Replacement of Bruce Park Driveway Bridge

Public Information Meeting

Town of Greenwich

March 23, 2020
Meeting Agenda

- Project Team
- Project Overview
- Existing Conditions
- Alternatives Considered
- Proposed Alternative
- Construction Cost / Schedule
- Contact Information
- Questions
Project Team

Town of Greenwich
Owner

Cardinal Engineering Associates, Inc.
Prime Consultant - Structural, Highway, Hydraulic, Drainage Design and Permitting

Welti Geotechnical, P.C.
Geotechnical Engineering

Soil Science and Environmental Services, Inc.
Wetland Scientist and Environmental Biology
Project Timeline

Investigation Phase
- September 2019

Preliminary Engineering Alternative Assessment
- October 2019 to January 2020

Preliminary Design
- January 2020 to March 2020

Final Design
- March 2020 to August 2020

Construction
- September 2020 to May 2021
Project Goals

• Correct Existing Deficiencies of the Bridge (Structural)
• Maintain & Enhance Safety at the Bridge Crossing
• Meet Local Requirements
• Meet Federal Accessibility Standards for Pedestrians
• Adhere to Environmental Permits
• MAINTAIN AESTHETICS OF EXISTING BRIDGE
Purpose and Need

Existing Bridge

• Structurally Deficient – Significant Section Loss on all Steel Girders

• 0 Ton Load Rating – Temporary Measures Installed to Relieve Loading on Structure

• Substructure Deficiencies – Voids; Some Penetrating Upwards of 2.5-Feet

• Stone Masonry – Exhibits Wide-spread Loose Stones and Missing Mortar

• Approach Pavement – Uneven and Cracked Throughout
Existing Conditions

South Elevation

North Elevation

Driveway Looking East

Existing Bridge

- Approx. 15-foot structure, built circa 1930
- Structurally deficient
- Steel beam superstructure with concrete deck on masonry abutments
- Temporary steel plates to prevent load bearing
- Currently closed seasonally between November and April each year
- No known utilities cross the bridge
** 0 Ton Load Rating for two axle CT-H20 Vehicle

** Masonry Abutments / False Arch Facade

** Roadway Looking East – Temporary Steel Road Plates

** Bridge Assessment

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<th>Description</th>
<th>Condition Rating</th>
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<tr>
<td>58</td>
<td>Deck</td>
<td>6 (Satisfactory)</td>
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<tr>
<td>59</td>
<td>Superstructure</td>
<td>3 (Serious)</td>
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<tr>
<td>60</td>
<td>Substructure</td>
<td>5 (Fair)</td>
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<td>61</td>
<td>Channel Protection</td>
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<td>62</td>
<td>Approaches</td>
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<th>Item</th>
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<tr>
<td>67</td>
<td>Structural Evaluation</td>
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<td>68</td>
<td>Deck Geometry</td>
<td>7 (Better than Minimum Criteria)</td>
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<td>71</td>
<td>Waterway Adequacy</td>
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<tr>
<td>72</td>
<td>Roadway Alignment</td>
<td>8 (Desirable)</td>
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<tr>
<td>113</td>
<td>Scour Critical</td>
<td>8 (Desirable)</td>
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Beams with 100% Section Loss on Bottom Flanges / Cracking in Abutment Walls

Approach Rail with Collision Damage

False Arch Façade
Proposed Structure

• Precast Concrete Arch Culvert with Cast-in-Place Concrete Parapets / Wing Wall Stems

• All Exposed Surfaces Will be Faced with Stone Veneer to Preserve the Existing Appearance

• Existing Streambed Will Remain in Natural Condition

• Roadway Profile Raised Slightly to Provide Positive Surface Drainage Away from Structure

• Improves Fish Passage

• Removal of Existing Concrete Weir

• Minimal Temporary Environmental Impacts
Alternatives Considered

14’-0” W x 7’-0” H Precast Concrete Box

- More Extensive Streambed Excavation Required to Bury Bottom Slab
- No Hydraulic Benefit with Keeping False Arch Façade
- Difficult to Attach Stone Veneer and Recreate False Arch Façade
- Additional & Permanent Environmental Impacts

14’-0” W x 6’-9” H Precast Concrete Arch

- Open Bottom is Environmentally Favorable
- Deeper Excavation Require for Footings
- Easier Long Term Maintenance
- Lower Cost
Proposed Plan View

BEGIN PROJECT NO. 14-30
STA 2+23.5
SAW CUT & MATCH EXISTING
BEGIN FULL DEPTH CONSTRUCTION

END PROJECT NO. 14-30
STA 4+90
SAW CUT & MATCH EXISTING
END FULL DEPTH CONSTRUCTION
Construction Schedule & Cost

Anticipated Project Schedule

• Design / Permit Completion – August 2020
• Start of Construction – September 2020
• End of Construction – May 2021

Construction Funds Budget Request

• $2 Million
Town of Greenwich

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THANK YOU
QUESTIONS