#### **Monmouth County Three Bridges**

Boroughs of Brielle and Manasquan

**Structure W-8**, Fisk Avenue Culvert between Debbie's Creek and The Glimmer Glass

Bridge W-9, Brielle Road Bridge over The Glimmer Glass







#### **Public Information Center #2**

The Curtis House, Brielle 2-4 PM Manasquan Borough Hall, Manasquan 6-8 PM

December 15, 2016









# Agenda

- Welcome / Introductions
- Purpose of Meeting / Format
- Project Delivery Process
- Review of Spring 2016 Stakeholder and PIC Input
- Review of P&N, Goals and Opportunities
- Review of Project Alternatives
- Next Steps









# **Project Delivery Process**

PHASES	Scoping	Final Design / Right of Way Acquisition	Construction
MAJOR TASKS	Purpose and Need Statement  Data Collection & Environmental Screening  Prepare Environmental Studies and Develop Alternatives Alternative Analysis / Evaluation  Approved Environmental Document  Cost Estimate (Final Design, ROW and Construction)	Environmental Reevaluations  Environmental Permits  Acquisition of ROW  Construction Contract Documents and PS&E Package	Complete Construction  As-Builts  Close-Out Documentation



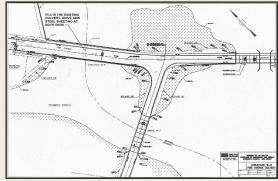


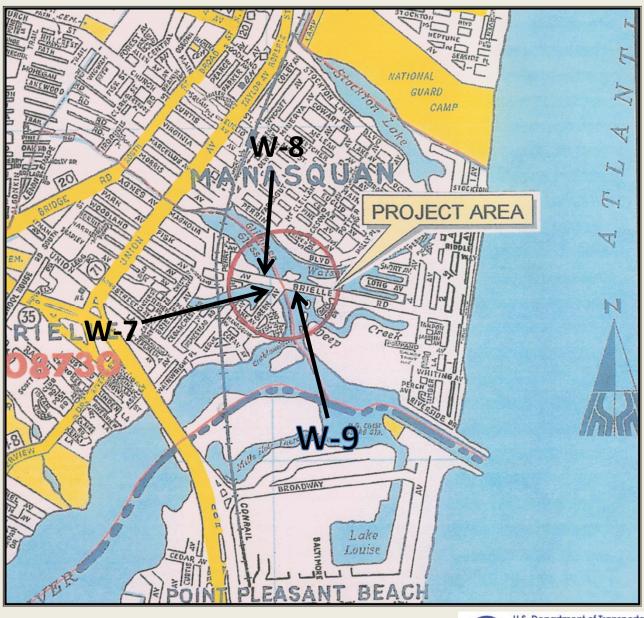


We are here



# Location Map













#### May 24, 2016 PIC Meeting Summary

Brielle Township: 2:00-4:00pm Manasquan Township: 6:00-8:00pm

#### **Purpose of PIC**

- Re-introduce Project
- Solicit Public Opinion on Purpose, Needs, Goals and Objectives

#### **PIC Notifications and Invitations**

- Municipal Websites
- Notification by Mail 324
- Email Contacts 48
- Newspaper Legal Notices: APP and Coast Star
- Bulletin Boards/Flyers within study area
- Project Website Visits during May/June ~ 600









#### May 24, 2016 PIC Meeting Summary

- 84 Attendees, Excluding Project Team
  - Brielle Attendees: 45
  - Manasquan Attendees: 39
- **160** Comments Recorded by Team Members
  - 64 Comments from Suggestion Boxes and 30-Day Period
    - Suggestion Boxes: 32
    - E-mail: 30
    - via Mail / Fed Ex: 2
- Project Website FAQ









#### Six Categories: (in no particular order)

- Safety / Bicyclists / Pedestrians
- Operations (roadway and waterway)
- Historic Significance and Character of the Area
- Environmental and Right of Way Impacts
- Cost / Funding / Schedule
- Suggestions for Alternatives









#### Safety

- Safety for all users, especially for pedestrians and bicyclists
- Roads and bridges are too narrow for all users to share
- Speeding (on roadways and to get to Bridge W9)
- Truck traffic will increase if roads/ bridges are widened and load limits increased
- Safety needs of kayakers under Bridge W7









#### **Operations**

- Bridge W9 takes too long to open / close
- Traffic disruption for frequent repairs
- Need better sidewalk/ bike connectivity
- Tidal flooding impacts on traffic
- Storm/ flood evacuation
- Improve traffic signing and controls
- Access by EMS and storm evacuation vehicles
- Dredge waterways to accommodate maritime use and improve tidal circulation
- Information provided on vehicle traffic, Bridge W9 opening delays, congestion, bicycle/ pedestrian/skate board use









#### **Historic Significance and Character of Area**

- Preserve aesthetics
- Area character and history is important
- Include Preservation of Bridge W9 in Purpose / Need
- Save/ Rehabilitate Bridge W9









#### **Environment and Right of Way**

- Protect environment/ minimize temporary and permanent impacts/ avoid use of CCA/ AZCA timber
- Avoid/Minimize acquisition of property for project

#### **Cost/ Funding/ Schedule**

- Cost where is funding coming from?
- Schedule Concern over lengthy design and construction schedules, expedite construction
- Why Delay?, Resolutions of project support already provided by Manasquan and Brielle (2003, 2008, 2014)









#### **Suggestions for Alternatives**

- Replace Bridge W9 to modern standards but design it to "look same" as existing
- Build new bike/ pedestrian bridge parallel to W9
- Remove W9 and insert as part of W7, or as a fishing pier in vicinity of project
- Rehabilitation
- Include a sidewalk on both sides of Bridge W7
   Note Nov. 2016 Stakeholder comment: Include sidewalks on both sides of all three bridges/roadways for full length of project limits.









