

# REPLACEMENT OF WAIĀHOLE STREAM BRIDGE KAMEHAMEHA HIGHWAY

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Public Information Meeting for National Environmental Policy Act (NEPA),  
Chapter 343 Hawai'i Revised Statutes (HRS), and Section 106 Consultation  
under National Historic Preservation Act (NHPA)

NOVEMBER 19, 2018

6:00-8:00pm

The KEY Project

**State of Hawai'i**

**Department of Transportation**

**Highways Division**



# Meeting Agenda

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- Meeting Purpose
- Project Location
- Existing Bridge Conditions
- Project Background (Purpose & Need, Timeframe)
- Proposed Alternatives
- Bridge Replacement Sequence
- Environmental Compliance
- Section 106 National Historic Preservation Act
- Next Steps
- Public Comments
- Contact Information



# Purpose of Tonight's Meeting

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- Introduce this project to the community
- Update community of the project status so far
- Consult with the community
- Provide the community with an opportunity to comment on the proposed project



# Project Location

Waiāhole Stream Bridge is located on Kamehameha Hwy, at mile post 34.59 on Route 83. It is 0.04 miles south of Waiāhole Valley Road, adjacent to the Waiāhole Poi Factory.



# Existing Bridge Conditions



Photo 1: Bridge deck looking eastbound, pedestrian walkway



# Existing Bridge Conditions

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Photo 2: Waiāhole Bridge center pier



# Existing Bridge Conditions

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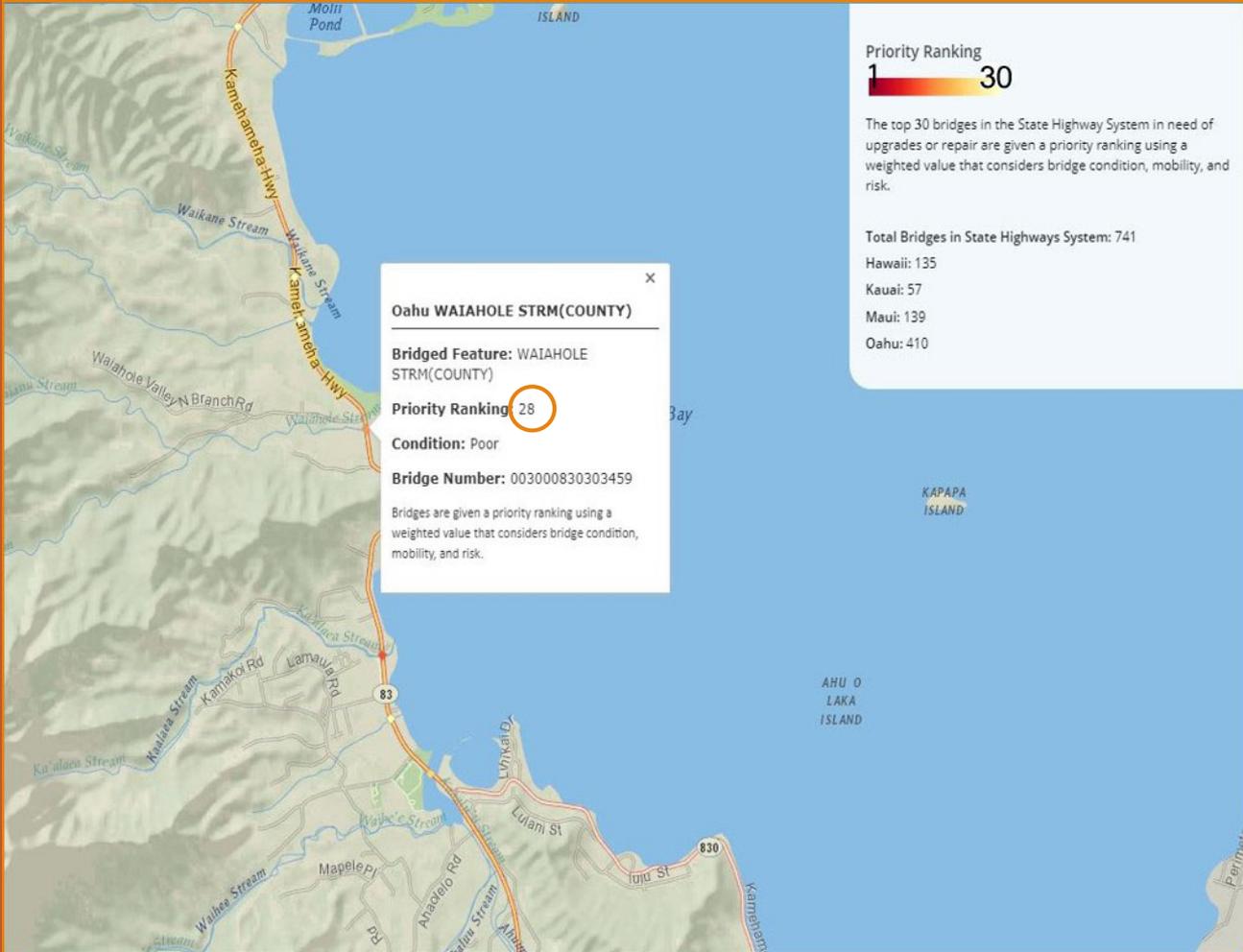


