

Beckett Bridge PD& E Study

Presentation to:

Board of County Commissioners



URS

**JANUS
RESEARCH**

October 22, 2013

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**


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



Pinellas County 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

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

Pinellas County **PD&E Process – Affected Stakeholders**

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



A photograph of a bridge with a concrete railing. A vehicle is visible in the distance on the bridge. The railing is made of concrete blocks. The bridge is paved with asphalt. The background shows some buildings and trees under a clear sky.



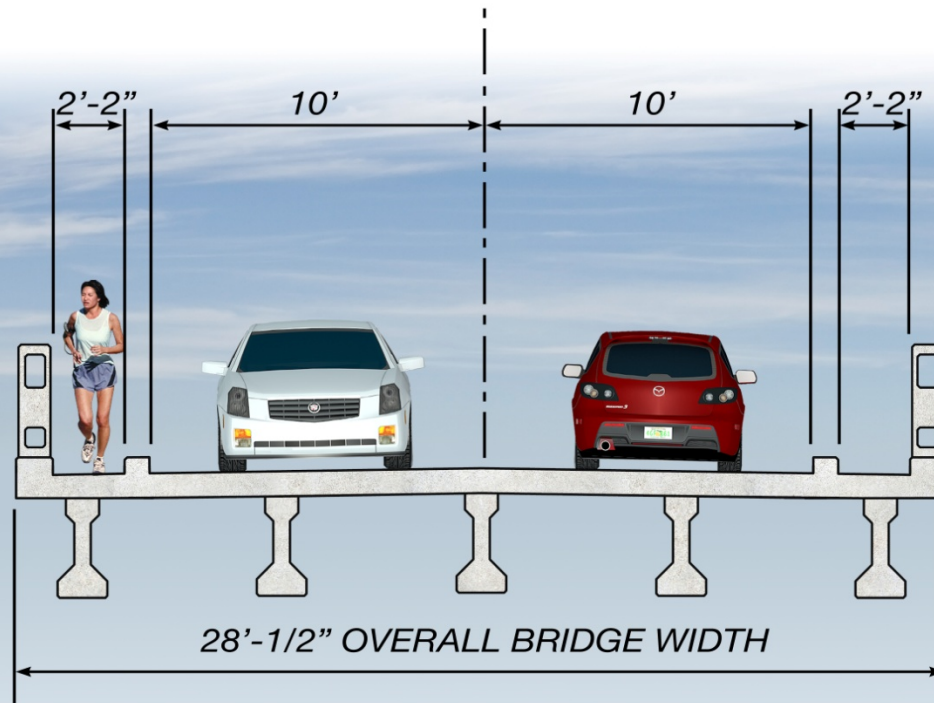


Pinellas County Beckett Bridge

- **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

- **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

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

**Total # Bridge
Openings**

2009 - 10

2010 - 20

2011 - 18

2012 - 14



Condition Assessment

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

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



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



- **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**



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



Existing Crutch Bents

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)



- **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 (28 ft Vertical Clearance)	4