# Project Purpose and Needs (definition)

- Project Purpose identifies the intent of the project undertaking
- Project Needs identify specific deficiencies and critical concerns to be addressed by the project
- Projects typically also have goals and objectives that are strived for as part of the project; not all may be achieved by the final selected alternative









# Project Purpose

To provide a safe and efficient crossing for all modes of travel within the project limits by addressing the geometric, structural,

and operational and maintenance deficiencies of:

Bridge W-7 (Green Avenue over Debbie's Creek), Structure W-8 (Fisk Avenue Culvert), and Bridge W-9 (Brielle Road over the Glimmer Glass).









# **Project Needs**

- Bridge Needs (including emergency vehicles, clearances, bridge width)
- Roadway Needs (Lane/Shoulder Widths)
- System Linkage (Emergency Response, Coastal Evacuation, Marine Access)
- Pedestrian and Bicycle Compatibility / ADA









# Project Goals and Objectives

- Provide sidewalk connectivity
- Reduce the safety risks for all users
- Reduce the frequency of major bridge maintenance activities
- Maintain traffic with minimum disruption during construction

Slide 1 of 2









# Project Goals and Objectives

- Avoid or minimize social, economic and environmental impacts
- Avoid, minimize and, if necessary, mitigate adverse effects on the National and NJ Register of Historic Places listed Bridge W-9
- Incorporate Context Sensitive Solutions approach into the design

Slide 2 of 2









#### Revisions to P & N, Goals and Objectives

The existing already cover many comments/ concerns. Noted are:

- Add "minimize flooding" to Project Goals
  - Issues fall outside Project Limits
- Include Preservation of Bridge W9 in the Purpose and Needs
  - Since not a Historic Bridge Preservation Project, not specific to P & N
  - Historic importance already included in two Project Goals and Objectives:
  - "Avoid, Minimize and, if necessary, mitigate adverse effects on the National and NJ Registers of Historic Places listed Bridge W-9."
  - "Incorporate Context Sensitive Solutions approach into the design"
- Add "streamline design & construction schedules" and "Cost Effective Design" to Project Goals
  - Will Incorporate Value Engineering into Design









- Alternatives investigated generally include:
  - No-Build (required by FHWA serves as baseline)
  - Rehabilitation
  - Replacement
- Parallel replacement bridge alternatives were also investigated for Bridge W-9 with several subalternative variations
- For movable bridges, a fixed-span bridge (non-movable) alternative is also required by FHWA.









#### No-Build Alternative

- Required by FHWA
- Serves as baseline with which to compare alternatives
- Includes normal maintenance and repairs and can include minor safety upgrades









Secretary of the Interior (SOI) Standards for the Treatment of Historical Properties

- Title 36, Chapter I of the Code of Federal Regulations (CFR)
- Requires work to be "compatible with the historic materials, features, size, scale and proportions, and massing to protect the integrity of the property"









#### Structural Capacity/Load Posting

 All bridges are rated based on their as-built condition as modified by current conditions



Bridge W-7

- Bridges are rated for several legal vehicles defined by the State (2 axle, 3 axle, etc.)
- Load posting required when rated load < legal load</li>
- Posting represents maximum permissible weight per vehicle type









#### Roadway Functional Classifications

 NJDOT classification of Fisk Ave/Brielle Road: Urban Major Collector



Imagery ©2015 DigitalGlobe, USDA Farm Service Agency, Map data ©2015 Google









#### Lanes

- For urban collectors: "Lanes within the traveled way should range in width from 3.0 to 3.6 m [10 to 12 ft]."
  - AASHTO Policy on Geometric Design of Highways and Streets

#### Shoulders

- "Shoulder width of at least 5 ft (1.5 m) is recommended from the face of a guardrail, curb, or other roadside barrier..."
  - AASHTO Guide for the Development of Bicycle Facilities

#### Sidewalks

- "...the continuous clear width of pedestrian access routes shall be 1.2 m (4.0 ft) minimum, exclusive of the width of the curb."
- "...passing spaces shall be provided..." and "... shall be 1.5m (5.0 ft) minimum by 1.5 m (5.0 ft) minimum."
  - United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way









#### Clear Zone

Defined as "the unobstructed, traversable area provided beyond the edge of the traveled way for the recovery of errant vehicles...includes shoulders, bicycle lanes, and auxiliary lanes"

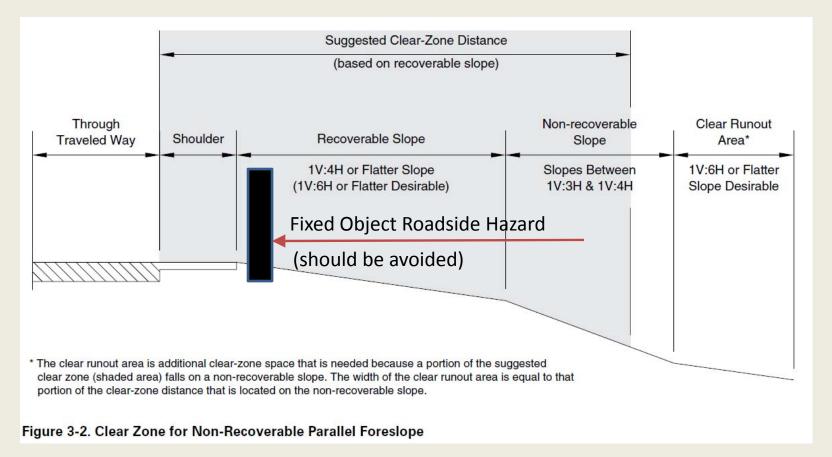
"Where establishing a full-width clear zone in an urban area is not practical...consideration should be given to establishing a reduced clear zone or incorporating as many clear zone concepts as practical, such as removing roadside objects or making them crashworthy"

 AASHTO Policy on Geometric Design of Highways and Streets









For the design speed and traffic volume on Fisk Avenue/Brielle Road, the AASHTO suggested minimum clear zone distance is <u>12 feet</u>.