Photo 3: Pedestrian walkway



# Project Background Purpose & Need

- Does not conform to current design standards; no shoulders
- Settlement of south abutment resulting in sloping of bridge parapet
- Flooding. Insufficient hydraulic capacity making it susceptible to debris clogging at the bridge
- Bridge Sufficiency Rating (SR) = 36
- Priority Ranking = 28
- The existing bridge is currently safe, but it should be replaced to avoid potential future safety issues



[HTTP://HIDOT.HAWAII.GOV/HIGHWAYS](http://hidot.hawaii.gov/highways)



# Project Background

## Timeframe

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- Initial Design Phase
  - Pre-assessment consultation with Federal, State and County agencies (Nov. 2017)
  - Informal consultation meetings with U.S. Fish and Wildlife Service, National Fisheries and Marine Services (on-going)
  - Evaluations and Studies: Cultural Impact Assessment (Feb. 2018); Waiāhole Wetland and Stream Report (Feb. 2018); Hydraulic and Scour Report (June 2018)
- Environmental Evaluation Phase
  - Draft EA per HRS Chapter 343 (Fall/Winter, 2018)
  - NEPA Environmental Documentation, Section 106 per National Historic Preservation Act (NHPA)(Winter 2018/Spring 2019)
- Finalize Design
- Anticipated Ready to Advertise May 2021
- Anticipated construction start date December 2021
- Construction anticipated to take 18 – 24 months



# Proposed Alternatives

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5 Alternatives considered

None of the alternatives will completely solve the flooding problem. Some will improve it.



# Proposed Alternatives

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## **Alternative 1:**

Replacement bridge with detour road, widen stream.

Will not eliminate the flooding.

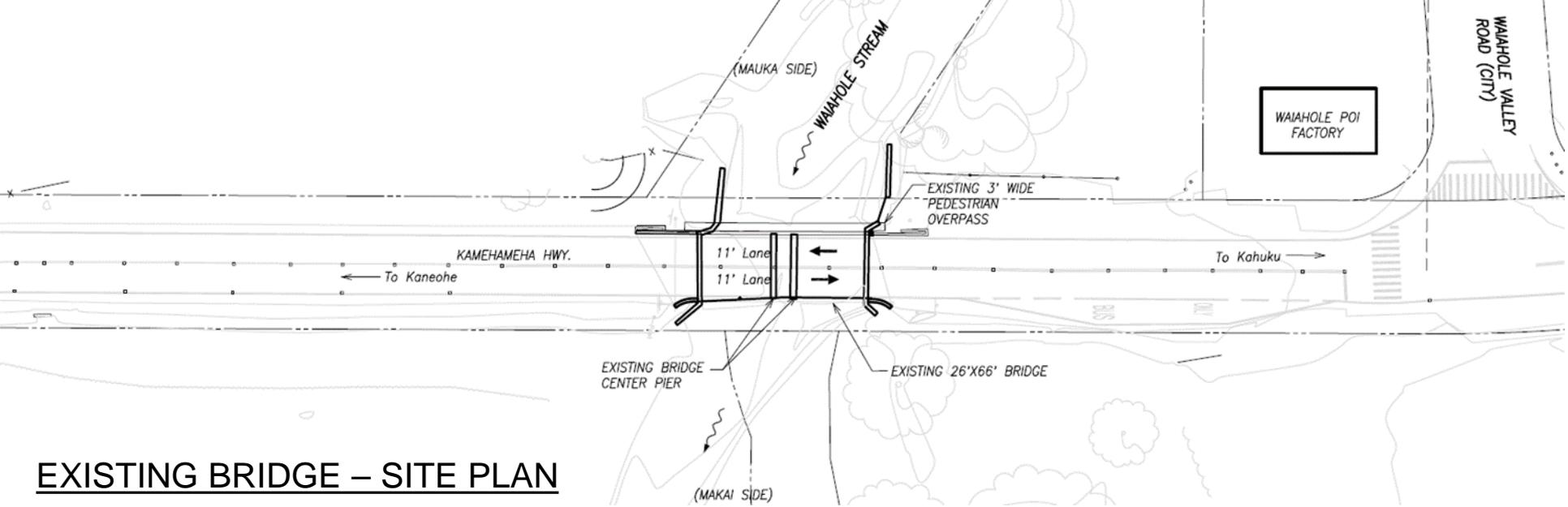
35% increase in flow capacity. Snagging eliminated.

