BOARD OF COUNTY COMMISSIONERS

DATE: October 22, 2013
AGENDA ITEM NO. 14

Consent Agenda ☐ **Regular Agenda** ☑ **Public Hearing** ☐

County Administrator's Signature:

Subject:

Acceptance of the Beckett Bridge Project Development and Environmental (PD&E) Study's Recommended Alternative of Replacement with a New Movable Bridge
PID No. 000109A/2161

Department:

Environment & Infrastructure

Staff Member Responsible:

Jorge M. Quintas, P.E., Director
Engineering & Technical Support

Recommended Action:

I RECOMMEND THE BOARD OF COUNTY COMMISSIONERS (BOARD) ACCEPT THE BECKETT BRIDGE PROJECT DEVELOPMENT AND ENVIRONMENTAL (PD&E) STUDY'S RECOMMENDED ALTERNATIVE OF REPLACEMENT WITH A NEW MOVABLE BRIDGE.

Summary Explanation/Background:

Pinellas County, in conjunction with the Florida Department of Transportation (FDOT), is conducting a PD&E Study to evaluate the removal, rehabilitation or replacement of the existing Beckett Bridge over Whitcomb Bayou in Tarpon Springs. The PD&E study is funded through a Local Agency Program (LAP) agreement with FDOT District 7. URS Corporation (previously E.C. Driver & Associates, Inc.), with oversight by the Department of Environment and Infrastructure, is under contract with Pinellas County to conduct the study.

The study began in January 2011. The project team made a presentation to the Board on October 30, 2012 prior to the January 2013 Alternatives Public Workshop. The following alternatives have been evaluated:

- No Build
- No Build with Permanent Removal of the Existing Bridge
- Rehabilitation of the Existing Bridge
- Replacement with a New Movable Bridge
- Replacement with a New Mid-Level Fixed Bridge

The Bridge has been determined to be eligible for listing in the National Register of Historic Places. Extensive coordination has occurred with the State Historic Preservation Officer (SHPO) to determine if rehabilitation was a feasible alternative. Based on engineering and environmental analysis to date, costs, community input, and input from SHPO, the Federal Highway Administration (FHWA) has concurred that the rehabilitation and fixed bridge alternatives are not feasible.

The purpose of this item and corresponding presentation is to briefly review the history of the project, present the rationale for eliminating the rehabilitation and fixed bridge alternatives, and describe the recommended alternative of replacement with a new movable bridge. Upon concurrence of the Board, the recommended alternative will be presented at a Public Hearing in February 2014 as the selected alternative for future design.

The consultant project manager and chief engineer for URS Corporation will make a brief presentation and address any project related questions from the Board.

Fiscal Impact/Cost/Revenue Summary:

Funding for this PD&E Study is budgeted in the Pinellas County Capital Improvement Program: Transportation and Traffic Flow, Bridge Rehabilitation Program Allocation. The source of funding is provided through the Infrastructure Sales Tax (Penny for Pinellas), a Federal earmark, and a Transportation, Community and System Preservation (TCSP) Program grant. The Federal funds are provided through the referenced LAP Agreement with the FDOT.

Federal Funding Allocation:	
- TCSP Program	$300,000
- Federal Earmark	$ 98,000
County Funding	$352,000
Total Funding	$750,000

Exhibits/Attachments Attached:

Presentation

Beckett Bridge PD&E Study

Presentation to:

Board of County Commissioners





October 22, 2013

Introduction

Study Began **January 2012**

Alternatives Presented to Commission October 2013

Alternatives Presented to Public January 2013

Alternatives Considered

- No-Build
- No-Build with Permanent Removal of Existing Bridge
- Rehabilitation (No Widening)
- Replacement
  - Fixed Bridge – 28 feet Vertical Clearance
  - Movable Bridge - 7.8 feet Vertical Clearance

Overview of NEPA

National Environmental Policy Act of 1969

Federal Highway Administration (FHWA)

- Assures NEPA Compliance
- Final Authority – Approval of "Recommended Alternative"
- Approval required if federal funds are used
- Approval required to qualify for federal funds

Overview of NEPA – FHWA Process

*"The FHWA NEPA project development process is an approach to **balanced transportation decision making** that takes into account the potential impacts on the human and natural environment and the **public's need for safe and efficient transportation**."*

Source: FHWA Website

Overview of NEPA – FHWA Process

FHWA Policy:

Alternatives are to be evaluated and decisions are to be made in the best overall public interest based on balanced consideration of:

- Need for safe and efficient transportation
- Social, economic and environmental impacts
- National, state and local environmental protection laws

PD&E Process – Assures Compliance with NEPA

PD&E Process – Public/ Agency Input

Public Input – Important Component

- Decisions not made by a public vote
- Many other factors also considered

Input from Federal and State Agencies

- Policies, laws and procedures that govern how FHWA considers agency input
- USFWS, NMFS, USCG
- State Historic Preservation Officer (SHPO)

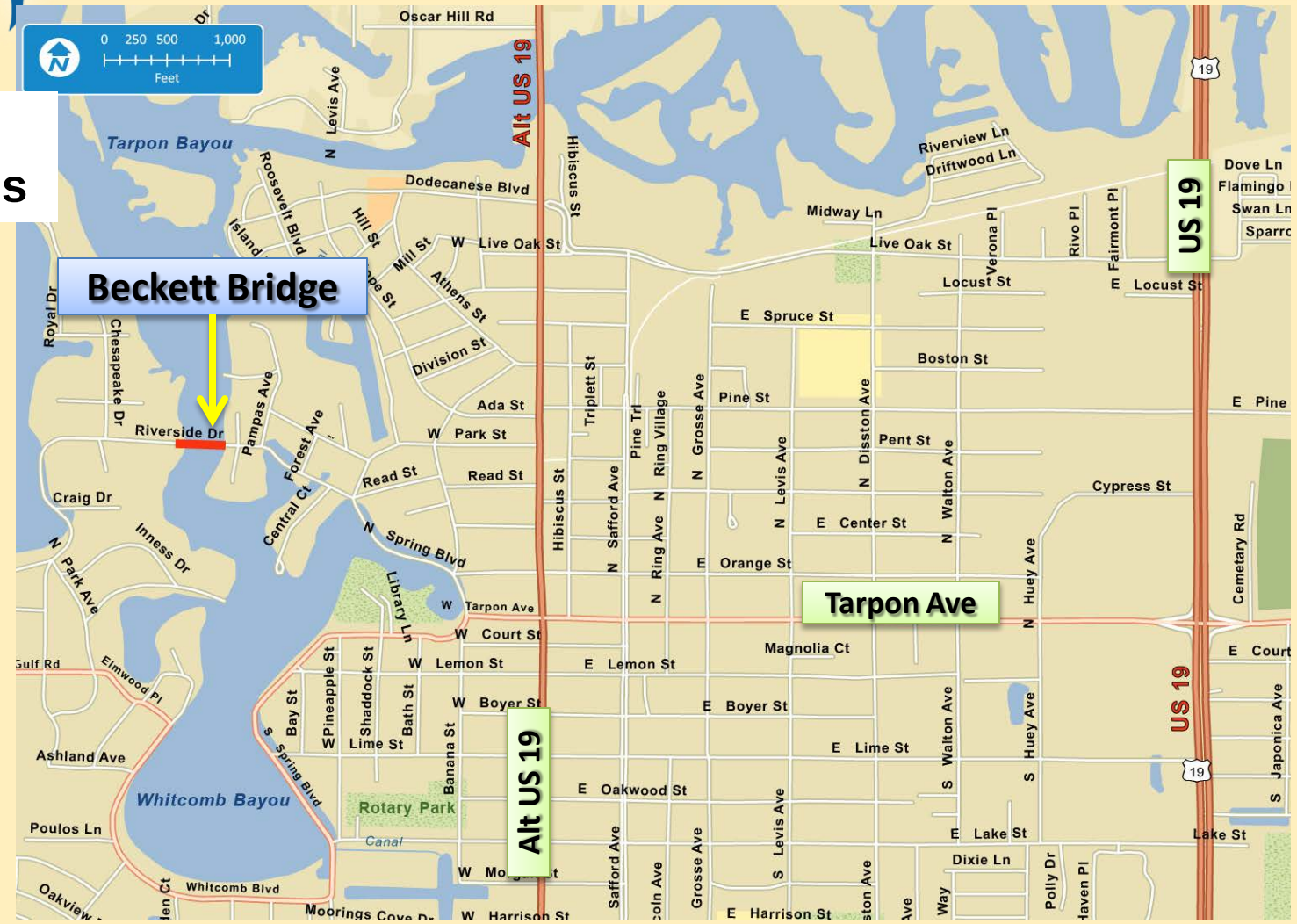
  Concurring agency on decisions regarding historic resources