- **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



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

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

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

Pinellas County 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

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

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

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**



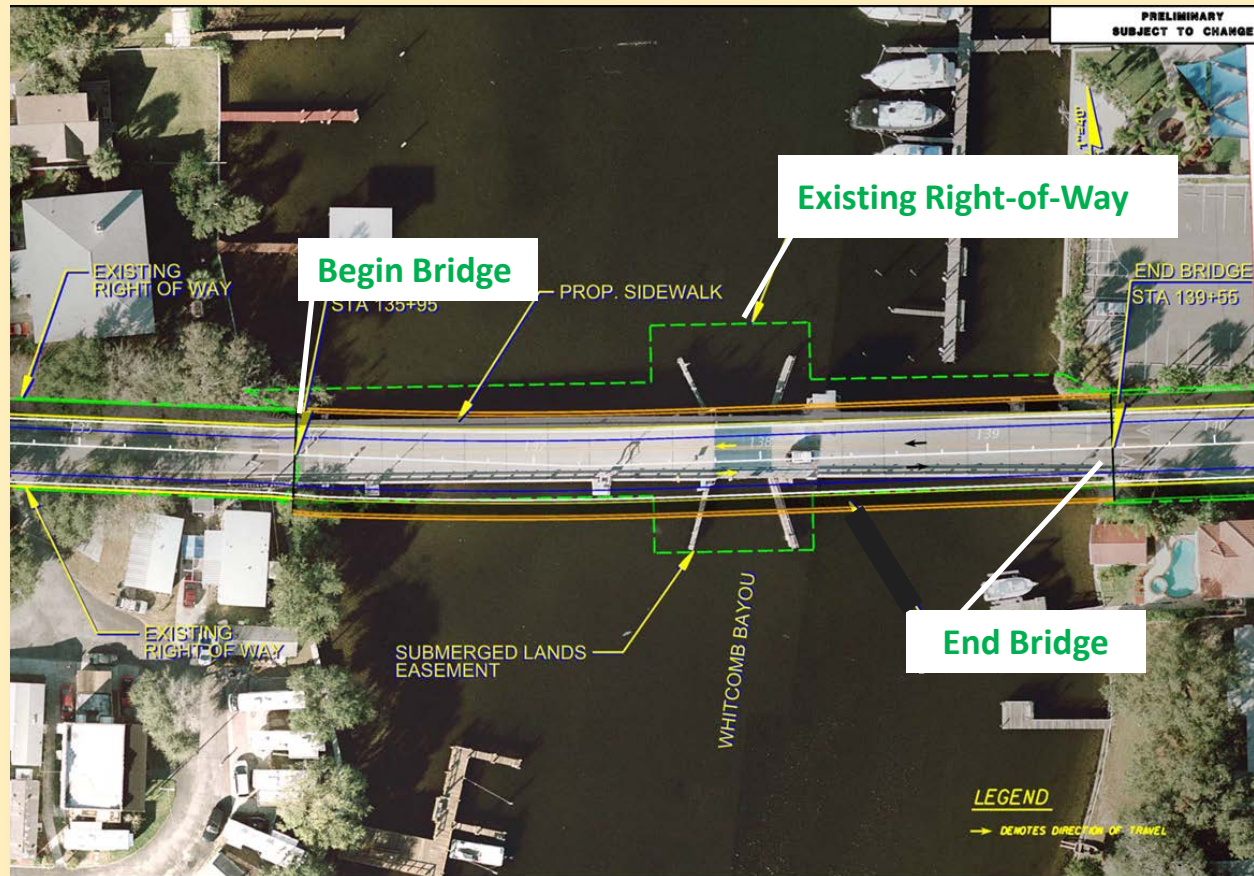
Recommended Alternative

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

No Impacts to Adjacent Property