Estimated Cost = \$14,500,000

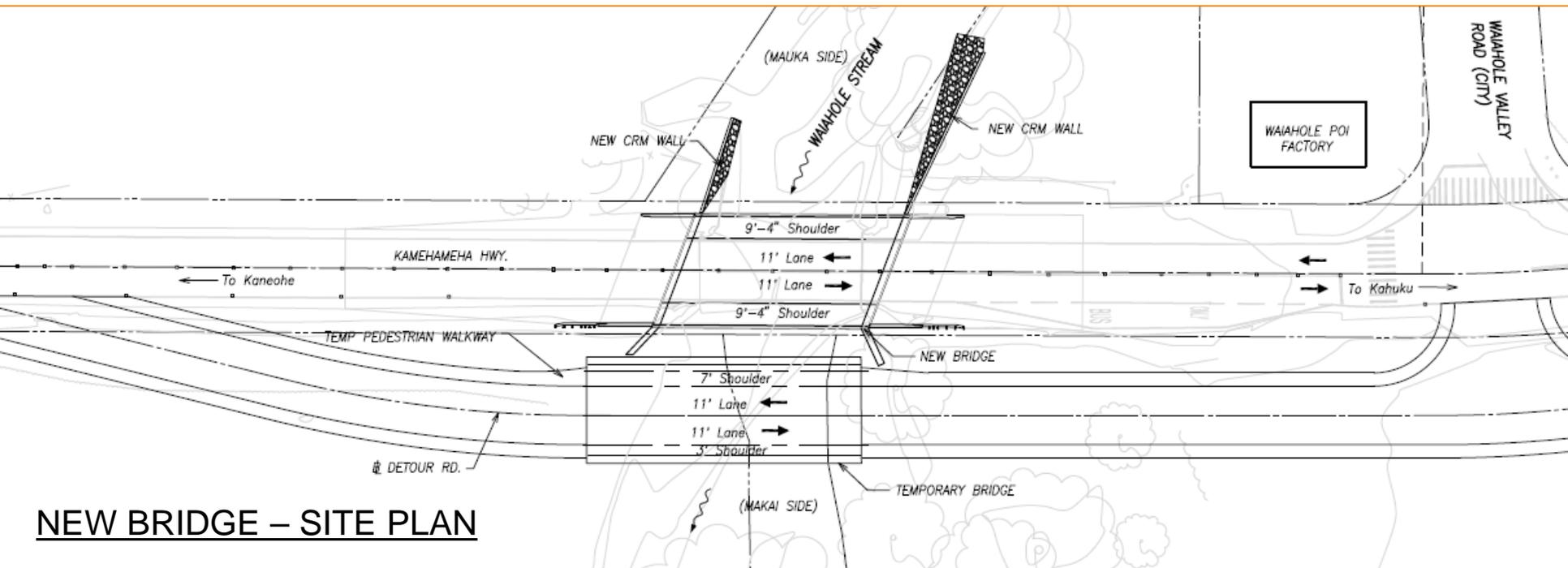
Anticipated Lifespan = 75 to 100 years

Construction Time = 18-24 months

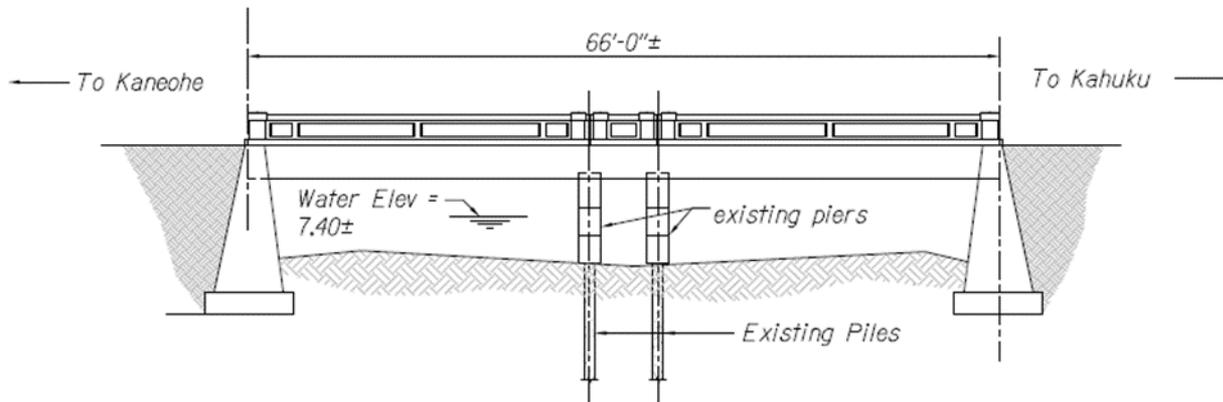




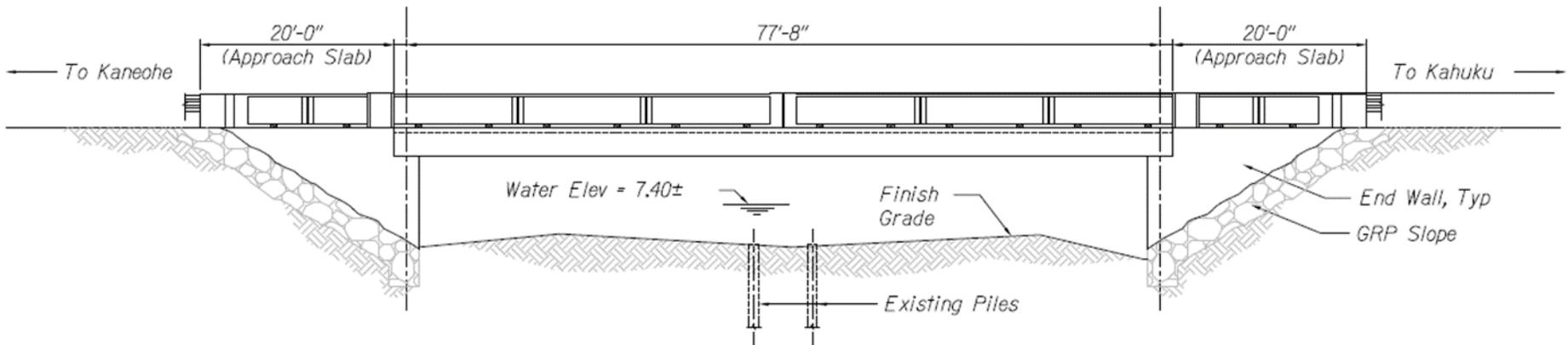
**EXISTING BRIDGE – SITE PLAN**



**NEW BRIDGE – SITE PLAN**



**EXISTING BRIDGE – ELEVATION VIEW**



**NEW BRIDGE – ELEVATION VIEW**



# Proposed Alternatives

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## Alternative 2:

Phased Construction of replacement bridge.

Widen stream without a detour road and bridge.

35% increase in flow capacity. Snagging eliminated.

Estimated Cost = \$17,000,000

Anticipated Lifespan = 75-100 years

Construction Time = 24-32 months



# Proposed Alternatives

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## **Alternative 2:**

Phased Construction of replacement bridge.

One lane of traffic during construction

30% increase in construction time

35%

Safety issues related to phased construction

This Alternative Design is not considered to be a viable option



# Proposed Alternatives

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## Alternative 3:

Rehabilitate & Widen Existing Bridge

Estimated Cost = \$15,000,000

Anticipated Lifespan = 25 years

Construction Time = 24- 30 months



# Proposed Alternatives

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## **Alternative 3:**

Rehabilitate & Widen Existing Bridge.

Extend length of existing abutments, widen deck.

Extended lane closures.