PD&E Process – Affected Stakeholders

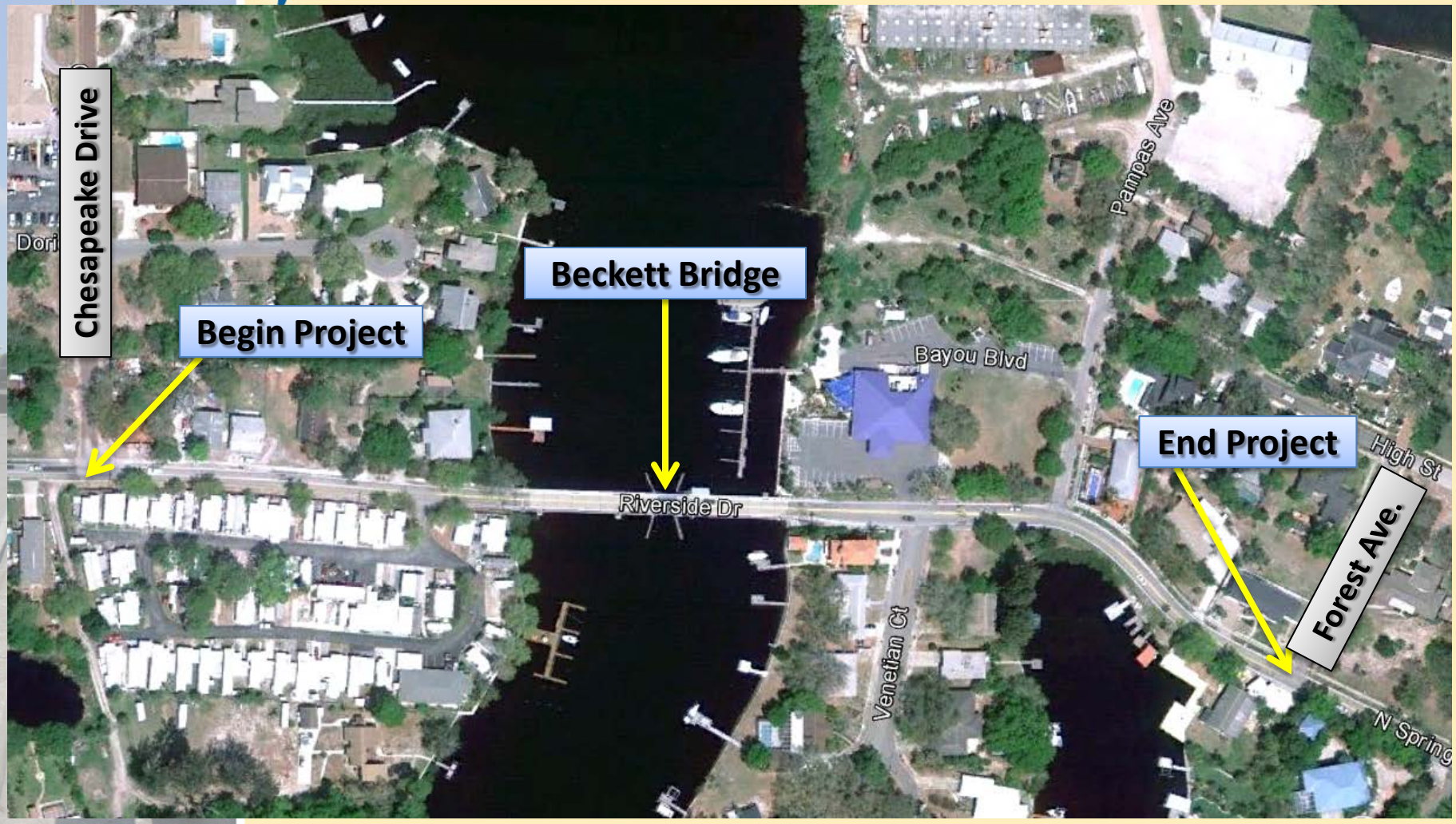
- Property Owners/ Residents
- Boaters
- Commuters
- County and City Emergency Services
- School Board
- Local Governments
- Bicyclists
- Special Interest Groups