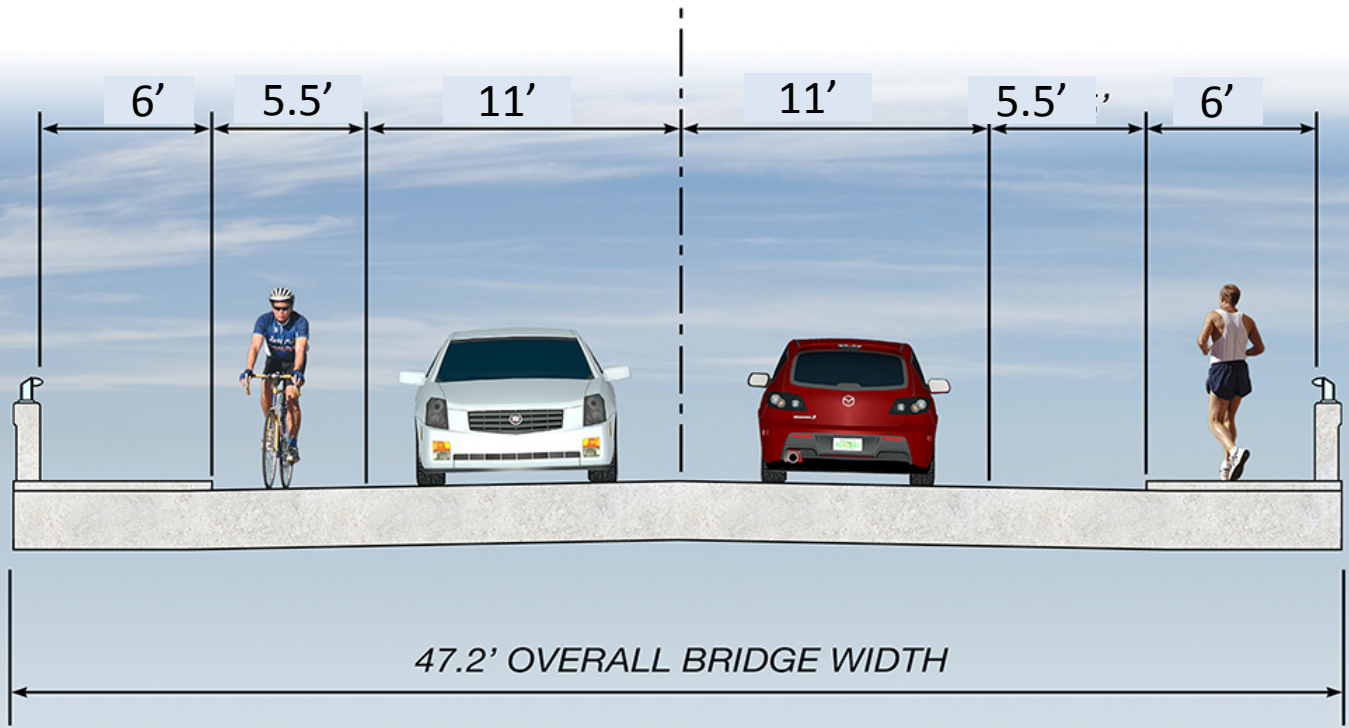


Description

- 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

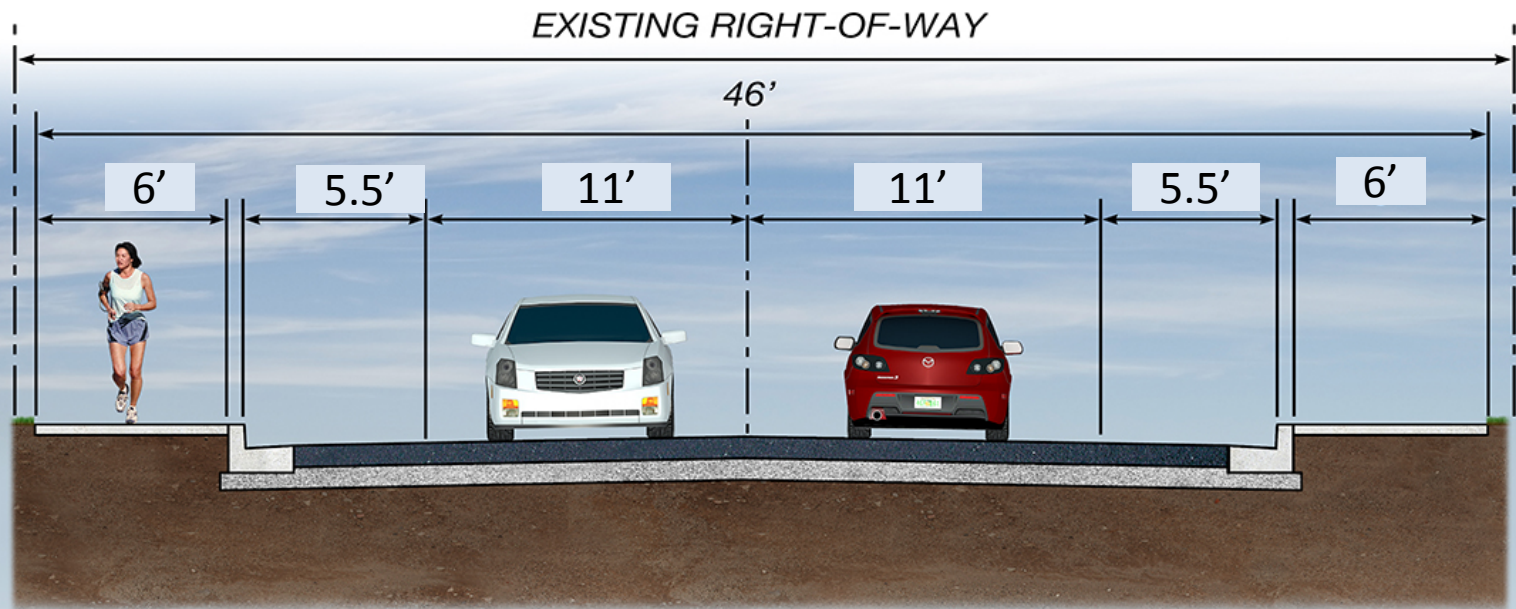


Total Bridge Width – 47.2 feet



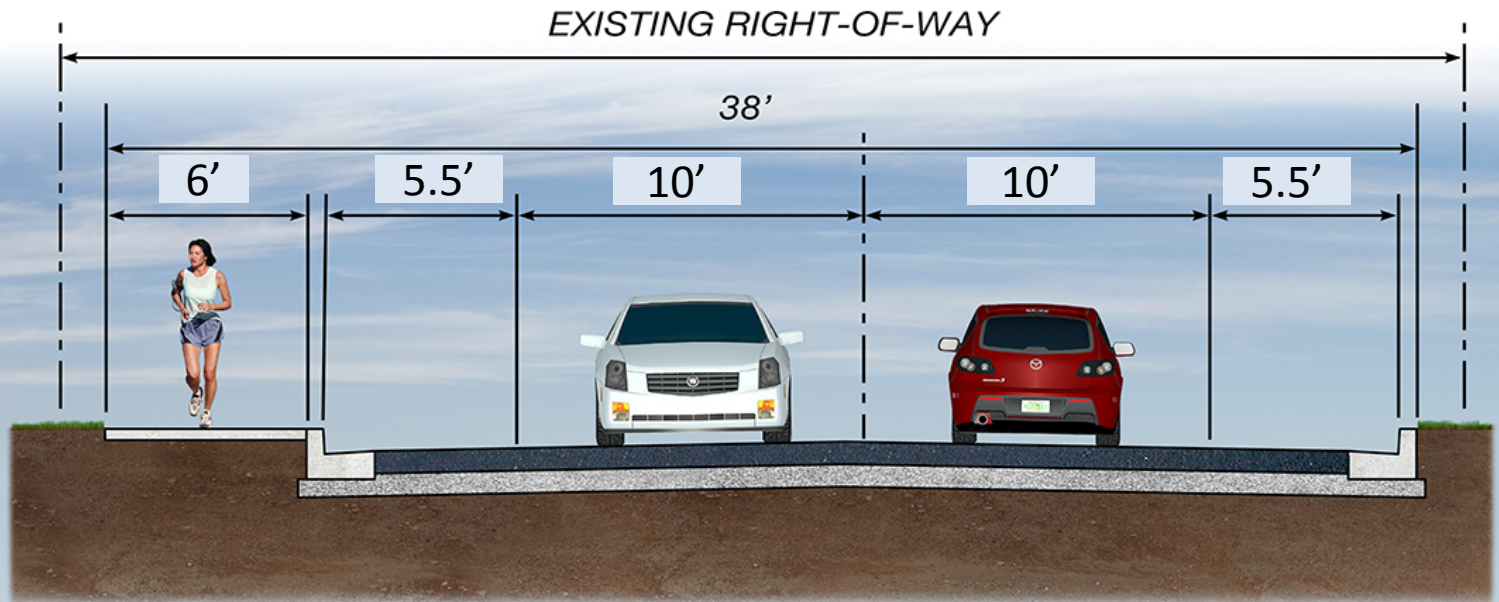
Pinellas County Proposed Roadway Typical Section – East of Movable Bridge