No increase in flow capacity. Snagging not addressed.

Reusing an abutment that settled sometime in the past.

Therefore, this is not considered a viable alternative.



# Proposed Alternatives

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## Alternative 4:

Construct new bridge on the makai side of the existing bridge. Keep the existing bridge open to traffic during construction and until the new bridge is completed. Demolish existing bridge and widen stream.

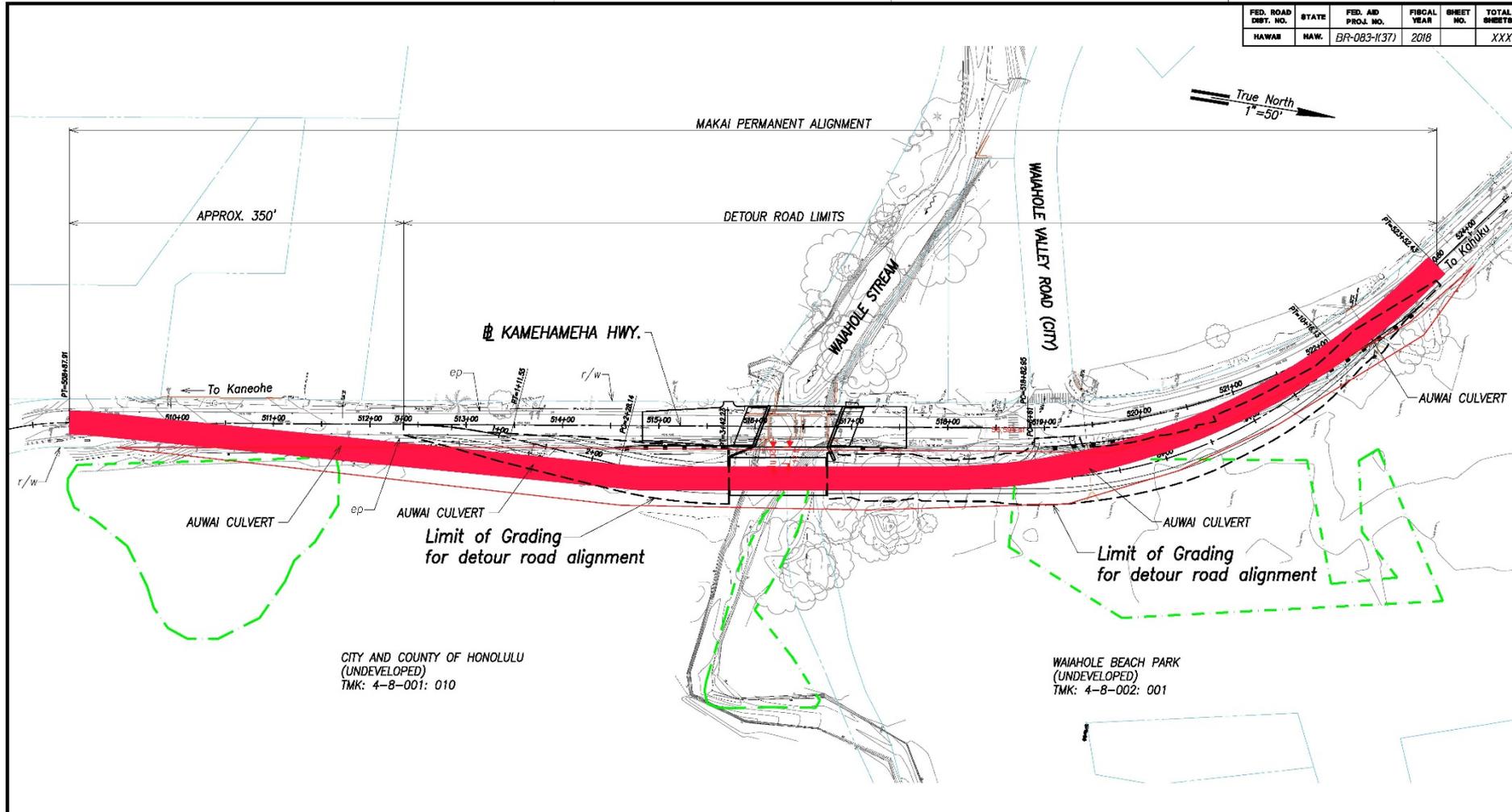
Estimated Cost = \$16,000,000

Anticipated Lifespan = 75-100 years

Construction Time = 18-24 months

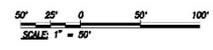


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-K37	2018	XXX	XXX



- Legend:**
- - - - - WETLANDS
  - MAKAI ALIGNMENT (CONCEPT)