Project Location

2012 AADT
7,700 vehicles



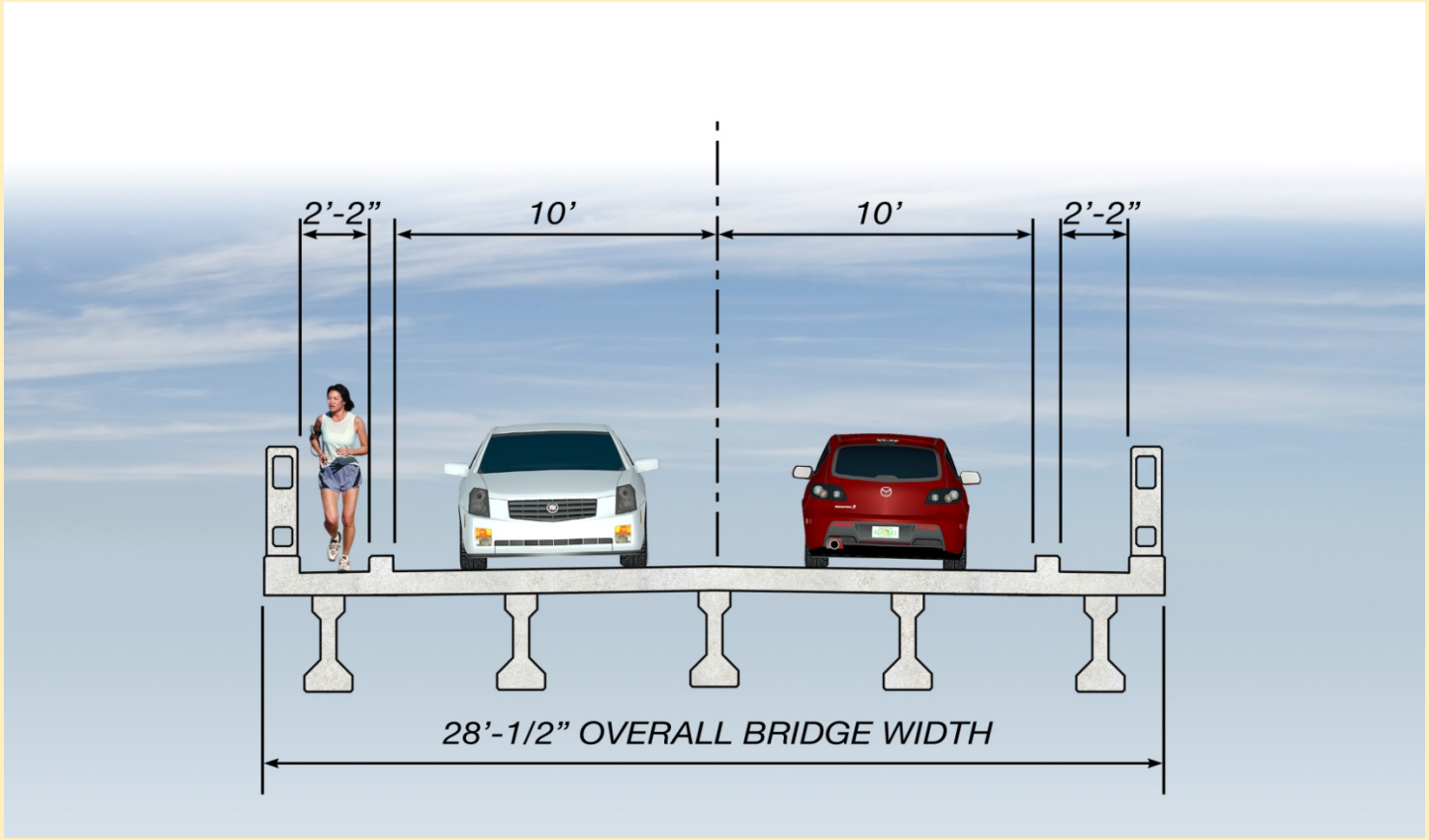
Project Limits



Beckett Bridge

- Constructed 1924
  - Original timber construction
- Substantially Rehabilitated 1956
  - Original steel bascule span and machinery retained
- Major Repairs in 1979, 1998 and 2011
  - Machinery replaced “in-kind”
- Sufficiency Rating 44.7

Existing Typical Section



No Shoulders **Narrow Sidewalks**

National Register Eligible

- **Determined Eligible for listing in the National Register of Historic Places**
  - One of a few remaining pre-1965, Single-Leaf Rolling-Lift Bascule Highway Bridges in Florida
  - Eligible in Areas of Community Planning and Development, Transportation and Engineering
  - Contributed to Westward Expansion of the City of Tarpon Springs

Existing Bridge

- Vertical Clearance – 6 ft
- Horizontal Clearance – 25 ft
- Opens with 2-hr Notice

Total # Bridge Openings

2009 - 10

2010 - 20

2011 - 18

2012 - 14

Project Need

Condition Assessment

- **Health & Sufficiency**
  - Deterioration
  - Wear
  - Corrosion
  - Damage
- **Shortcomings of original design and/or construction**
- **Unforeseen conditions**

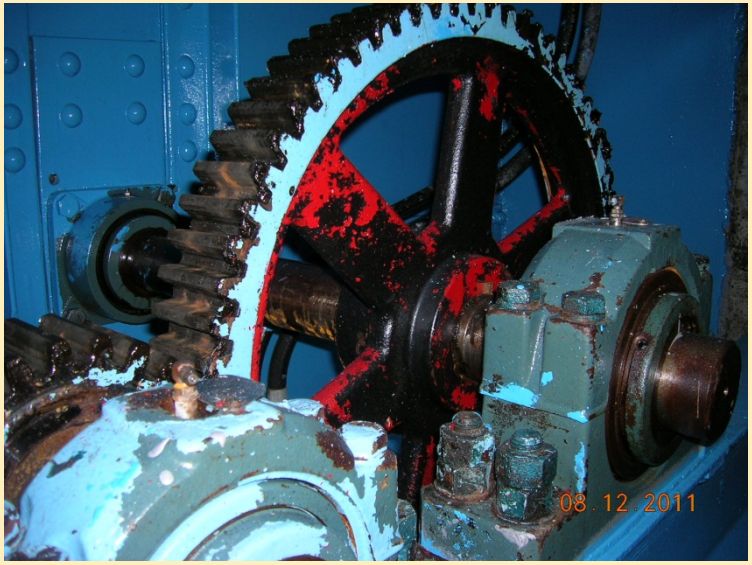
Project Need

Structural Condition

- Cracked and spalled concrete throughout
- Corrosion of reinforcing steel throughout
- Corroded structural steel
- Distorted steel flanges at tread plates
- Deteriorated timber piles & wales of fender system

Project Need

- **Mechanical & Electrical Issues**
  - Existing systems are old, worn and no longer reliable



Project Need

- **Functionally Obsolete**
  - Narrow Lanes
    - No Shoulders
    - No bicycle lanes
  - Narrow Sidewalks
    - Do Not Meet ADA Requirements
- **Structural Deficiencies**
  - Load Posted
  - Not designed for current heavier vehicles

Project Need

- **Unforeseen Conditions**
  - Foundations susceptible to settlement
  - Scour susceptible

Existing Crutch Bents

Project History

Stakeholder/Local Government Presentations
October – November 2012

- Chamber of Commerce
- Rotary Club
- Tarpon Springs Yacht Club
- MPO Board
- MPO Advisory Committees
- City of Tarpon Springs
- Pinellas County BCC
- Cultural Resource Committee (CRC)

Community Input

- Alternatives Public Meeting - January 2013

77 Written Comments Received

Preferences for Alternatives

No-Build	7
No-Build, Remove Bridge	2
Rehabilitation	11
Rehabilitation or New Movable	12
New Movable Bridge	32
New Fixed Bridge	4