#### **EXISTING CONDITIONS:**

- NARROW BRIDGE ROADWAY WIDTH (21.7')
- SUBSTANDARD LIVE LOAD CAPACITY
- SUBSTANDARD RAILINGS
- 2013 NBIS REPORT SUFFICIENCY RATING OF 18.7
   OUT OF 100



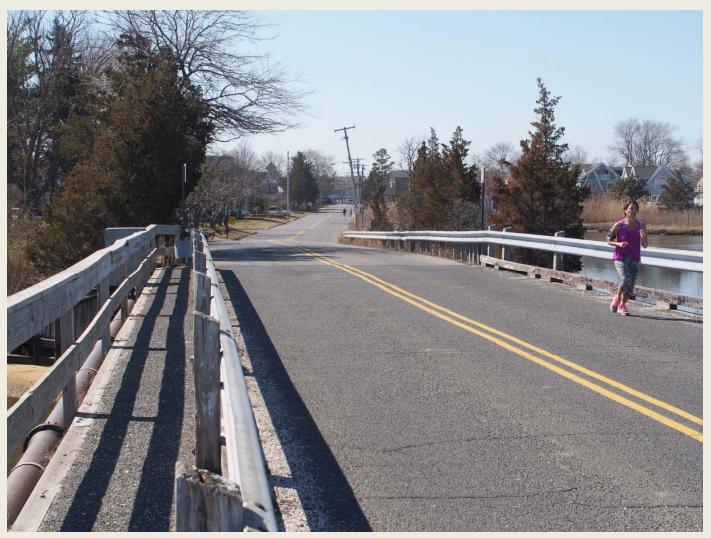








## W-7: Green Avenue over Debbie's Creek











Monmouth County Bridge W-7
Green Avenue over Debbie's Creek



- Alternative 1 No-Build
- Alternative 2 Rehabilitation
- Alternative 3 Replacement with Wider Bridge





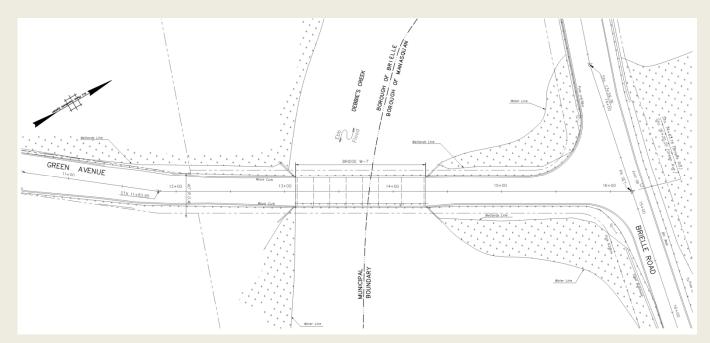




Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### Alternative 1: No-Build

Perform regular maintenance and repairs only











Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### **Alternative 2: Rehabilitation**

- Rehabilitate with like materials/components (timber)
- Increase structural capacity
- Maintain span arrangement
- Maintain existing curb-to-curb roadway width
- Widen bridge slightly to accommodate standard ADA compliant sidewalk
- Upgrade roadside safety features (railings, end treatments, etc.)



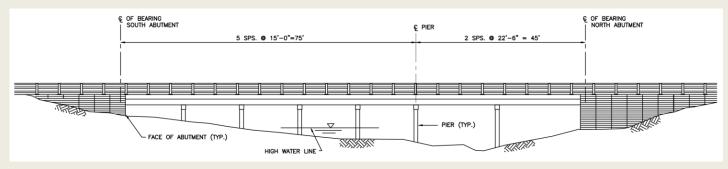


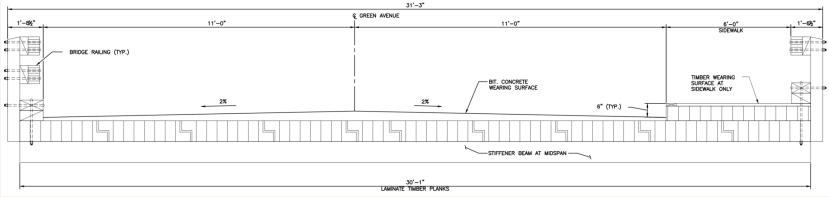




Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### Alternative 2: Rehabilitation







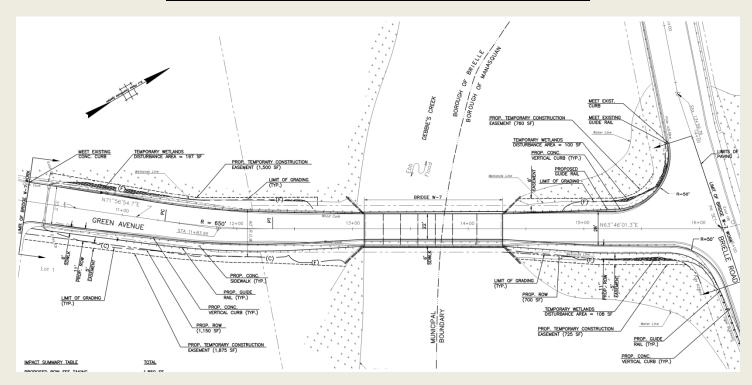






Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### **Alternative 2: Rehabilitation**











Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### Alternative 3: Replacement with Wider Bridge

- Provide new bridge with more durable materials (concrete)
  - Architectural treatments can be explored in final design
- Reduce number of piers/spans
- Widen bridge to provide standard width lanes with bicycle compatible shoulders and standard ADA compliant sidewalk
- Public comment: Consider providing sidewalks on each side and consider adding additional sidewalk width to accommodate fishing



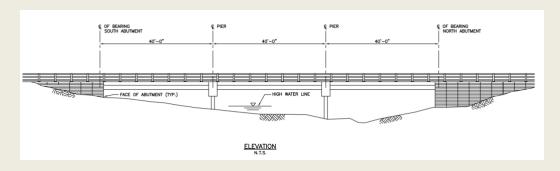


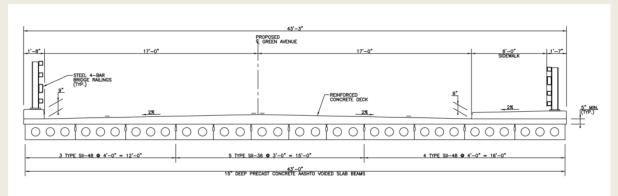




Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### Alternative 3: Replacement with Wider Bridge







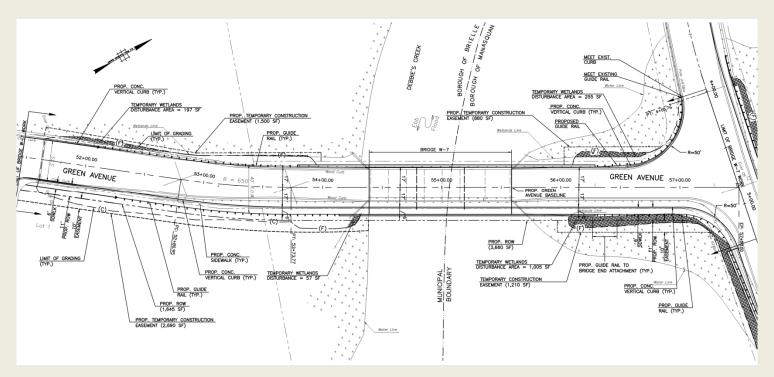






Monmouth County Bridge W-7
Green Avenue over Debbie's Creek

#### Alternative 3: Replacement with Wider Bridge

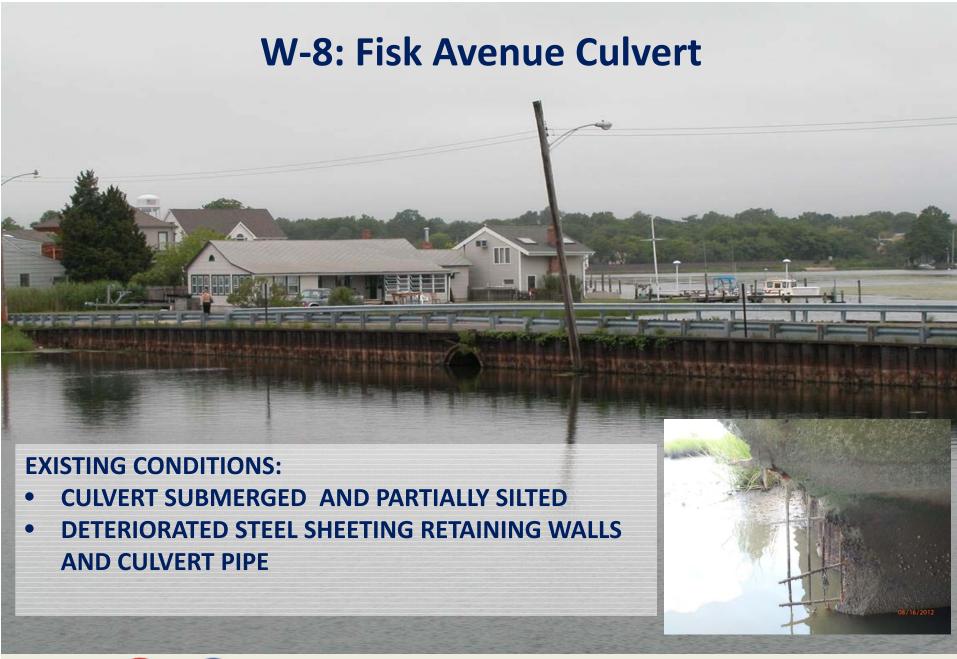




















## W-8: Fisk Avenue Culvert



Fisk Avenue, looking west









Monmouth County Bridge W-8
Fisk Avenue Culvert



- Alternative 1 No-Build
- Alternative 2 Rehabilitation
- Alternative 3 Elimination of the Culvert
- Alternative 4 Replacement of Culvert