**FIGURE – CONCEPT MAKAI PERMANENT ALIGNMENT**  
 Scale: 1"=50'



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STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

***Kamehameha Highway  
 Waihole Bridge Replacement  
 Federal Aid Project No. BR-083-K37***

Scale: AS NOTED      Date: Aug. 2018

SHEET No.      OF XXX SHEETS

# Proposed Alternatives

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## Alternative 4:

- Roadway alignment in City and County property
- Encroaches into wetland
- Safe intersection with Waiahole Valley Road
- Site distance for exiting Waiahole Valley Road
- Access to Poi Factory
- May pass more water than Alternative 1



# Proposed Alternatives

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## **Alternative 5:** No Action

No bridge rehabilitation or reconstruction. DOT may undertake embankment stabilization and channel clearing maintenance. However, without removing the pier and widening the bridge, we will continue to have flooding on a regular basis.



# Proposed Alternatives

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## Additional Alternatives – How Do We Eliminate Flooding?

1. Construct large dam (retention basin upstream)
2. Construct tall concrete walls along both sides of the stream, upstream of the bridge
3. Raise bridge deck elevation 5' or more
4. Eliminate bridge pier
5. Flooding a long time



# Alternatives Comparison

	<b>Alt. 1 (Widen Stream, Replace Bridge, Detour Rd.)</b>	<b>Alt. 2 (Phased Construction)</b>	<b>Alt. 3 (Widen Existing Bridge)</b>	<b>Alt. 4 (Makai Bridge)</b>	<b>Alt. 5 (No Action)</b>
Cost	\$14.5m	\$17.0m	\$15m	\$16.0m	\$0
Lifespan	75-100 years	75-100 years	25 years	75-100 years	25 years
Stream flow improvements	Yes	Yes	None	Yes	None
Lane closures	No	Yes	Yes	No	No