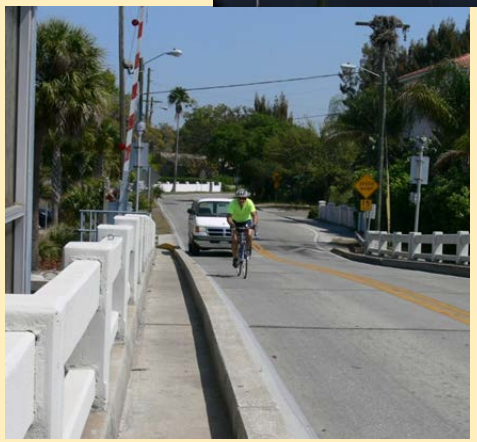
(28 ft Vertical Clearance)

Community Input

- **Alternatives Public Meeting - January 2013**

  Community Concerns

  - Need for safer pedestrian facilities
  - Bridge should provide adequate vertical clearance
  - Bridge should not adversely affect historic character of the community
  - Duration of detour should be minimized



Historic Bridge Issues

Section 106 Process

- Avoid, minimize or mitigate adverse impacts
- Conduct “Good faith consultation” with affected parties
  - Consider affected party concerns
  - Solicit Input on possible mitigation if required

- FHWA is the lead final agency
- SHPO is the concurring agency

Historic Bridge Issues

Cultural Resource Committee – CRC

Affected Parties included:

- Federal/State agencies
  - SHPO, USCG, FDOT, FHWA,
- Stakeholders with special interest in historic preservation
- Local government representatives
- Local community representatives

October 2012, March 2013 CRC Meetings

Historic Bridge Issues

CRC Meeting – March 2013

SHPO requested evaluation of two new Rehabilitation Alternatives with Improved Sidewalks

- **Rehabilitation with Widening**
  - Provide sidewalks on both sides
- **Reconfiguration of Existing Bridge (No Widening)**
  - Provide sidewalk on one side

Evaluation of Rehabilitation Alternatives to Improve Sidewalks

Conclusion of Extensive Engineering Evaluation

Both Options require:

- Replacement of Bascule (Movable) Span
- Replacement of Bascule Pier

Rehabilitation – Widening to Provide Sidewalks

- No elements of original bridge will remain

Rehabilitation – Reconfiguration to provide one sidewalk

- Not Feasible

Evaluation of Rehabilitation
No Sidewalk Improvements

Rehabilitation – Original Concept - No Widening

Disadvantages:

- No change in roadway geometry
- Narrow sidewalks remain, no shoulders
- Structural concerns – unknown foundations
- Vehicular/pedestrian safety
- Link in future Howard Park Trail
- Life-cycle costs higher compared to replacement
- Existing Service Life – 25 years

Requires Replacement of Bascule Span

Bascule Pier Only Remaining Original Element

Rehabilitation Options - Costs

Original Rehabilitation Concept - $9.5 M

No Widening/No Sidewalk Improvements

Remaining Service Life – 25 years

Rehabilitation (with Widening) - $12.5 M

Provides two 5.5 ft sidewalks

Remaining Service Life – 25 years

Reconfiguration of Existing Bridge

No widening, one 5.5 ft sidewalk

Not Feasible

New Movable Bridge - $15.8 M

Provides two 6 ft sidewalks

Service Life – 75 years

Life Cycle Cost Analysis

Costs Compared over a 100 Year Period

- Rehabilitate the bridge in 2020 then replace it with a new movable bridge in 2038

  (25 years from 2013)

  Versus

- Replace the bridge in 2020 with a new movable bridge

Result - More Cost Effective to Replace Bridge in 2020

Rehabilitation Options – SHPO Evaluation

SHPO Evaluation

- Engineering Analysis provides "*ample evidence to support the project team's opinion that a new bridge would be preferable to the rehabilitation.*"

- Mitigation will be required if existing bridge is demolished

FHWA Evaluation

Sufficient documentation to determine Fixed Bridge alternatives not feasible

- USCG determined that 28 feet of vertical clearance "Does Not Meet the Needs of Navigation"
- Substantial right-of-way impacts
- Substantial visual impacts
- Not consistent with historic character of community
- Requires two-year detour during construction
- Cost $14 M - $15 M (including Right-of-way) compared to New Movable $15.8 M

Recommended Alternative

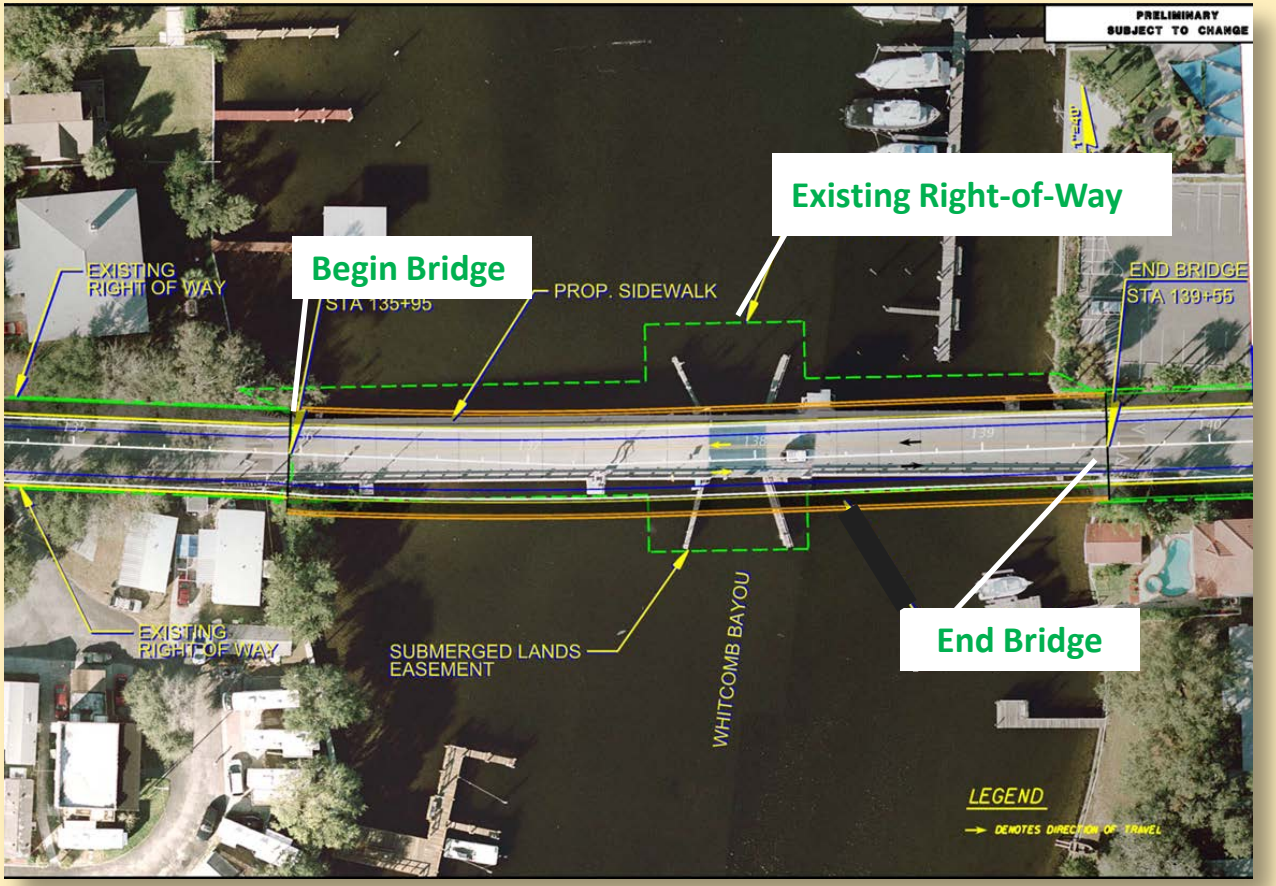
Based on extensive evaluation and consideration of:

