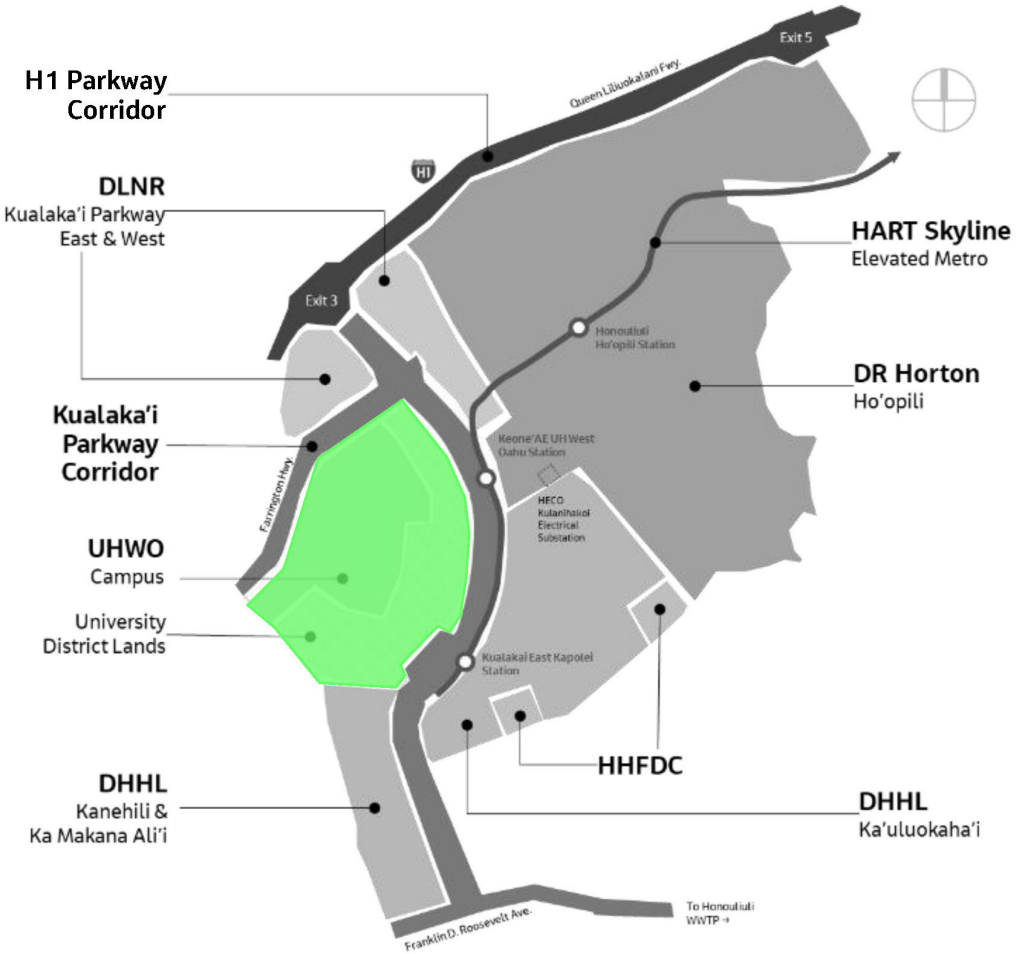
- Direct: $122.2M
- Indirect: $84.0M
- Total: $206.2M

Most Probable Capital Sources (Potential)

- Grants
- Loans
- Bonding
- Other

Phase 1 Bundling Example (Project Nos. 56)

UHWOProjects



Infrastructure System: Transportation

- Park and Ride Lots
- Intermodal Connection Improvements
- UHWO Interior Roadways

