REPLACEMENT OF DAVIS AVENUE BRIDGE OVER INDIAN HARBOR
BRIDGE NO. 05012

November 19, 2019
MEETING AGENDA

- Project Team
- Project Overview
- Existing Conditions
- Alternatives Considered
- Traffic Impacts
- Proposed Alternative
- Railing Options
- Construction Cost / Schedule
- Contact Information
- Questions
Town of Greenwich
Owner

Alfred Benesch & Company
Prime Consultant, Structural, Highway, Hydraulic, Drainage Design

GZA GeoEnvironmental Inc.
Environmental Permitting

Didona Associates Landscape Architects, LLC
Landscaping Services, Planning
PROJECT TIMELINE

INVESTIGATION PHASE
February 2018 to May 2018

ALTERNATIVES ASSESSMENT
June 2018 to January 2019

PRELIMINARY DESIGN
January 2019 to April 2019

FINAL DESIGN
May 2019 to December 2019

CONSTRUCTION
Spring to Fall 2020

CURRENT PROJECT STATUS
PROJECT GOALS

- Correct Existing Deficiencies of the Bridge (Structural and Functional)
- Improve Multimodal Traffic Flow at Bridge Crossing (Vehicles / Bicycles / Pedestrians)
- Maintain / Enhance Safety at Bridge Crossing
- Meet Local, State, and Federal Requirements
Existing Bridge Data

- **Construction Year:** 1934
- **Structure Type:** Concrete Slab Supported on Stone Masonry Abutments and Pier
- **Structure Length:** 37’-3” (17’-1” Span Lengths)
- **Bridge Width:** 43’+ (Outside to Outside)
- **Lane Configuration:** Two Lanes, Two 4’ Sidewalks
- **Existing Utilities:** Water, Gas (Supported on Bridge) – Electric / Cable (Overhead adjacent to Bridge)
- **Average Daily Traffic:** 4,000 – 7,000 VPD
- **Posted Speed Limit:** 25 MPH
EXISTING BRIDGE - HYDRAULIC CONDITIONS

BRIDGE LOCATION
I-95 DIVERSION ROUTE

I-95 N/B EXITS 3 - 4

Greenwich

PRIMARY ROUTE:
Take Exit 3, right onto Arch St, Straight onto Museum Dr, Straight onto Davis Ave, Left onto Bruce Park Dr, Left onto Indian Field Rd., Right onto Exit 4 on - ramp to I-95 N/B.

SPECIAL REQUIREMENTS - TRAFFIC CONTROL LOCATIONS

LOCAL P.D. MONITOR LOCATIONS
1.) Bruce Park Dr., @ Indian Field Rd.

LEGEND

CLOSURE LOCATION
TRUCK ROUTING
CAR ROUTING
ALL VEHICLE ROUTING SIGNAL
POLICE MONITOR - SIGNAL
POLICE MONITOR - NO SIGNAL
DIVERSION ROUTE SIGN LOCATIONS
TRUCK ONLY DIVERSION ROUTE SIGN LOCATIONS

DIVERSION SIGNS REQUIRED

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EMERGENCY CONTACTS

STATE POLICE
TROOP - G (203) 466-2600
D.E.P. (860) 565-3338

GREENWICH CENTRAL DISPATCH
POLICE / FIRE (203) 622-6000
POLICE FAX # (203) 623-8666

CONNDOT SIGNAL SYSTEM / BRIDGEPORT OPERATIONS DTR
Contact (860) 685-0444
24 hrs / 7 days

95RPN-3
EXISTING BRIDGE PHOTOS

BRIDGE FROM WEST APPROACH (ENTERING BRUCE PARK)
EXISTING BRIDGE PHOTOS

BRIDGE FROM EAST APPROACH (EXITING BRUCE PARK)
EXISTING BRIDGE PHOTOS

SOUTH ELEVATION
(VIEW FROM INDIAN HARBOR)
EXISTING BRIDGE PHOTOS

BRIDGE UNDERSIDE

WATER MAIN
EXISTING BRIDGE CONDITIONS

Structural Condition:
• Deck / Superstructure Rated “5” (Fair Condition)
• Substructure Rated “4” (Poor Condition) – Updated During May 2019 CTDOT Bridge Inspection
• Substandard Structural Capacity (Posted for Vehicle Weight Restrictions)