- Engineering and Costs
- Safety of vehicles, bicyclists and pedestrians
- Potential socioeconomic and community impacts
- Impacts to the natural and physical environment
- Impacts to cultural resources
- Impacts to adjacent properties
- Impacts to the boating community
- Consideration of public input
- Other potential impacts

Replacement with a New Movable Bridge "Recommended Alternative" for presentation at Public Hearing

Movable Bridge

No Impacts to Adjacent Property



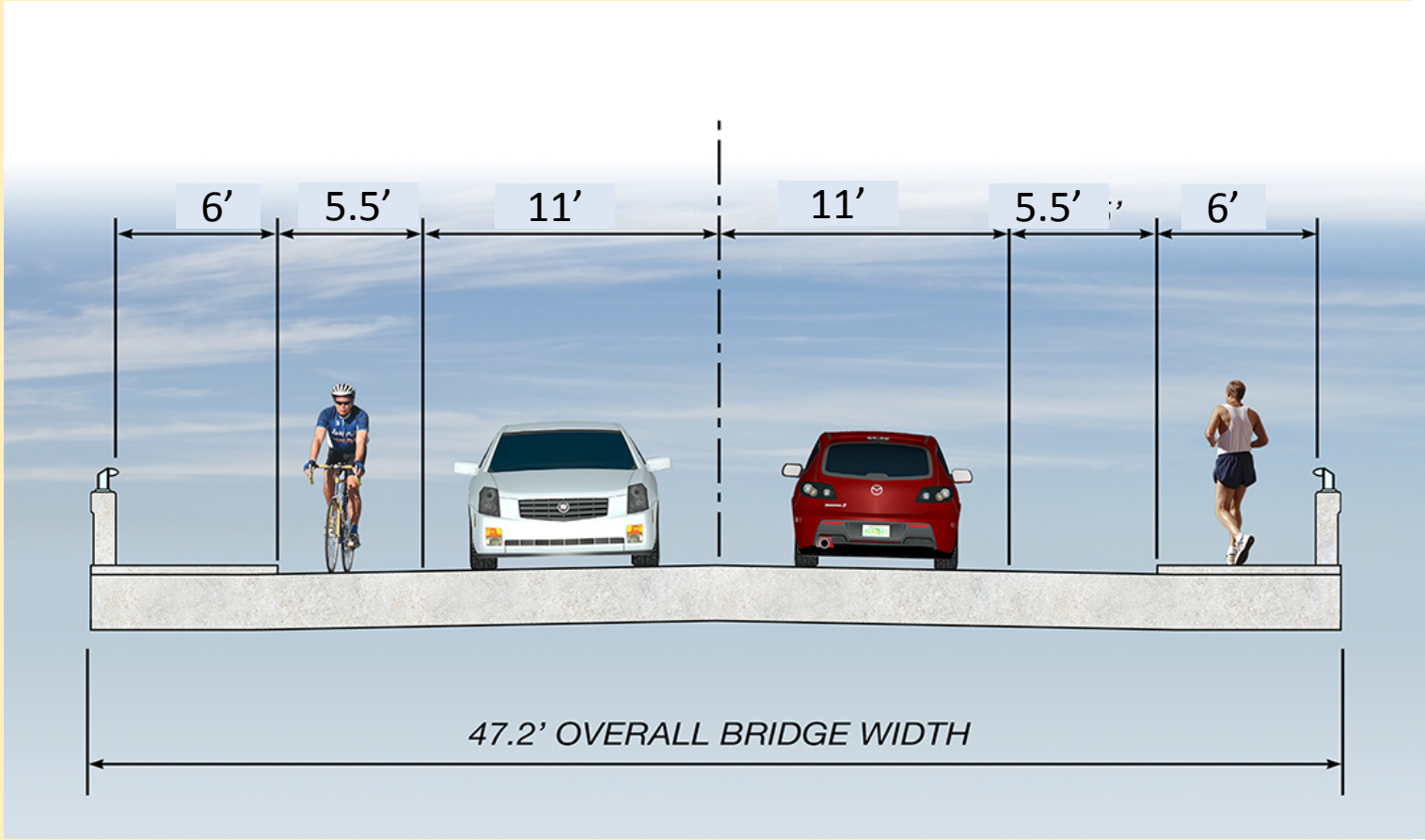
New Movable Bridge

Description

- No right-of-way impacts
- Vertical Clearance 7.8 feet
  - (existing 6 feet)
- Horizontal Clearance 25 feet
  - (same as existing)
- Total Width 47.2 feet
  - Approximately 19 feet wider than existing
  - 11 ft travel lanes
  - 5.5 ft shoulders and 6 foot sidewalks – both sides