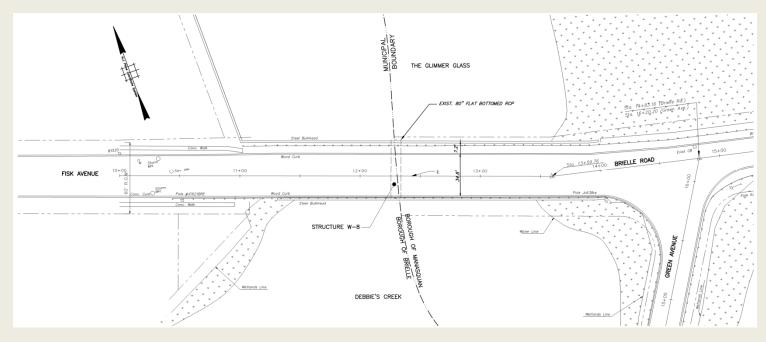




Monmouth County Bridge W-8
Fisk Avenue Culvert

#### Alternative 1: No-Build

Perform regular maintenance and repairs only











# Monmouth County Bridge W-8 Fisk Avenue Culvert

#### Alternative 2: Rehabilitation

- Rehabilitate culvert with like materials/components
  - Repair spalls
  - Consider use of a pipe liner
- Remove debris and reestablish inlet and outlet
- Rehabilitate steel bulkhead and headwalls at each end
- Maintain existing roadway width
- Public comment: Consider replacing steel bulkhead along full length of causeway (both sides)



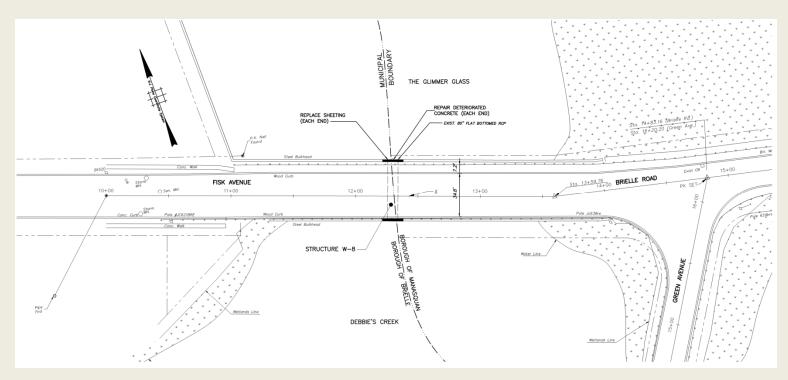






Monmouth County Bridge W-8 Fisk Avenue Culvert

#### Alternative 2: Rehabilitation











Monmouth County Bridge W-8
Fisk Avenue Culvert

#### <u>Alternative 3: Elimination of the Culvert</u>

- Completely remove culvert
- Fill void
- Maintain existing roadway width
- Drive new steel sheeting at both ends
- > Public comment: Elimination of culvert would have strong negative effect on Debbie's Creek



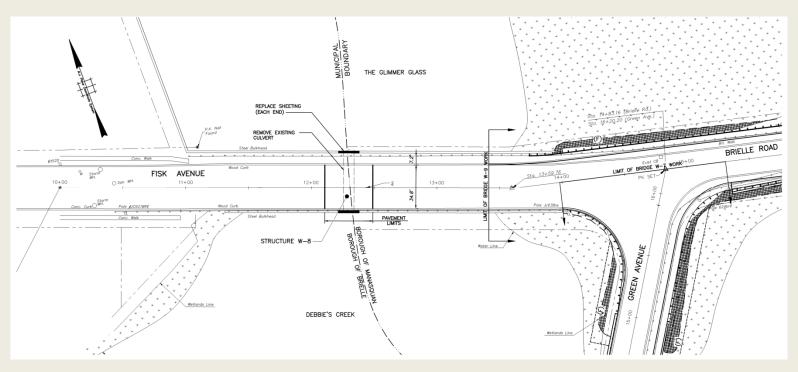






Monmouth County Bridge W-8
Fisk Avenue Culvert

#### Alternative 3: Elimination of the Culvert











Monmouth County Bridge W-8
Fisk Avenue Culvert

#### Alternative 4: Replacement of Culvert

- Provide new culvert with similar materials (concrete)
  - Match existing hydraulic opening
- Rehabilitate steel bulkhead at each end
- Public Comment: Consider increasing the hydraulic opening to improve flow between the Glimmer Glass and Debbie's Creek
- ➤ Public Comment: Consider replacing steel bulkhead along full length of causeway (both sides)