Total Width – 46 feet



Pinellas County Proposed Roadway Typical Section – West of Movable Bridge

Total Width – 38 feet





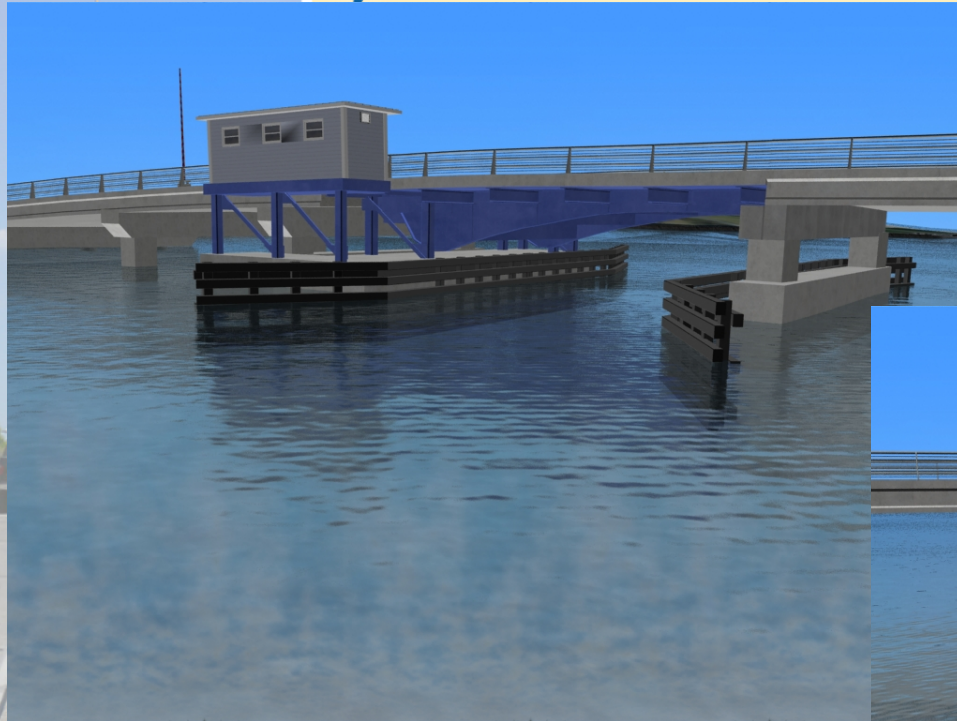


“Generic” Movable Bridge

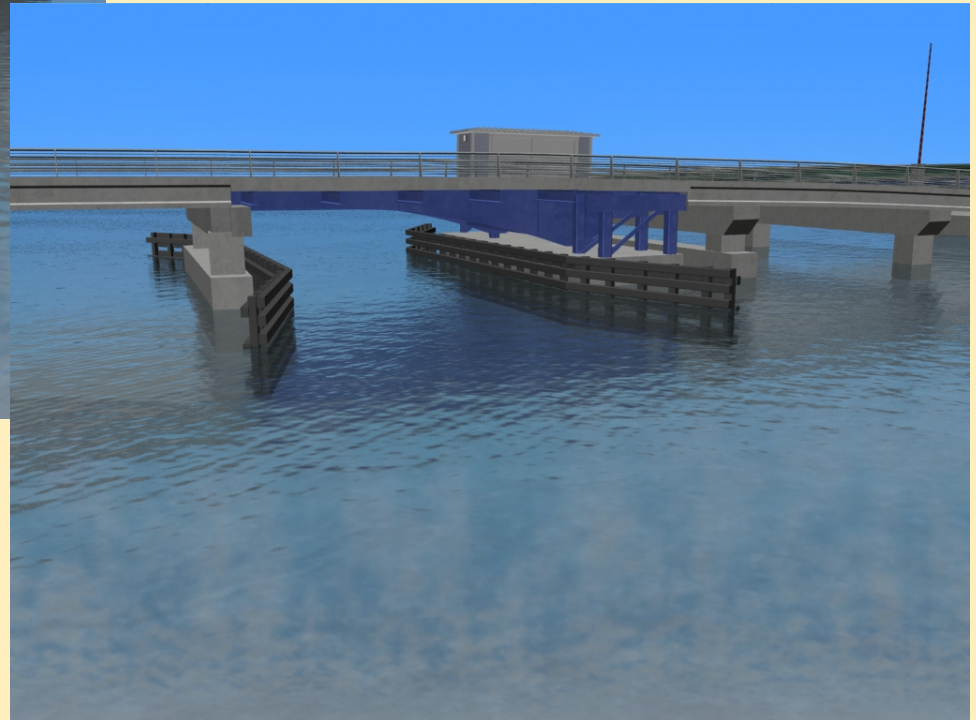
**“Industrial” Style
Rolling-Lift Bascule Bridge**