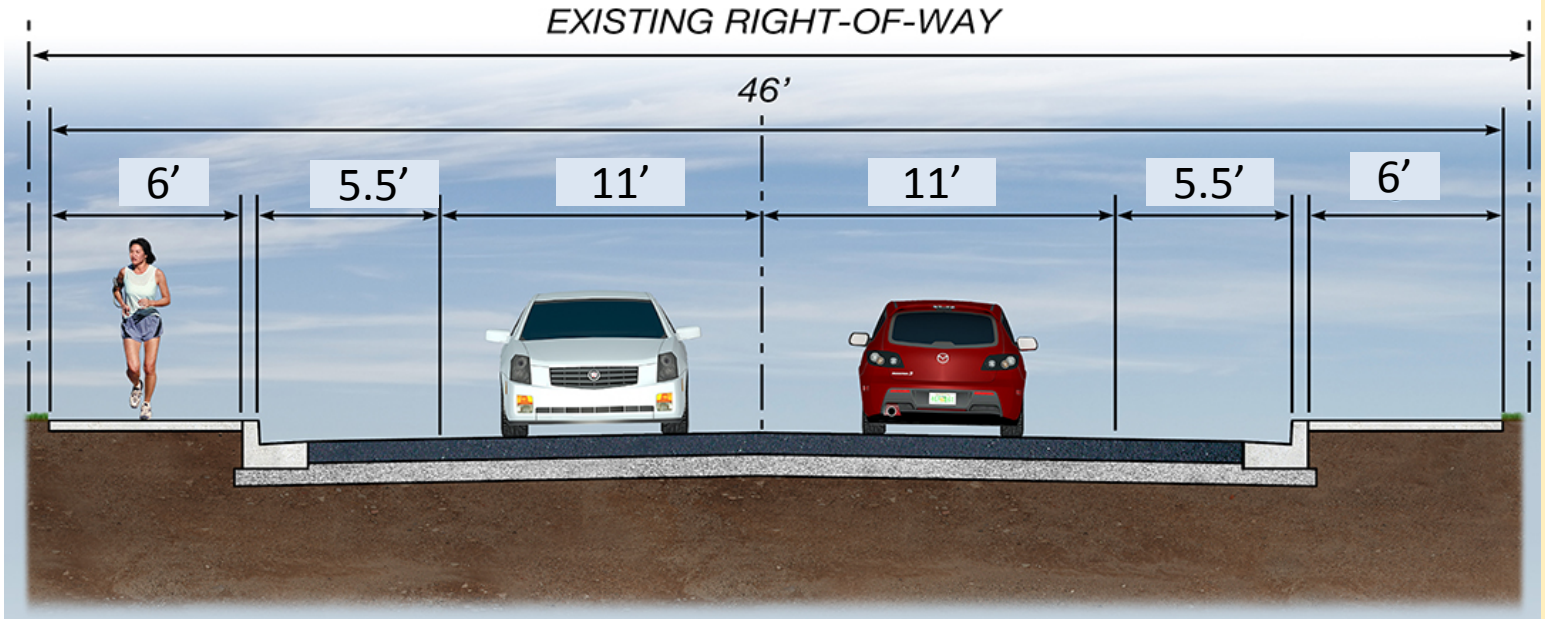
Movable Bridge Typical Section

Total Bridge Width – 47.2 feet



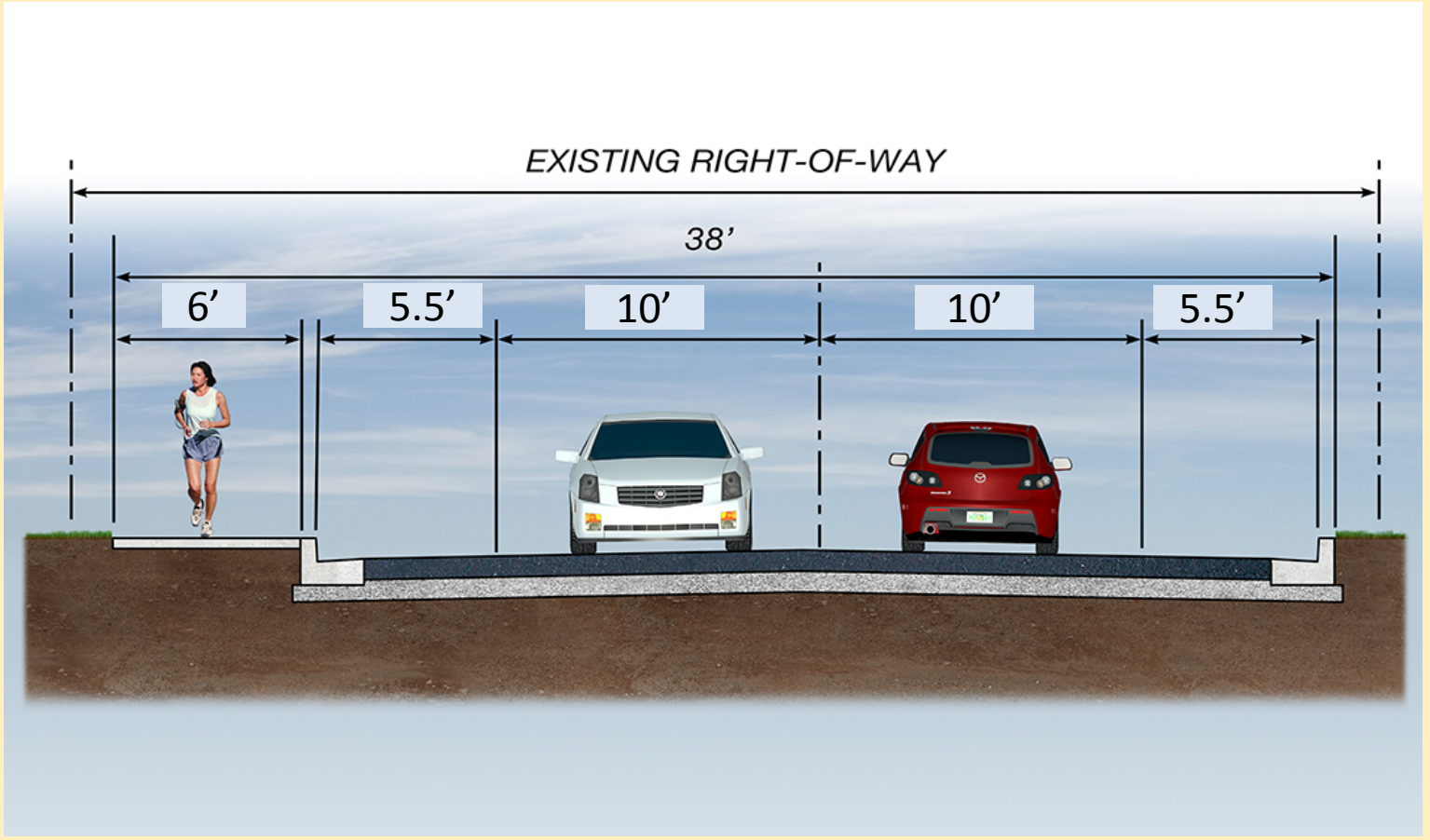
Proposed Roadway Typical Section – East of Movable Bridge

