HANA HIGHWAY BRIDGE IMPROVEMENTS

HANABRIDGEIMPROVEMENTS.COM

WELCOME

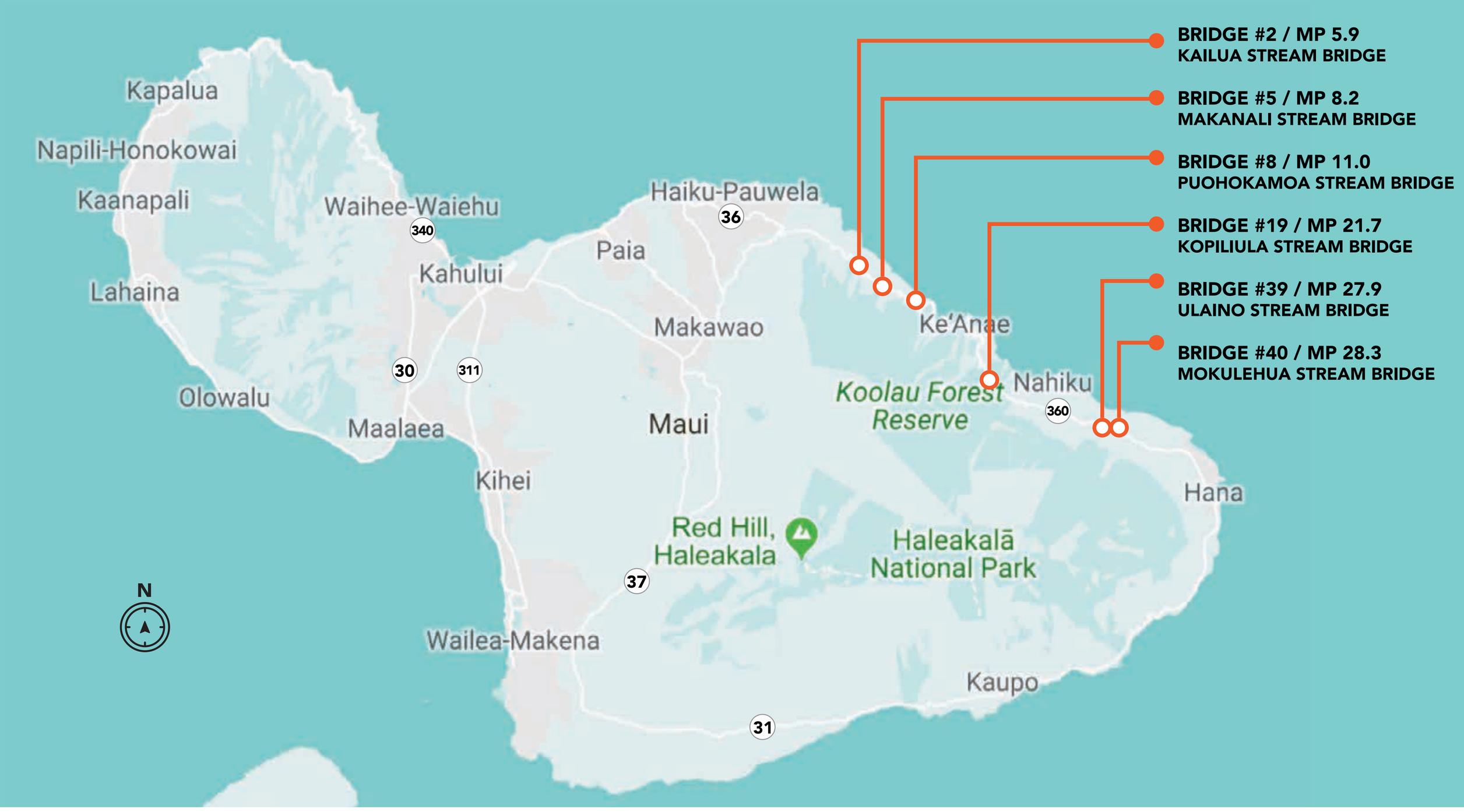
A PARTNERSHIP BETWEEN
FHWA & HDOT

DEPARTMENT OF TRANSPORTATION · UNITED STATES OF AMERICA

DEPARTMENT OF TRANSPORTATION · STATE OF HAWAII

PROJECT OVERVIEW

THE HANA HIGHWAY BRIDGE IMPROVEMENTS PROJECT IS EVALUATING SIX BRIDGES ALONG THE HANA HIGHWAY FOR IMPROVEMENTS TO MAINTAIN A SAFE AND FUNCTIONAL ROADWAY SYSTEM



PROJECT PURPOSE & NEED

WHAT IS THE PURPOSE OF THIS PROJECT?

A project purpose identifies what the project should accomplish to a large degree to be considered a success.