3D Model Views Industrial Style



If Conceptual Design for the Movable Bridge is

- Selected as “Preferred Alternative” after the Public Hearing

and

- Approved by FHWA

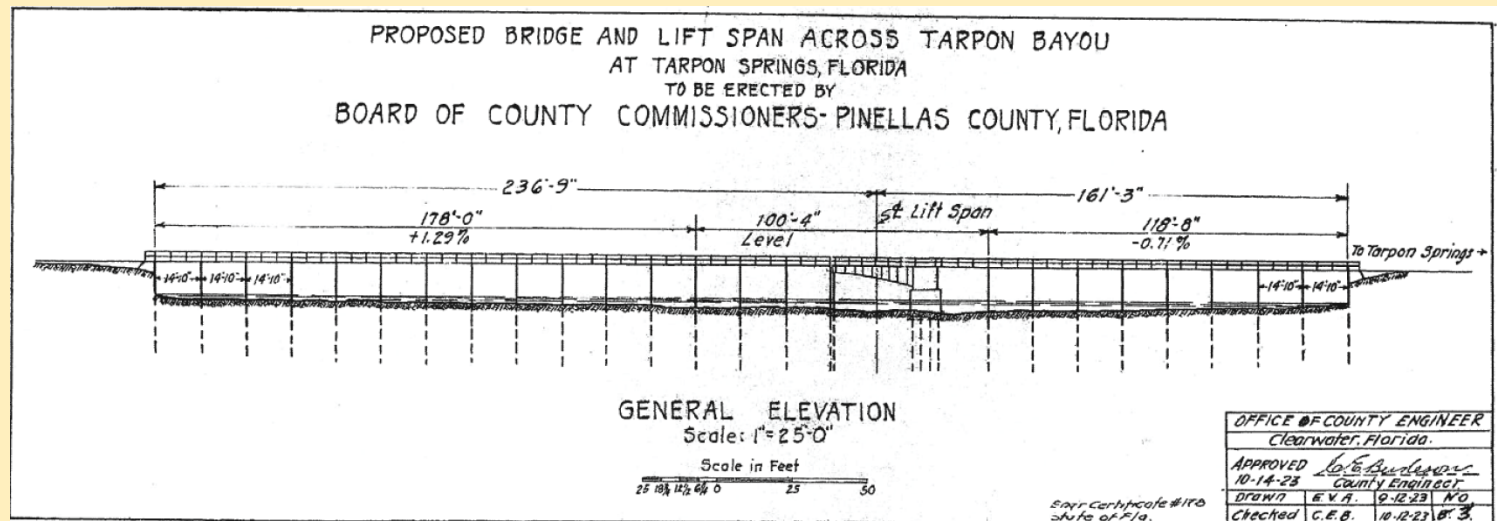
Aesthetics will be determined in Design Phase
Future Opportunities for Public Input

