Walk Bridge Program Overview

Public Information Meeting
Norwalk City Hall

May 11, 2016
Meeting Agenda

1. Welcome & Introductions  James Fallon, CTDOT
2. Program Overview     John Hanifin, CTDOT
3. Design Update        Christian Brown, HNTB
4. Key Elements / Next Steps James Fallon, CTDOT
5. Open Discussion
What is the Walk Bridge?
Consultation Process

Stakeholder input to help shape this project and its outcomes through your participation in key activities and milestones.
Program Objectives

• Maintain rail service throughout construction
• Maintain navigation and access to the Norwalk River
• Minimize disruption to the surrounding community
• Complete the project in a safe and efficient manner
Program Status

• Preparing Environmental Assessment document
• Preliminary design phase – structure type and constructability
• Coordination with other projects
• Construction phasing details in early 2017
• Construction on the Walk Bridge to begin in mid-2018
Program Overview

John Hanifin, CTDOT
Project Requirements

• Replace the existing deteriorated bridge with a resilient bridge structure
• Enhance the safety and reliability of rail service
• Offer operational flexibility and ease of maintenance
• Provide for increased efficiencies of rail transportation along the New Haven Line/Northeast Corridor
• Maintain and improve navigational capacity and dependability for marine traffic in the Norwalk River
• Increase bridge reliability, incorporate bridge redundancy, and provide a sustainable bridge for significant weather events, thereby accommodating current and future rail and marine traffic
Impact Identification

- Identify/Catalog Resources
- Quantify Potential Impacts
- Consultation with Stakeholders
- Identify Measures to Avoid or Minimize Impacts
- Propose Mitigation For Impacts
Resources Evaluated

- Traffic
- Air and Noise
- Water Resources
- Wetlands
- Water Quality
- Coastal Resources
- T&E Species
- Fish and Wildlife
- Historic/Archaeological Sites

- Hazardous Materials
- Energy
- Health and Safety
- Environmental Justice
- Municipal & Regional Plans
- State Plan of Conservation and Development
CP243 Interlocking Project

- To allow for two-track Metro-North Railroad (MNR) operations during reconstruction of the Walk Bridge and maintain satisfactory rail service.
- Construct a new four-track interlocking
- Includes signal and catenary improvements
- Minimal impact to the local roadway network

Anticipated Start: Early 2017
Anticipated Duration: 2 years
Danbury Branch Dockyard

- To facilitate rail operations during construction of the Walk Bridge
- Signal work and electrification to the southern end of the Danbury Branch
- New bridge over Ann Street
- Minimal impact to the local roadway network

Anticipated Start: Early 2017
Anticipated Duration: 2 years
Danbury Branch Dockyard – Ann Street Bridge
Replacement of the Walk Bridge Project
Replacement of the Walk Bridge

- Two movable spans – two tracks each
- Replacement of bridge piers
- Modifications to retaining walls
- Track relocations
- Utility relocations
- High tower and transmission line removal/relocation

Anticipated Start: Mid 2018
Anticipated Duration: 4-5 years
Replacement of the Walk Bridge—Fort Point Street

Rehabilitation of Metro-North Railroad Bridge over Fort Point Street is included in the Walk Bridge Replacement

- Single-span structure carrying four railroad tracks
- Now in deteriorated condition
Additional Projects – Currently In Design

Osborne Avenue Bridge

East Avenue Bridge
Fender Repair Project

• Ensure safety of train traffic & waterway users
• USCG mandated
• Replace deteriorated portions of the existing fender system
  • New vertical timber support piles on the east side
  • New horizontal timber walers
• Work will be completed at night (7PM – 5AM)
  • Minimize impacts to water dependent businesses
  • Barges will be moved out of channel during daytime

Anticipated Start: June 2016
Anticipated Duration: 4-5 months
Design Update
Christian Brown, HNTB
Existing Walk Bridge
Design Overview

• Conceptual Engineering Phase
  • Developed Feasible Alternatives
  • On-going Agency Coordination

• Preliminary Walk Bridge Design Phase
  • Advancing 3 Main span Alternatives
  • On-going Environmental Documentation

• Constructability and Sequencing Refinement
Meeting the Project Requirements

- Main Span configuration and track alignment
  - Overall rail and maritime operations and impacts
  - Local impacts
  - West approach geometry
  - High tower removal and relocation
  - Coordination with adjacent projects
- Construction risks
- Contractor means and methods
- Construction sequencing
- Quantifying costs, duration and impacts
Rehabilitation Option