+ The purpose of the project is to improve six bridges, in a context-sensitive manner, so they remain functional for highway users and local and regional communities.
+ The project seeks to address existing sub-standard structural conditions by upgrading them to address the project needs.

WHAT ARE THE PROJECT NEEDS?

The project needs identify the problems a project is specifically designed to address.

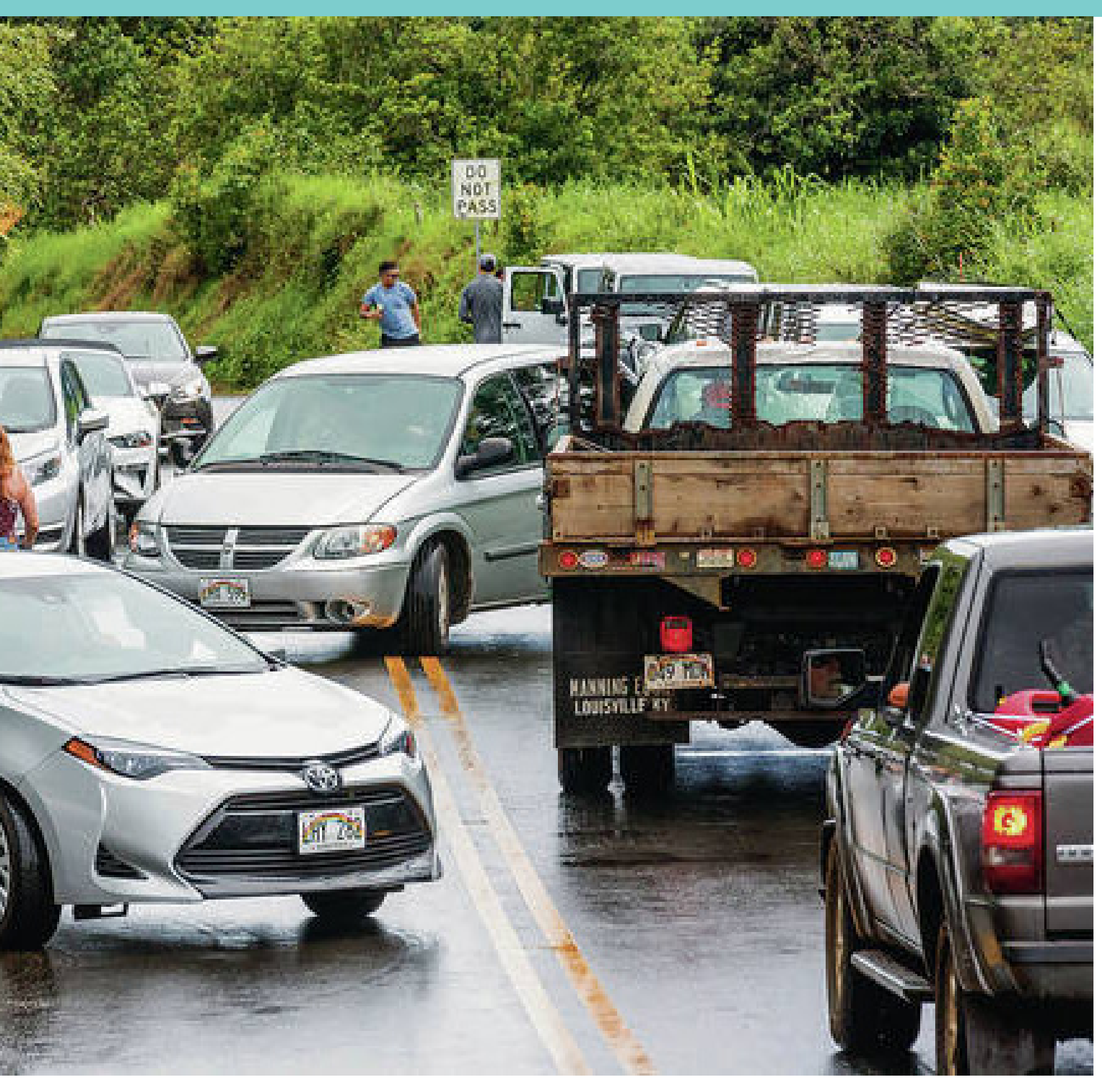
Primary issues that define the need for the Hana Highway Bridges project include:

+ Reliability of the Transportation Network
+ Structural Conditions
+ Load Capacity and Safety




PROJECT NEEDS

THE FOLLOWING PRIMARY ISSUES DEFINE THE NEED FOR THE HANA HIGHWAY BRIDGES PROJECT:



RELIABILITY OF THE TRANSPORTATION NETWORK

+ The Hana Highway is the primary connection for the east Maui communities, such as Hana, Wailua, Nahiku, and Keanae, to local and regional services, activity centers, employment centers, and emergency services.
+ The roadway is also a destination in and of itself, drawing visitors to experience the drive and its scenic vistas and experiences, as well as the communities and local vendors along the corridor.
+ Addressing six of the highest priority aging structures along the route is part of HDOT's goal toward maintaining this critical access for residents and businesses, tourism, highway maintenance, and public safety.