Estimated Capital Costs

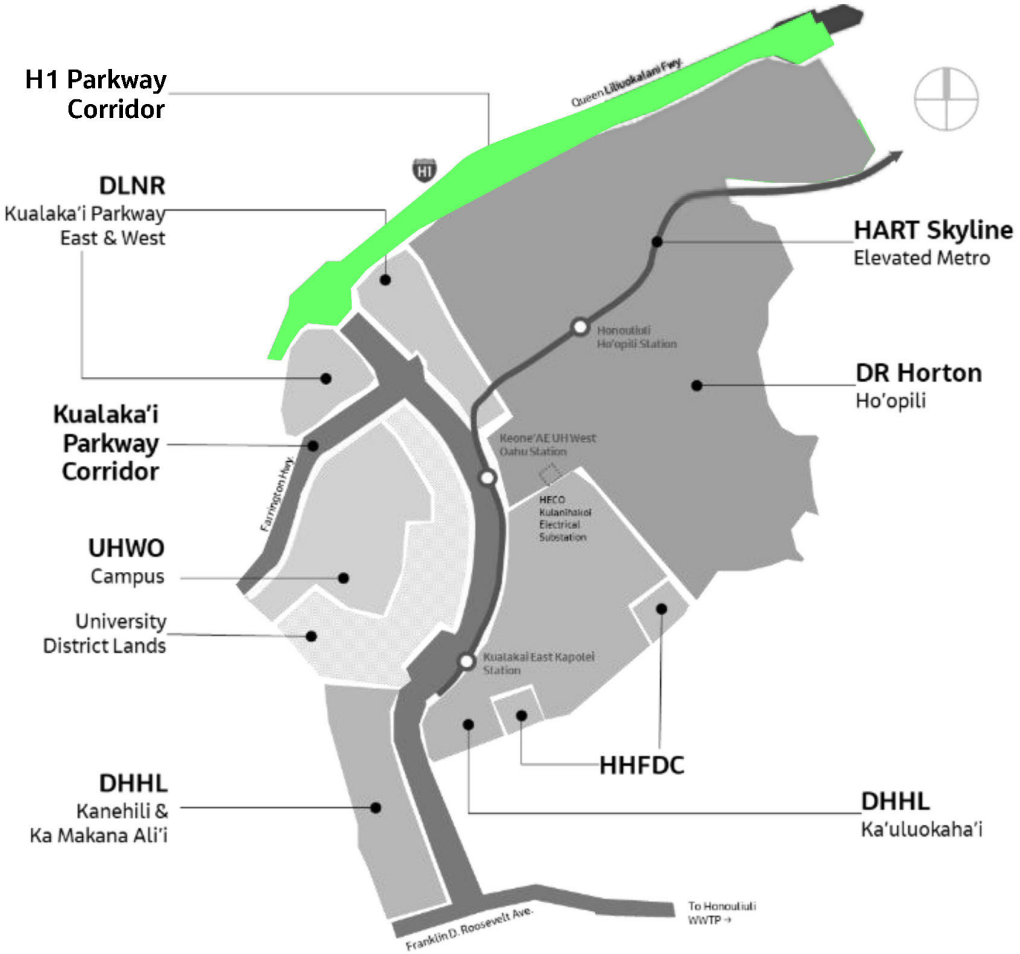
- Direct: $143.8M
- Indirect: $ 98.9M
- Total: $242.8 M

Most Probable Capital Sources (Potential)

- Grants
- Loans
- Bonding
- Developer Contributions
- Other

Phase 1 Bundling Example (Project No. 4)

HDOT Regional



Infrastructure System: Transportation

- H-1 Freeway improvements (Kunia to Waiawa)