Substandard Bridge Width:
• Deck Geometry Rated “2” Due to Substandard Bridge Width
• Considered “Functionally Obsolete”

Causeway Conditions:
• Evidence of Seepage Through Causeway Observed
• Non-Functioning Drawdown Structure
EXISTING BRIDGE CONDITIONS

STRUCTURAL CONDITION

- GAS MAIN
- EXPOSED REBAR
- VOIDS IN PIER
- EFFLORESCENCE
- WATER MAIN
EXISTING BRIDGE CONDITIONS

LIMITED BRIDGE WIDTH
EXISTING BRIDGE CONDITIONS

CAUSEWAY
ALTERNATIVES CONSIDERED

ALTERNATIVE A: Precast Concrete Arch – Maintain Causeway Width

ALTERNATIVE B: Prestressed Deck Unit – Maintain Causeway Width*

ALTERNATIVE C: Precast NEXT Beams – Widen Causeway

*Selected Alternative
ALTERNATIVE A: Precast Concrete Arch – Maintain Causeway Width
ALTERNATIVE A

Advantages
• Maintains upstream arch elevation
• Accommodates pressure flow better than other alternatives.

Disadvantages
• No hydraulic improvement compared to the existing opening
• Insufficient depth for road base without significant raise in roadway profile.
• Difficult accommodation of utilities (gas main)
• Heavier superstructure, resulting in larger crane size
• More excavation required than other alternatives

Bridge Cost: $4.1 M
ALTERNATIVE B: Prestressed Deck Unit – Maintain Causeway Width

*Selected Alternative
ALTERNATIVE B

*Selected Alternative

Advantages
• Improved hydraulic opening
• Minimizes structure depth—maintains existing roadway grade
• Shorter span bridge required
• Lighter weight superstructure
• Less excavation required at approaches

Disadvantages
• Cast in place shear slab requires time to cure before placing the waterproofing membrane and overlay
• Accommodation of utilities under bridge (gas) complicates design
• Complicates incorporation of arch facade

Bridge Cost: $4.1 M
ALTERNATIVE C: Precast NEXT Beams – Widen Causeway

ELEVATION

CROSS SECTION
ALTERNATIVE C

Advantages
• Shorter span bridge required – Similar to Alternative B
• Facilitates accommodation of utilities
• Superstructure type would accommodate staged construction

Disadvantages
• Substantial in-water work and total reconstruction of causeway walls required
• No hydraulic improvement compared with existing opening
• Complicates incorporation of arch facade
• Heavier superstructure

Bridge Cost: $4.1 M
PROPOSED PLAN

LEGEND:

- PROPOSED STRUCTURE
- EXISTING STRUCTURE
- PROPOSED BITUMINOUS CONCRETE DRIVeway
- EXISTING PAVEMENT
- PROPOSED GRASS
- FULL DEPTH RECONSTRUCTION
- MILL AND OVERLAY
- WATERCOURSE
- PROPERTY LINES
RAILING OPTIONS

*Preferred Option

Bailiwick Road
RAILING OPTIONS

Comly Avenue
Anticipated Project Schedule*:  
• Design / Permit Completion: Winter 2019/2020  
• Start of Construction: Spring 2020  
• Road Closure / Detour: Summer 2020  
  *(Estimated 8 to 12 week closure)*  
• End of Construction: Fall / Winter 2020  

*Eversource Utility / Pedestrian Bridge Construction: Winter/Spring 2019-2020

Estimated Construction Cost:  
• $4.1 M  
• Planned Construction Funding – 100% Local Transportation Capital Improvement Program (LOTCIP) Construction Funding (Grant)
CONTACT INFORMATION

Town of Greenwich
Jason Kaufman, PE – Senior Civil Engineer
Phone: (203)-622-3839
Email: Jason.Kaufman@greenwichct.org

Alfred Benesch & Company
Steven Drechsler, PE – Project Manager
Phone: (860)-633-8341
Email: sdrechsler@benesch.com