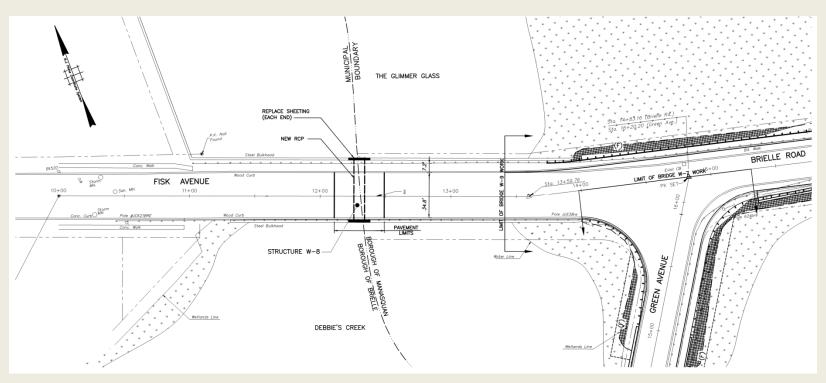






Monmouth County Bridge W-8
Fisk Avenue Culvert

#### Alternative 4: Replacement of Culvert

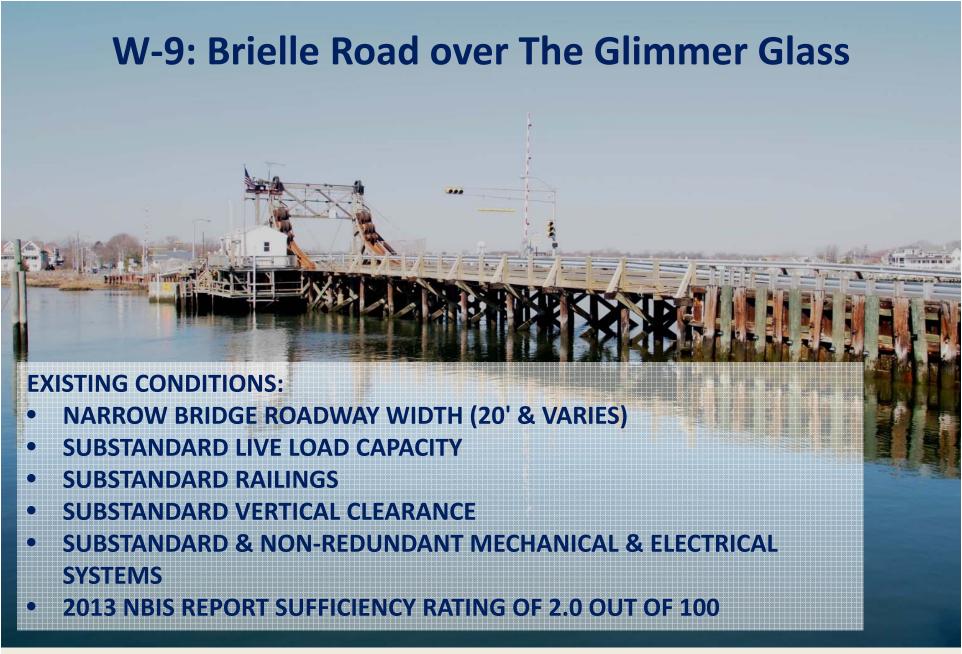




















## 2014 Failure

















## 2014-2015 Emergency Repairs















#### W-9: Brielle Road over The Glimmer Glass

















Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass







- Alternative 1 No-Build
- Alternative 2 Rehabilitation (3 sub-alternatives)
- Alternative 3 Retain Existing Bridge and Build Parallel Bridge (3 sub-alternatives)
- Alternative 4 Replace Bridge (4 sub-alternatives)





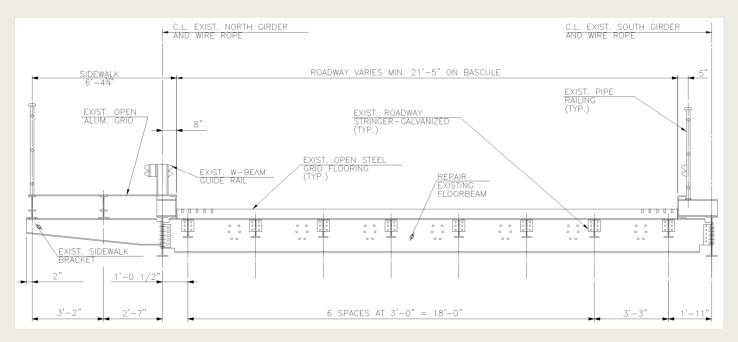




Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

#### Alternative 1: No-Build

Perform regular maintenance and repairs only











Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

#### <u>Alternative 2: Rehabilitation Sub-Alternatives:</u>

- Alternative 2A Rehabilitation in Accordance with SOI Standards (Historic Restoration)
- Alternative 2B Rehabilitation not in Accordance with SOI Standards with Replacement of the Approach Spans
- Variation: Alternative 2C Rehabilitation of Movable Span in Accordance with SOI Standards with Replacement of the Approach Spans (Hybrid of Alternatives 2A and 2B)









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

# Alternative 2A: Rehabilitation in Accordance with the Secretary of the Interior Standards

- Rehabilitate with like materials/components (timber/steel) of similar dimensions
- Increase structural capacity marginally
- Maintain existing geometry (span arrangement, roadway width, and bridge width)
- Upgrade mechanical/electrical systems
- Upgrade roadside safety features (railings, end treatments, etc.)



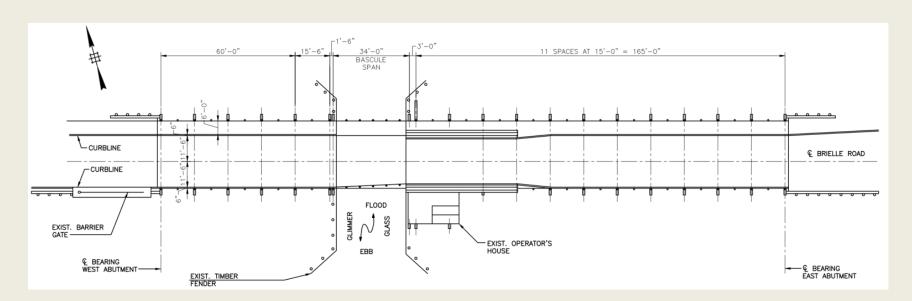






Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

Alternative 2A: Rehabilitation in Accordance with the Secretary of the Interior Standards











Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

# Alternative 2B: Rehabilitation not in Accordance with the Secretary of the Interior Standards

- Rehabilitate with like materials/components (timber/steel) of larger dimensions
- Increase structural capacity
- Add additional piers between existing ones
- Maintain existing roadway and bridge widths
- Upgrade mechanical/electrical systems
- Upgrade roadside safety features (railings, end treatments, etc.)