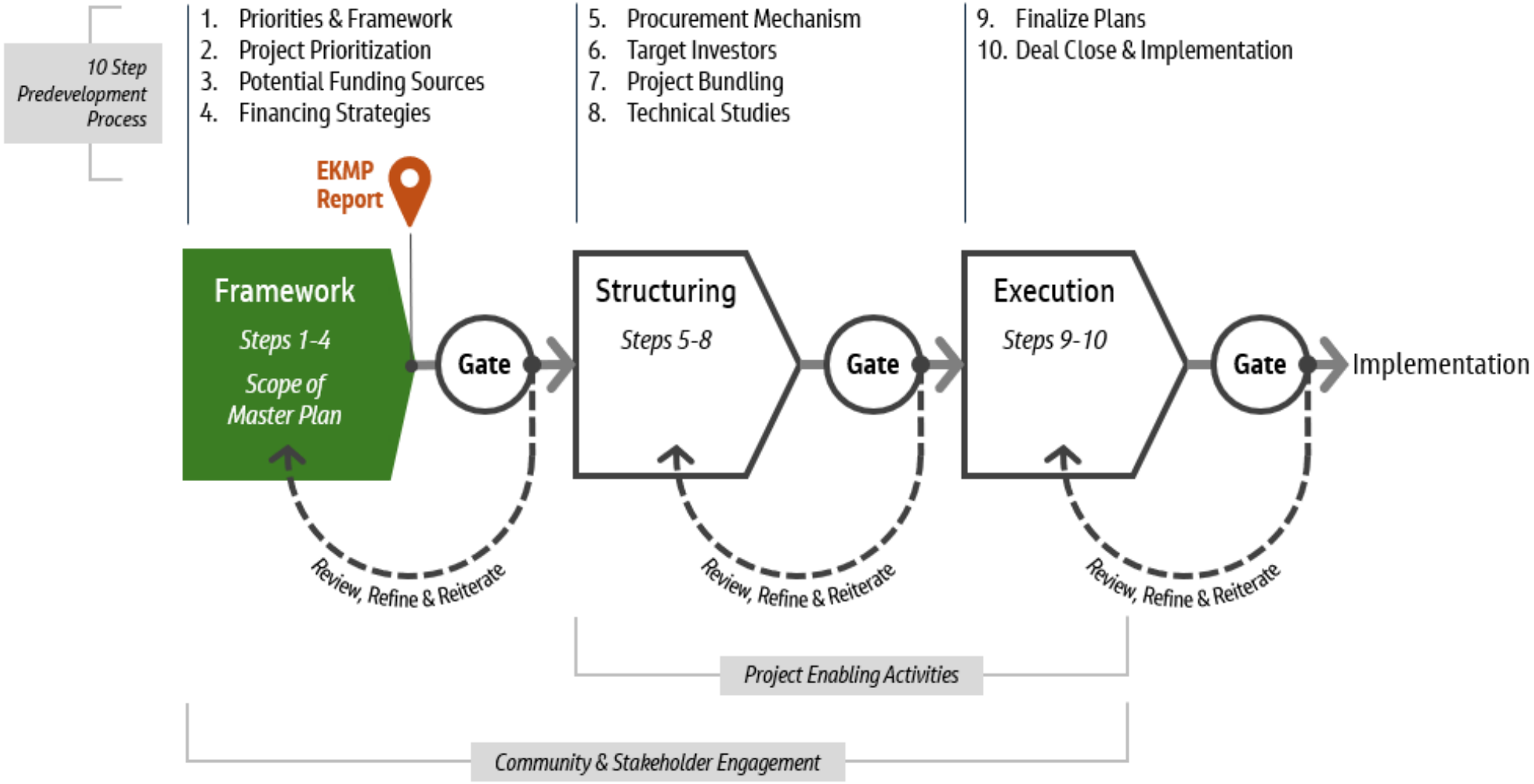
Estimated Capital Costs

- Direct: $130.9M
- Indirect: $ 90.0M
- Total: $221.0 M

Most Probable Capital Sources (Potential)