# Criteria for Alternative Selection

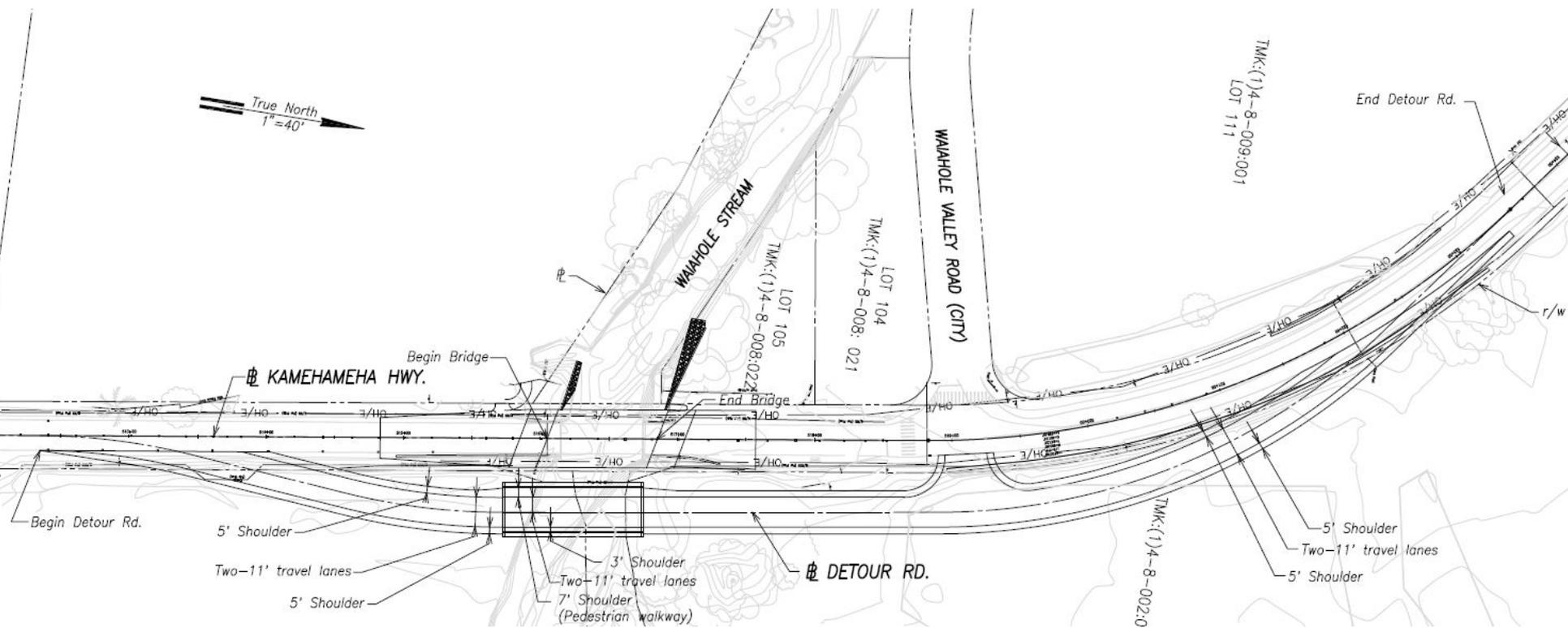
## DOT Preferred Alternative

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Some considerations in evaluating the different alternatives:

- Least costly option that provides a new bridge with adequate travel lanes and pedestrian/bike accommodations
- Settlement of south abutment does not make rehabilitating the bridge structure a feasible option.
- The removal of the center piers from the stream will eliminate snagging of debris as it is washed downstream, which tends to cause a restriction in water flow during times of heavy rains.
- Provision of a detour road and bridge allows construction with minimal disruption to traffic flows.
- Cost of purchasing of additional right-of-way property
- Additional permit time for permanent encroachment into wetland area





# Access to and from Waiahole Valley Road During Construction



# Bridge Replacement Sequence

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1. Construct makai detour vehicular road & temporary bridge; install temporary bus stop to ensure continuous service by TheBus
2. Demolish and remove existing bridge
3. Widen stream
4. Construct new bridge substructure and supports for 12 inch BWS waterline
5. Construct new bridge superstructure
6. Remove temporary facilities
7. Restore public and private properties to preconstruction condition



# Environmental Compliance

## Consultations (on-going)

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### I. Chapter 343 HRS Consultation

1. Pre-Consultation with Federal, State, and County Agencies
2. 195 D Consultation with Division of Aquatic Resources and Division of Forestry and Wildlife (DAR-DOFAW).
3. 6-E(8) Consultation with SHPD
4. Cultural Impact Assessment interviews

### II. Federal NEPA Consultations

1. Section 106 (National Historic Preservation Act)
  - a) NHOs & other historic preservation entities
  - b) SHPO
2. Section 7 (Endangered Species Act) & Essential Fish Habitat
  - a) NOAA
  - b) USFWS
3. Other consultations – Army Corps, State Department of Health



# The Section 106 Process

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- Steps involved:
  1. Initiate the process by inviting parties to consult
  2. Identify historic properties
  3. Assess effects to historic resources, if any
  4. Resolve effects, if any, with consulting parties through execution of a Memorandum of Agreement



# Section 106 Consultation

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1. Area of Potential Effect (APE) consultation with the State Historic Preservation Office
  - a) SHPO concurred with HDOT's APE on December 14, 2017
2. Initiate consultation process
  - a) Began with Newspaper ad published in *Honolulu Star Advertiser* and *Ka Wai Ola* on January 01, 2018
  - b) Consultation invitation was sent to the entire Department of Interior Native Hawaiian Organizations list
  - c) Public informational meeting to solicit comments



# Known Historic Resource

- Waiāhole Stream Bridge
- 'auwai (culvert)



# Next Steps

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- Publish Chapter 343, HRS Environmental Assessment
- 30-day public review and comment period on EA
- Revise EA and mitigation measures as necessary and publish Final EA/FONSI
- Prepare NEPA Categorical Exclusion
- Complete Design



# Public Comments Welcome

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**Please provide comments for this project regarding:**

- Section 106 (historical and cultural sites)
- Chapter 343 and NEPA (comment about this project)

**Please be respectful to those speaking**

**Please keep focused on the proposed project**

**Make comments here tonight or take home a comment form and mail it to us on or before Dec. 20, 2018**



# More Information

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[hidot.hawaii.gov/presentations](http://hidot.hawaii.gov/presentations)



# Contact Information

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## **DOT Highways Division:**

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# MAHALO

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Thank you for your time and patience as HDOT works to improve our state highways.