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

Alternative 2C: Rehabilitation of Movable Span in Accordance with SOI Standards with Replacement of the Approach Spans

- Hybrid of alternatives 2A and 2B
- Rehabilitate movable span with like materials/components (timber/steel) of larger dimensions, replace approach spans
- Maintain existing bridge width for movable span, improve geometry on approach spans
- Upgrade mechanical/electrical systems
- Upgrade roadside safety features (railings, end treatments, etc.)









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

#### <u>Alternative 3: Parallel Bridge Sub-Alternatives:</u>

- Alternative 3A Retain Existing Bridge (Close to Vehicular Traffic) and Build New Bridge on a Parallel Alignment – High Level Fixed Span Bridge (Fixed Bridge Alternative required by FHWA for Movable Bridges)
- Alternative 3B Retain Existing Bridge (Close to Vehicular Traffic) and Build New Bridge on a Parallel Alignment – Movable Bridge, Vertical Lift
- Alternative 3C Retain Existing Bridge (Convert to One-Way Traffic) and Build New Bridge on a Parallel Alignment – Movable Bridge, Vertical Lift
- Public Suggested Variation Rehabilitate Existing Bridge and Build New Parallel Bridge for Pedestrians/Bicyclists Only









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

Alternative 3A: Retain Existing Bridge (Close to Vehicular Traffic) and Build New Bridge on a Parallel Alignment – High Level Fixed Span Bridge

- Build taller, non-movable, parallel bridge to North
  - Tall enough to accommodate all marine traffic
- Provides standard lane and shoulder widths on new bridge
- Retain existing bridge for pedestrians/bicyclists only









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

Alternative 3B: Retain Existing Bridge (Close to Vehicular Traffic) and Build New Bridge on a Parallel Alignment — Movable Bridge, Vertical Lift

- Build vertical lift, parallel bridge to North
- Provide standard lane and shoulder widths on new bridge
- Retain existing bridge for pedestrians/bicyclists only









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

Alternative 3C: Retain Existing Bridge (Convert to One-Way Traffic) and Build New Bridge on a Parallel Alignment — Movable Bridge, Vertical Lift

- Build one-directional, vertical lift, parallel bridge to North
- Provide standard lane and shoulder widths on new bridge
- Rehabilitate existing bridge as per Alternative 2A and convert existing bridge to one-directional









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

#### <u>Alternative 4: Bridge Replacement Sub-Alternatives:</u>

 Alternative 4A – Build New Bridge on Current Alignment – High Level Fixed Span Bridge

(Fixed Bridge Alternative required by FHWA for Movable Bridges)

- Alternative 4B Build New Bridge on Current Alignment Movable Bridge, Vertical Lift
- Alternative 4C Build New Bridge on Current Alignment Movable Bridge,
   Trunnion Bascule
- Alternative 4D Build New Bridge on Current Alignment Movable Bridge, Rolling Counterweight









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

# <u>Alternative 4A: Build New Bridge on Current Alignment – High Level Fixed Span Bridge</u>

- Remove existing bridge
- Build new, taller, non-movable bridge in same location
  - Tall enough to accommodate all marine traffic
- Provide standard lane and shoulder widths, and ADA compliant sidewalks

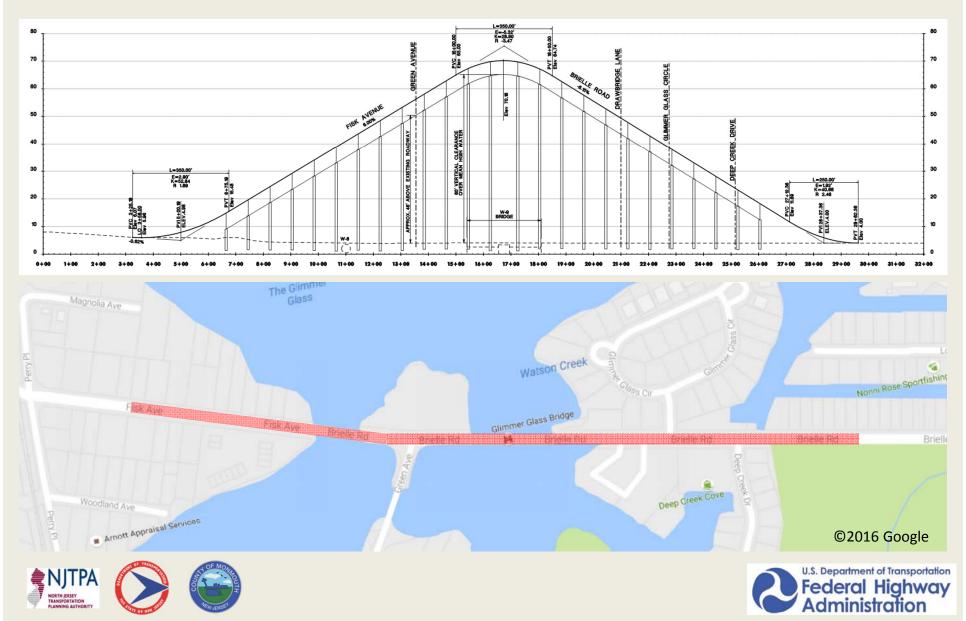








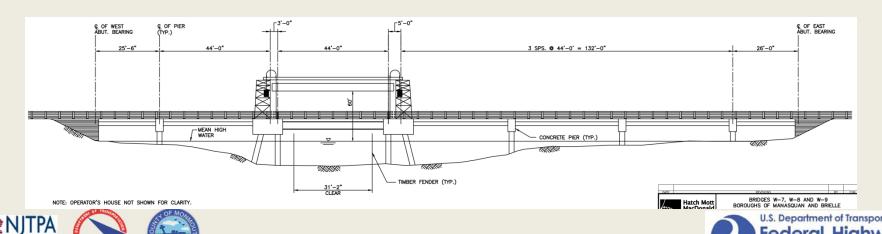
# <u>Alternative 4A: Build New Bridge on Current Alignment – High Level Fixed Span Bridge</u>



Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

## <u>Alternative 4B: Build New Bridge on Current Alignment – Movable Bridge, Vertical Lift</u>

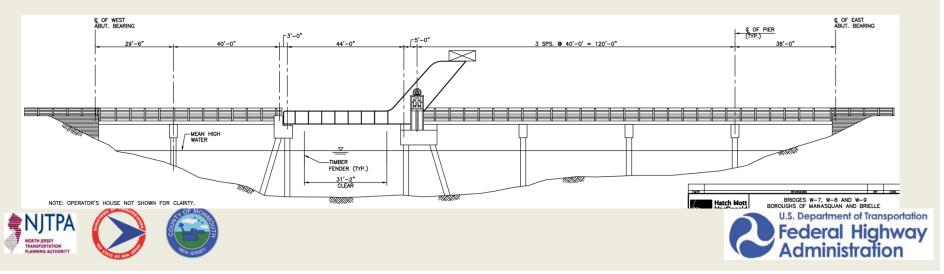
- Remove existing bridge
- Build new, vertical-lift bridge in same location
- Provide standard lane and shoulder widths, and ADA compliant sidewalks



Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

## <u>Alternative 4C: Build New Bridge on Current Alignment – Movable Bridge, Trunnion Bascule</u>

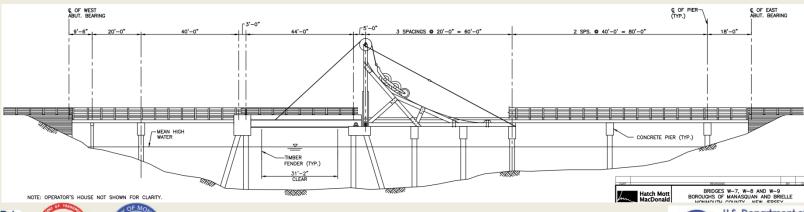
- Remove existing bridge
- Build new, trunnion bascule bridge in same location
- Provide standard lane and shoulder widths, and ADA compliant sidewalks



Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

# <u>Alternative 4D: Build New Bridge on Current Alignment – Movable Bridge, Rolling Counterweight</u>

- Remove existing bridge
- Build new, rolling counterweight bridge in same location
- Provide standard lane and shoulder widths, and ADA compliant sidewalks









Monmouth County Bridge W-9
Brielle Road over the Glimmer Glass

## <u>Public Suggested Alternative 5: Relocate Bridge and Build New Bridge on Current Alignment</u>

- ➤ Alternative 5A: Relocate Bridge W-9 to Location of Bridge W-7 (openings no longer required) and Build New Bridge as per Alternative 4
- ➤ Alternative 5B: Relocate Bridge W-9 to Fishing Pier (Block 136, Lot 26.01) and Build New Bridge as per Alternative 4

Stakeholder Suggestion (11/2016): Consider sidewalks on both sides of all 3 roadways throughout project limits









#### Assessment of Alternatives

# Alternatives will be evaluated based on the following criteria:

- Meeting Project Purpose
- Achieving Project Needs
  - Bridge Needs
  - Roadway Needs
  - System Linkage
  - Pedestrian/Bicyclist Compatibility, ADA Compliance

- Achieving Goals and Objectives
  - Sidewalk Connectivity
  - Environmental Impacts
  - Historic Resources Impacts
  - Safety Improvements
  - Long Term Maintenance
  - Traffic Impacts & Detour









#### Assessment of Alternatives

#### **Additional Considerations:**

- Construction / Life Cycle Costs
- Various Environmental Impacts
- Required permitting
- ROW Impacts and Costs
- Construction Duration and Detours









## **Next Steps**

Continued Public Outreach

#### **Round #2 – Project Alternatives**

- Local Officials Briefings Held November 10, 2016
- Stakeholder Meeting Held November 29, 2016
- Public Information Center (Manasquan & Brielle)
  - Today December 15, 2016
    - Two Meetings
    - 30 day Post Comment Period
- Consider Comments
- Prepare Alternative Analysis









## **Next Steps**

- Identify Preliminary Preferred Alternative (PPA) for Each Structure
- Continued Public Outreach

#### Round 3 – Present PPA

- Local Officials Briefings Late Spring / Early Summer 2017
- Stakeholder Meeting Late Spring / Early Summer 2017
- Public Information Center (Manasquan & Brielle) Late Spring / Early Summer 2017
  - Two Meetings
    - 30 day Post Comment Period
- Incorporate Comment Responses
- Prepare / Submit Draft AA Report









## **Next Steps**

- Cultural Resource / Section 106 Process
  - New Jersey Register Authorization
- Final Alternatives Analysis Report
- NEPA Process / Section 4(f)
- Federal Authorization For Final Design









### Opportunities for Input / Comments

- At today's PIC's (December 15, 2016)
  - 2-4 PM, Curtis House
  - 6-8 PM, Manasquan Borough Hall
    - ☐ At meeting or drop off comment in suggestion box
- After PIC during 40 Day Comment Period (extended from 30 days due to holidays) – to January 24, 2016
- Email <u>mcw789facilitator@rbagroup.com</u> or Monmouth County contact or Mail – see website

www.monmouthcountythreebridges.com









## Thank you







#### www.monmouthcountythreebridges.com