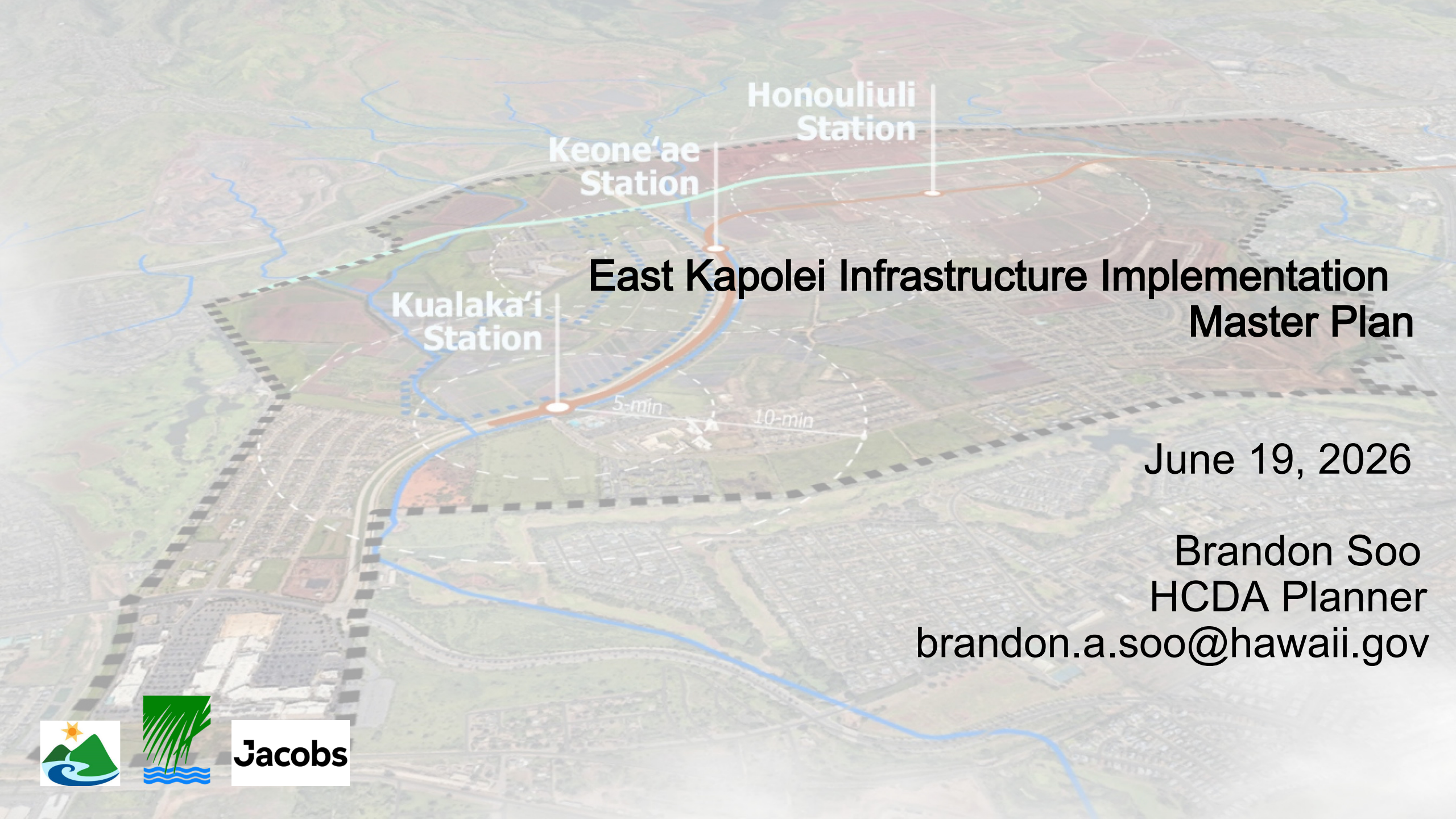
- Grants
- Loans
- Bonding
- Other

Master Plan's Role in Pre-development Process



Next Steps

- Complete and distribute document
  - Incorporate AECOM value capture study
- Programmatic EIS
- Move forward on Phase 1 projects



East Kapolei Infrastructure Implementation Master Plan

June 19, 2026

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Jacobs