Total Width – 46 feet



Proposed Roadway Typical Section – West of Movable Bridge

Total Width – 38 feet



Aesthetics - Existing Bridge

Aesthetics - New Movable Bridge

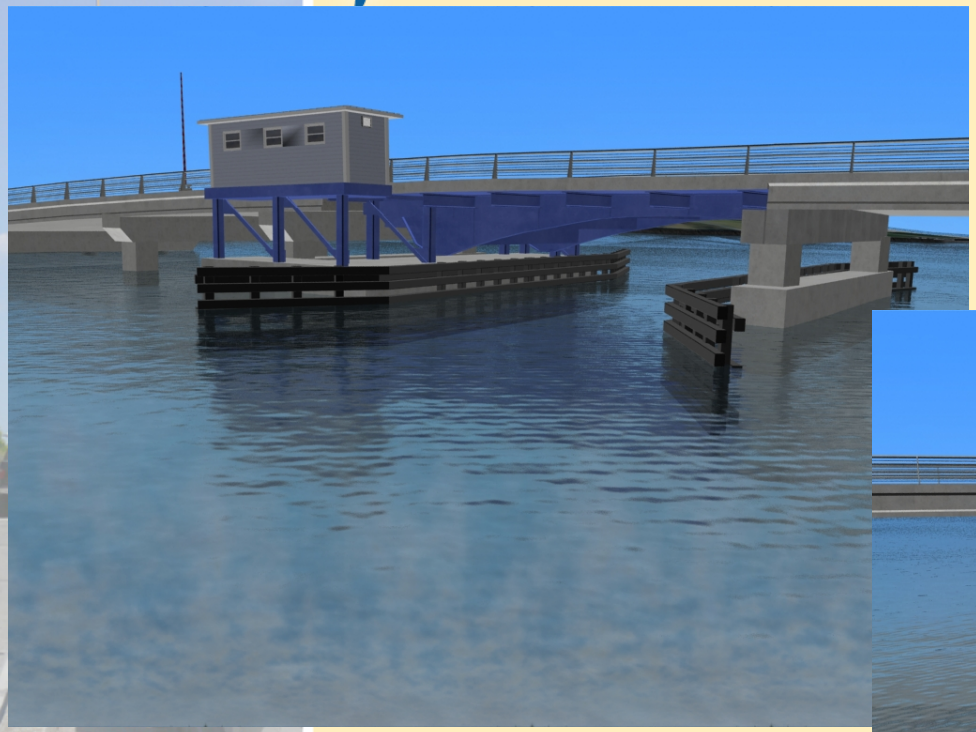
Aesthetics New Movable Bridge

"Industrial" Style
Rolling-Lift Bascule Bridge

Aesthetics New Movable Bridge

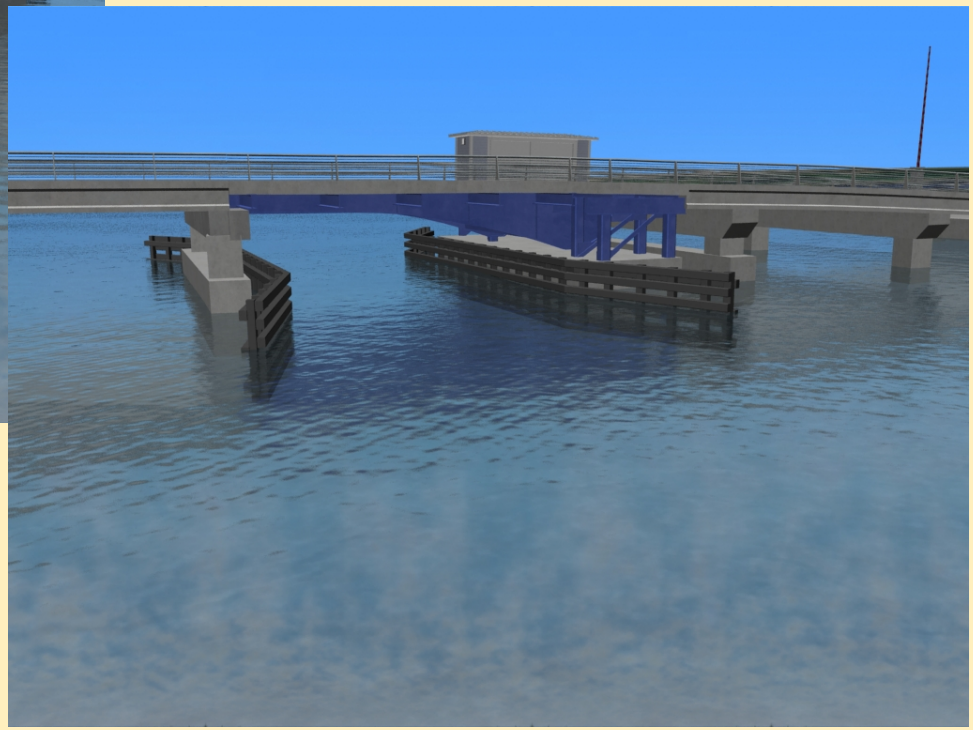
"Industrial" Style
Rolling-Lift Bascule Bridge

Aesthetics New Movable Bridge



3D Model Views

Industrial Style



Aesthetics – New Movable Bridge

If Conceptual Design for the Movable Bridge is

- Selected as "Preferred Alternative" after the Public Hearing

and

- Approved by FHWA

Aesthetics will be determined in Design Phase

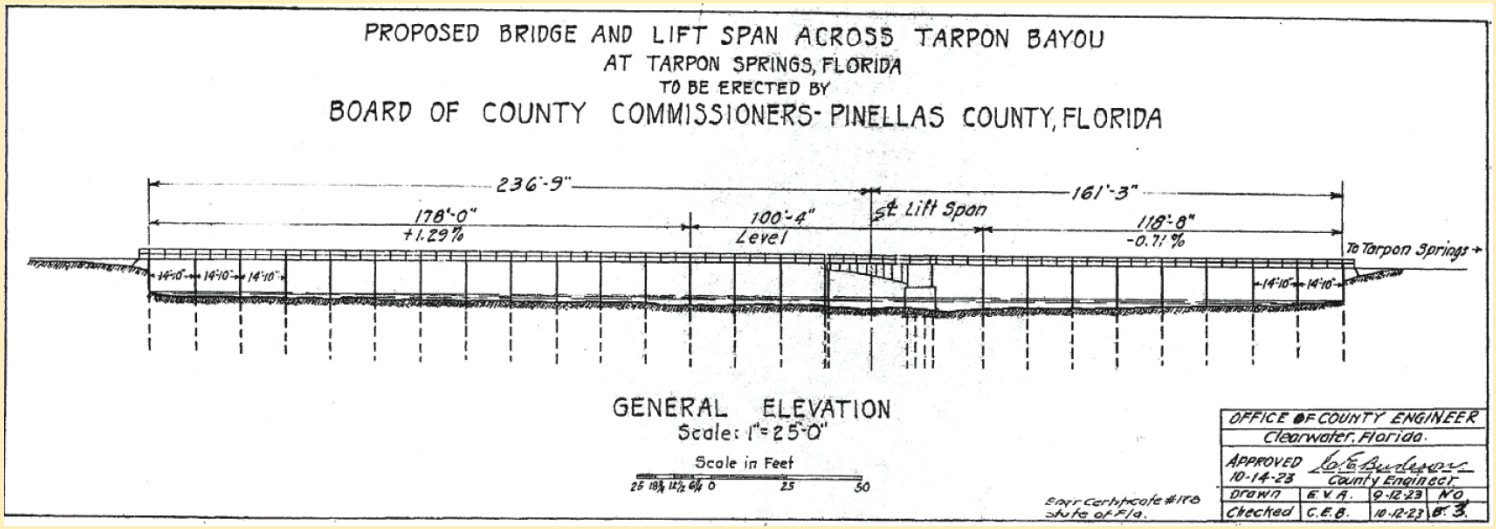
Future Opportunities for Public Input

Minimization/ Mitigation Options

Required Mitigation

Historic American Engineering Record (HAER) Documentation

- Large format photographs
- Written history/narrative
- Historic bridge plans copied on archival paper