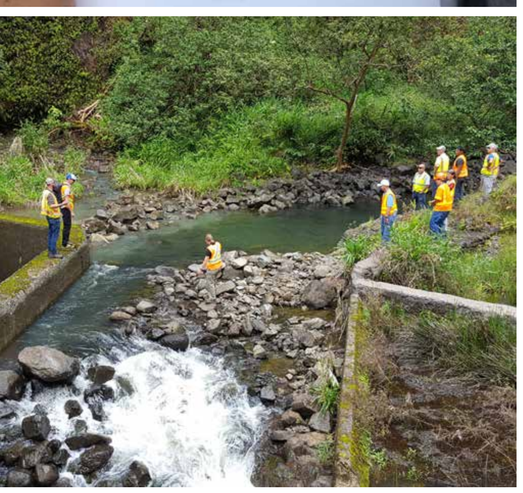

STRUCTURAL CONDITIONS

+ The bridges show signs of degradation. This includes concrete spalling and delamination, exposed reinforcing, visible cracks in concrete and mortar joints, and undermining at isolated bridge supports.




LOAD CAPACITY & SAFETY

+ The bridges do not meet current load capacity standards. Fuel and water delivery trucks must operate with half loads, concrete trucks make deliveries without water, and on a roadway with landslide risks, size of vehicles for debris removal, and the loads they can haul, are limited.
+ The bridges were not designed to current seismic and scour standards.
+ Railings do not meet current crashworthiness standards.



PROJECT GOALS & EVALUATION CRITERIA

MINIMIZE CONSTRUCTION IMPACTS & MAXIMIZE CONSTRUCTABILITY

+ Minimize detours and closures
+ Expedite construction
+ Minimize traffic impacts

MAINTAIN HISTORIC CHARACTER

+ Maintain the character of the existing historic roadway and bridge elements

MINIMIZE ENVIRONMENTAL IMPACTS

+ Streams
+ Wetlands
+ Plants & Animals
+ Cultural resources
+ Hydrology/Hydraulics

MINIMIZE CONSTRUCTION COST

+ Minimize construction costs
+ Maximize project efficiencies
+ Minimize maintenance costs

MEET APPLICABLE DESIGN STANDARDS

+ 75-year design life
+ Meet design vehicle load
+ Meet current seismic criteria
+ Meet crashworthiness standards for railings
+ Provide a solution that withstands scour

OPEN RAILING CONCEPTS

EXISTING BRIDGE

NEW BRIDGE RAIL

Arch Picket

Arch Picket

Rectangle Picket

Rectangle Picket

SOLID RAILING CONCEPTS

EXISTING BRIDGE

NEW BRIDGE RAIL

Tall Solid Rail

Tall Solid Rail

Lower Solid Rail

Lower Solid Rail

REPLACEMENT CONCEPTS

EXISTING BRIDGE

NEW BRIDGE

Supported Behind Existing Stone Abutment

+ A new longer bridge could be founded behind the existing abutment.
+ This option preserves the existing abutment.

NEW BRIDGE

Supported on New Abutment

+ The existing abutment could be removed and replaced with a new abutment and a surface treatment applied.

REHABILITATION CONCEPTS

EXISTING BRIDGE

REHAB BRIDGE

Wrapped Abutment and Girders Added

- The existing abutment does not meet existing seismic criteria.
- The abutment would need to be "wrapped" in concrete.
- A surface treatment could then be applied.
- The bridge deck would be strengthened by adding more girders.

REHAB BRIDGE

Wrapped Abutment and Slab Added

- The existing abutment does not meet existing seismic criteria.
- The abutment would need to be "wrapped" in concrete.
- A surface treatment could then be applied.
- The bridge deck would be strengthened by adding more slab concrete.

TELL US YOUR THOUGHTS

PROVIDE INPUT & STAY INVOLVED

+ Ask a question or make a statement at tonight's meeting
+ Fill out a comment form
+ Speak with a project team member
+ Visit the project website: hanabridgeimprovements.com

POSSIBLE TOPICS

+ Have we adequately captured the goals and needs of the project?
+ Are there key considerations or alternatives not yet identified that should be incorporated into our screening process?
+ Do you have thoughts or input related to the railing options?
+ Do you have thoughts or input related to retaining the existing abutments or reconstructing them?
+ How would you define a successful project?

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THANK YOU FOR PARTICIPATING