- Development of a full bridge rehabilitation to extend service life 100 years
- Historic appearance retained
- Significant rail and navigation impacts during construction
- Long construction duration
- Cost in-line with replacement options
- No navigation clearance improvements
- No improvement in resiliency or redundancy

Estimated Construction Cost: $350-450M

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Replacement of the Walk Bridge Project
Fixed Bridge Replacement Options

- Low-level, mid-level and high level options were evaluated
- USCG and CT DEEP water-dependent use requirements
- High cost, long construction duration and economic impacts
- Significant Rail and Navigation impacts during construction

Estimated Construction Cost: $320 - $1,300M

The only fixed bridge option that meets the project requirements has the highest cost, longest construction duration and most environmental impacts
Movable Bridge Alternatives
Preliminary Design Refinement

- Main span superstructure
- Overall constructability
- Construction schedule reduction
- Rail, maritime and local road impacts
- Local impacts
- Final site context

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170’ Through Truss Rolling Bascule

- Two-170’ Rolling Bascule Trusses carrying 4 tracks
- Non-Parallel track alignment
- New retaining walls on east approaches
- West Approach Rebuild with new bridge structure and retaining walls

- Height range: 70’ (span closed) - 130’ (span open)
- Vertical clearance: 60’ (span open); 27’ (span closed)
- Horizontal clearance: 120’

**Estimated Construction Cost:** $330 – $365M

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170’ Through Truss Rolling Bascule

Primary Advantages:
• Cost
• Lowest profile structure when span is closed

Primary Disadvantages:
• Longest construction duration
• Longest duration of navigation vertical restriction during construction
• Construction coordination with adjacent projects
Channel Alignment
170’ Through Truss Vertical Lift Span

- Two-170’ Rolling Bascule Trusses carrying 4 tracks
- Parallel track alignment
- New retaining walls on east approaches
- West Approach Rebuild with new bridge structure and retaining walls

- Tower Height range: 105’ – 140’
- Vertical clearance: 60’ (span open); 27’ (span closed)
- Horizontal clearance: 120’

Estimated Construction Cost: $380 – $415M
170’ Through Truss Vertical Lift Span

Neutral advantages and disadvantages relative to other options

• West channel open throughout construction
• High construction risk with new foundation construction
• East channel blocked during construction
• Long-term maintenance efforts
Channel Alignment
240’ Through Truss Vertical Lift Span

- Two-240’ Rolling Bascule Trusses carrying 4 tracks
- Parallel track alignment
- New retaining walls on east approaches
- West Approach Rebuild with new bridge structure and retaining walls

- Tower Height range: 105’ – 140’
- Vertical clearance: 60’ (span open); 27’ (span closed)
- Horizontal clearance: 200’

Estimated Construction Cost: $425 – $460M
240’ Through Truss Vertical Lift Span

**Primary Advantages:**
- Shortest construction duration
- Reduced construction risk for new foundations
- Swing Span operable throughout construction
- East channel open throughout construction
- Shortest 2-track outage duration

**Primary Disadvantages:**
- Cost
Channel Alignment
## Comparative Analysis

**Key:**
- **Advantages**
- **Neutral**
- **Disadvantages**

<table>
<thead>
<tr>
<th>Factors for Success</th>
<th>170’ Bascule Span</th>
<th>170’ Vertical Lift Span</th>
<th>240’ Vertical Lift Span</th>
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<tr>
<td>Construction Duration</td>
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<td>Construction Risk</td>
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<td>Two-track Outage Duration</td>
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<td><strong>Overall Project Requirements</strong></td>
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Potential Construction Sequencing

- Step-by-step implementation of new bridge
- Building new bridge 2 tracks at a time
- Implementation of accelerated bridge techniques
- No construction equipment and temporary trestles illustrated
Conceptual Construction Sequence – Existing Conditions

Channel: Open
Tracks 1 and 3: Open
Tracks 2 and 4: Open
• Relocate Existing Control House
• Build new lift span foundations
• Existing High Towers removed
Conceptual Construction Sequence – Stage 2

- Build Lift Span Piers
- Remove Track 2 and 4 Superstructure
- Build West Approach Substructure and Walls
- Build East Abutment and Retaining Walls