Minimization/ Mitigation Options

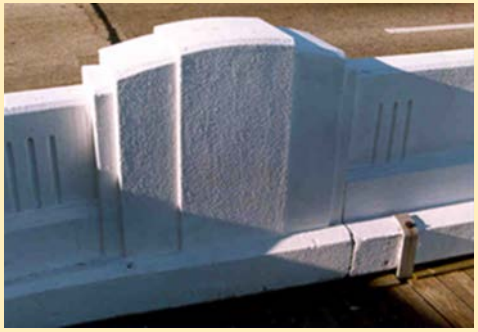
Possible Mitigation

- Choose Bridge Rail to Preserve Viewshed from Bridge
- Educational Kiosk/Monument in Public Space
  - On or Near Bridge
  - In City Park or Museum
- Incorporate Monument into Second Control House
- Incorporate Portion of Original Bridge into New Bridge

Minimization/ Mitigation Options

Example – Treasure Island

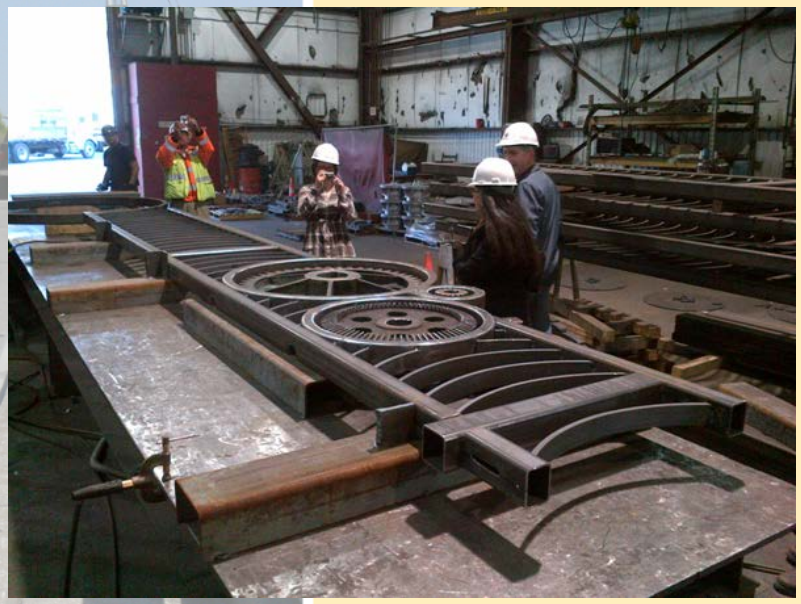
Monument Bridge in City Park – Treasure Island

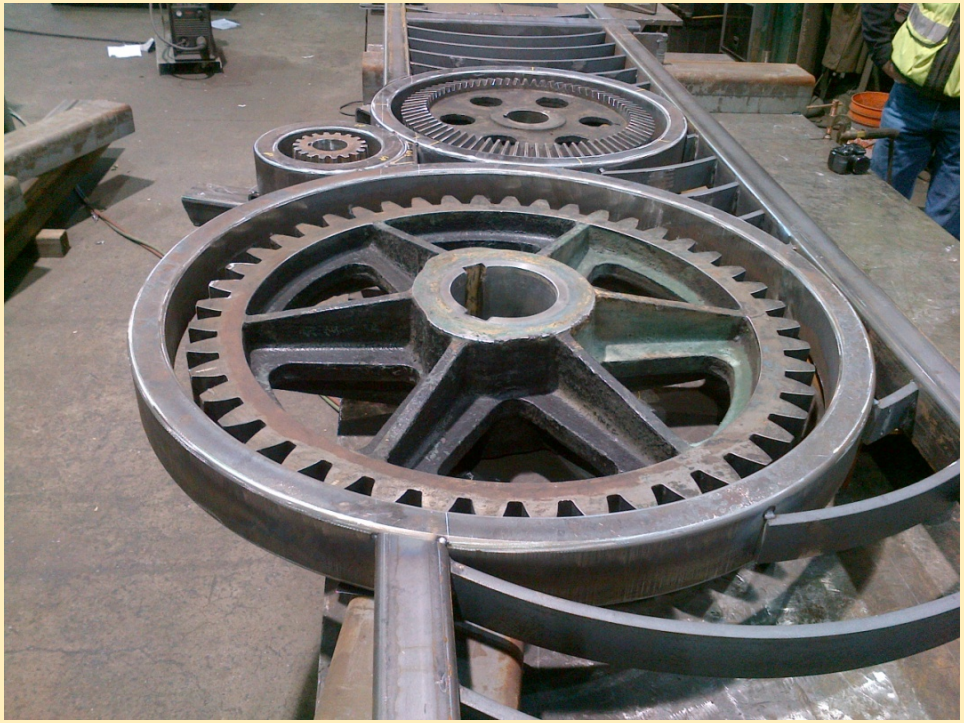


Minimization/ Mitigation Options

Example - South Park Bridge, Seattle, WA

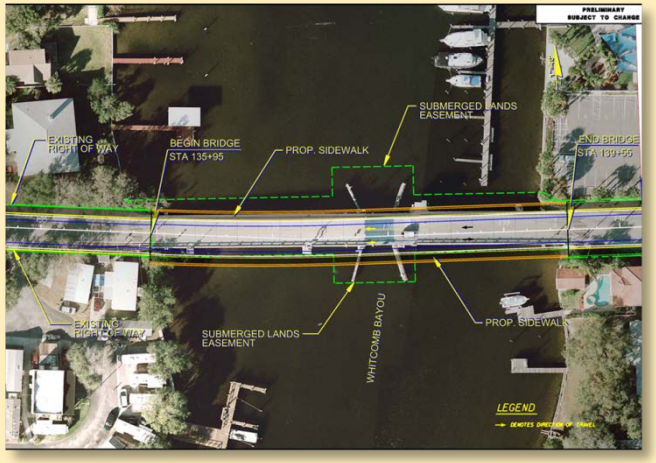
Incorporating Part of Existing Bridge into New Bridge





Next Steps in PD&E Process

- Present Recommended Alternative to MPO Advisory Committees/Board
- CRC Meeting
  - Continue coordination of Section 106 Issues
  - Solicit input on possible mitigation if Movable Bridge is selected as “Preferred Alternative”



Next Steps in PD&E Process

Present Recommended Alternative at Public Hearing in February 2014

- Presentation will include discussion of all alternatives considered
- Public comments recorded by court reporter
- Comments included in Project Record

Next Steps in PD&E Process

- Consider Public Hearing Input
- Finalize Engineering/Environmental Documents
- Continue SHPO Coordination
  - Complete Section 106 documents
  - Develop MOA
    - SHPO, FHWA, FDOT,
    - USCG, County

Submit Final Documents to FHWA for Approval

Thank You!

Questions and Discussion