Pinellas County Minimization/Mitigation Options

Required Mitigation

Historic American Engineering Record (HAER) Documentation

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



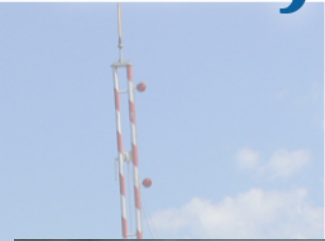
Possible Mitigation

- 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



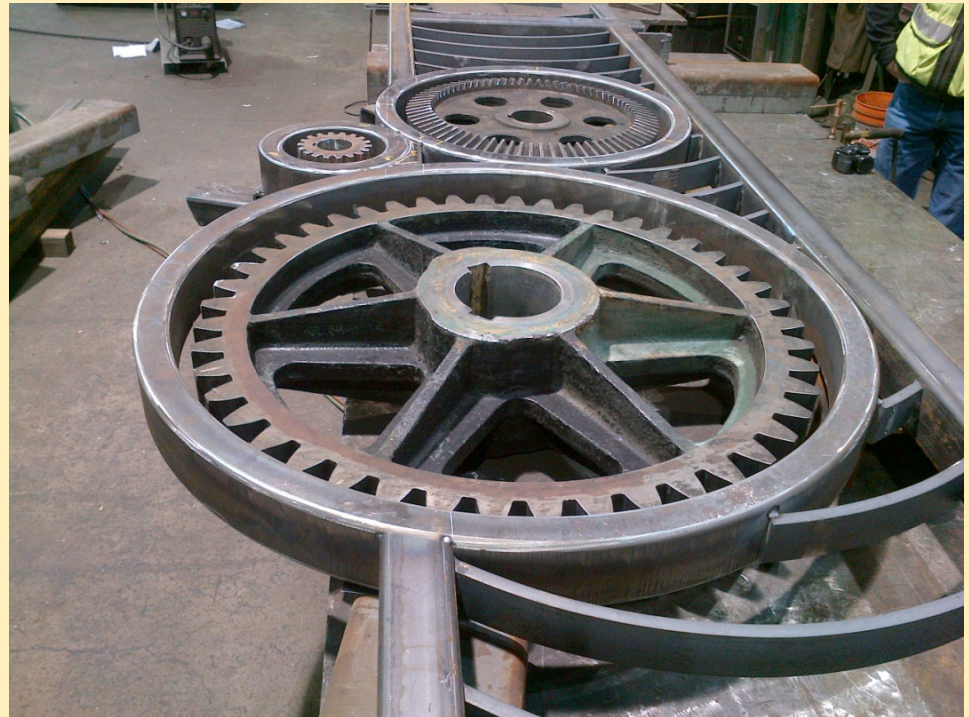
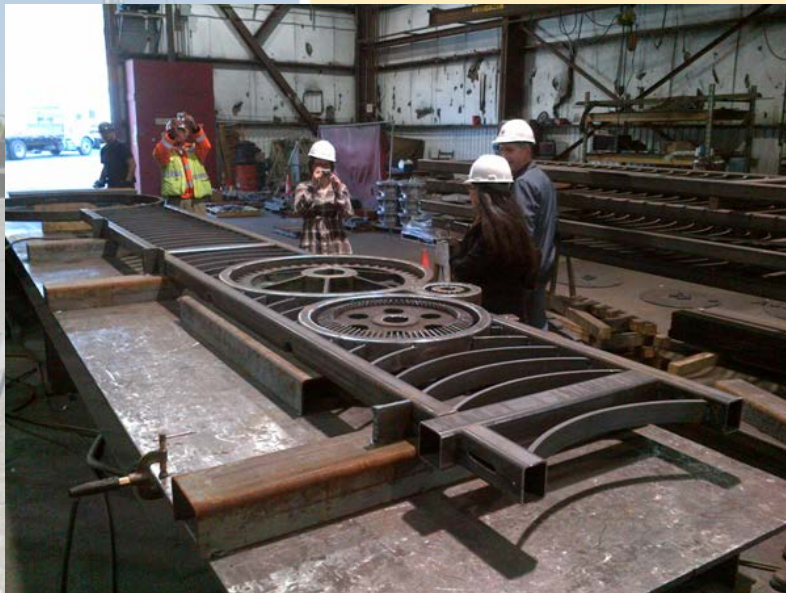
Example – Treasure Island

Monument Bridge in City Park – Treasure Island



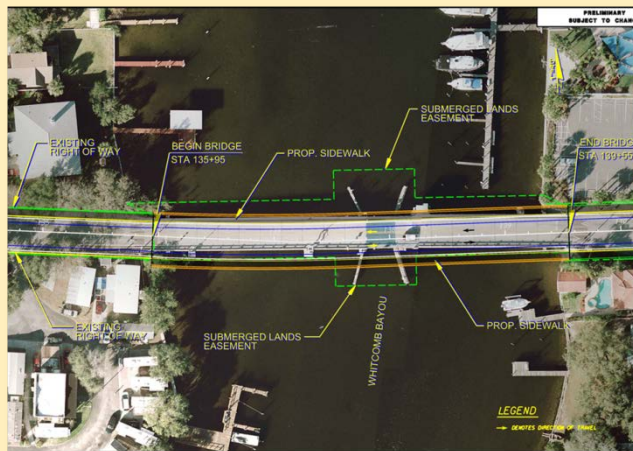
Example - South Park Bridge, Seattle, WA

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”



Present Recommended Alternative at Public Hearing in February 2014

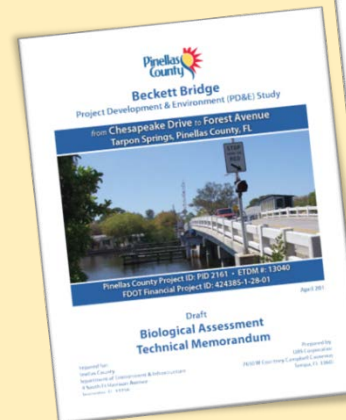
- **Presentation will include discussion of all alternatives considered**
- **Public comments recorded by court reporter**
- **Comments included in Project Record**



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



Questions and Discussion