Channel: Open
Tracks 1 and 3: Open
Tracks 2 and 4: Closed
• Place New Track 2 and 4 Superstructure
• Build West Approach
• Build East Approach
• Erect South Portion of Lift Span Tower

Conceptual Construction Sequence – Stage 3

Channel: Open
Tracks 1 and 3: Open
Tracks 2 and 4: Closed
Conceptual Construction Sequence – Stage 3

Channel: Open
Tracks 1 and 3: Open
Tracks 2 and 4: Closed

- Place New Track 2 and 4 Superstructure
- Build West Approach
- Build East Approach
- Erect South Portion of Lift Span Tower
Conceptual Construction Sequence – Stage 4

Rail and Navigation

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<th>Status</th>
<th>Channel</th>
<th>Tracks 1 and 3</th>
<th>Tracks 2 and 4</th>
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</table>

- Close Channel
- Close All Tracks
- Remove Existing Swing Span
- Install New Vertical Lift Span for Tracks 2 and 4
- Open Tracks 2 and 4
Conceptual Construction Sequence – Stage 5

- Lift Span Operational
- Remove Existing Fender System and Piers
- Open Channel

Channel: Open
Tracks 1 and 3: Closed
Tracks 2 and 4: Open
• Remove Track 1 and 3 Superstructure
• Build West Approach Substructure and Walls
• Build East Abutment

Conceptual Construction Sequence – Stage 6

Channel: Open
Tracks 1 and 3: Closed
Tracks 2 and 4: Open
Conceptual Construction Sequence – Stage 7

Channel: Open
Tracks 1 and 3: Closed
Tracks 2 and 4: Open

- Place New Track 1 and 3 Superstructure
- Build West Approach
- Prepare East Approach
- Erect North Lift Span Tower
### Conceptual Construction Sequence – Stage 8

- Close Channel
- Install New Vertical Lift Span for Tracks 1 and 3
- Open Tracks 1 and 3

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<th>Rail and Navigation</th>
<th>Status</th>
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<tr>
<td>Tracks 1 and 3</td>
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<tr>
<td>Tracks 2 and 4</td>
<td>Open</td>
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</tbody>
</table>
Conceptual Construction Sequence – Stage 9

Channel: Open
Tracks 1 and 3: Open
Tracks 2 and 4: Open

- Lift Span Operational
- Open Channel to Navigation
Design Development

Construction Staging and Refinement (CM/GC)
- Main Span Configuration
- Track Alignment
- West Approach Rebuild
- High Towers
- Construction Staging

Detail Design (Public Outreach)
- Main Span Configuration
- Piers/Abutments/Walls configuration
- Finishes and colors
- High Towers
- Historic and Public Input
West Approach Rebuild

New bridge girders
Concepts for Bridge Approach Spans
Concepts for New Bridge Piers – N. Water St.
Concepts for New Control House
Abutments and Walls
Span Color

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Key Elements & Next Steps

James Fallon, CTDOT
High Towers

- Evaluation of feasible alternatives
  - Aerial
  - Underground
  - Aerial/underground combination
- Consultation with CT Siting Council
Bicycle/Pedestrian Trails

• Conceptual Design of Trail Connections
  • Norwalk River Valley Trail (NRVT)
  • Norwalk Harbor Loop Trail
• Public Access Mitigation
• Historic interpretation
• Stakeholder coordination
Related Projects Coordination

• Hardening of Movable Stroffolino Bridge (Spring – Fall 2017)
• South Norwalk (Madison) Traction Station (Spring 2016 – Spring 2019)
• Rehab of I-95 Yankee Doodle Bridge (Spring 2017 – Fall 2019)
• I-95 Median Reconstruction (Spring 2018 – Fall 2019)
• I-95, Exit 16 (TBD)
• GGP Mall (Summer 2016 – Fall 2018)
Upcoming Milestones

- Start of Fender Repair Project (June 2016)
- Local Presence (June 2016)
  - Project office on N. Water Street
  - Kiosks/Exhibits at key locations around Norwalk
- Environmental Assessment Document Published / Public Comment Period (late summer)
- Public Information Meeting on the EA (early fall)
Stay Involved

• Regular Updates on: www.walkbridgect.com  
  Twitter @walkbridgect  
  Facebook.com/WalkBridgeCT

• Email: info@walkbridgect.com

• Regular Public Meetings

• Email Announcements & Press Releases  
  (Sign-up on the website!)

• Construction News Notifications
Open Discussion