PUBLIC INFORMATION MEETING

Bridge No. 04660
ConnDOT Project No. 49-109

REPLACEMENT OF WALNUT STREET BRIDGE
OVER FALLS RIVER
ESSEX, CONNECTICUT

March 22, 2016
The Town of Essex has retained the firm of WMC Consulting Engineers, Inc. to provide the design of the bridge, associated roadway and site improvements.

Contacts:

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Project Manager

Jay Costello, P.E.
Vice President
Replacement of the bridge is required based on its current condition rating. According to the recent ConnDOT Bridge Inspection Report, the existing culverts and retaining walls have an overall rating of 2 and are in critical condition. The existing bridge is rated a 2 and is in critical condition overall, which means the existing bridge is structurally deficient and its condition warrants replacement. Structure is currently on special inspection schedule by ConnDOT due to critical condition.
PROJECT GOALS

- Replacement of the Walnut Street bridge
- Improvements to the existing drainage system
- Minimize disturbance to traveling public
- Complete construction in a timely manner
- Effectively use available funding for the project
LOOKING SOUTH OVER BRIDGE
EXISTING BRIDGE ELEVATIONS

Upstream View

Downstream View
EXISTING BRIDGE ELEVATIONS

Upstream View

Downstream View
PROPOSED CONSTRUCTION

Roadway Plan
PROPOSED CONSTRUCTION

Typical Bridge Section

Bridge Elevation
PROPOSED CONSTRUCTION

- 50' long single span precast concrete ‘NEXT’ beams with 5'-6" sidewalk
- Concrete bridge abutments and wingwalls on piles
- Concrete approach slabs & walls at both ends of the bridge
- Bridge rail in between the approach walls
- New guide rail and guide rail anchors
- Full depth reconstruction of pavement with project limits
- Improvements to existing drainage system
- Minimizing of easements and land acquisitions
- Geometry will essentially remain the same
- Improve safety of approach roadways
- Road to be closed to traffic with a detour during construction
ENVIRONMENTAL CONSIDERATIONS

- No known contaminated soils within project limits
- No known hazardous materials within project limits
- Best management practices will be used to handle sedimentation control
- Inland wetlands/regulated area impacts will be kept to a minimum
- Disturbed areas during construction will be restored upon completion
- Permits required:
  - Category I  ACOE
  - Town IWWC
  - State Flood Management Certification
PUBLIC UTILITIES

• Overhead utility wires relocated as required
• Coordination with utility companies will be conducted during the design process
• Notification of the proposed improvements after approval of preliminary design
- Impacts to private properties will be kept to a minimum
- Temporary construction easements required for the bridge and roadway improvements
- Permanent easements required for the maintenance of the bridge and retaining walls
PROJECT COST

• The cost of construction for the year 2017 is approximately $2,200,000

• Funding will be 80% Federal funds and 20% Town funds
  • Federal: $1,760,000
  • Town: $440,000

PROJECT SCHEDULE

• Start of construction: 2017
• Duration of construction: Approx. 8 months
**BRIDGE DATA SHEET**

**PARKER BRIDGE ROAD BRIDGE over THE HOP RIVER**
**COVENANT, CONNECTICUT**

**ORIGINAL STRUCTURE:** The structure was reportedly built in 1900, and replaced in 1970. The bridge is a single span composed of simply supported steel stringers. The stringers support an 8 inch concrete deck that has no transverse concrete topping. The bridge abutments were cast concrete gravity sections, without seepage. The bridge has a parapet. The existing bridge had a total length of approximately 77 feet and a length of 75 feet from center to center of bearings. The bridge width is 22 feet between railing posts, and 22 feet overall to the back of the post.

**NEW STRUCTURE:** A single span bridge consisting of a 37 inch deep precast concrete box beam structure founded on integral type abutments. Also included was 880 feet of associated minor roadway work to match the new bridge into the existing roadway.

**LENGTH:** 78'
**WIDTH:** 25.5'
**APPROACHES:** 210'
**SUPERSTRUCTURE:** Prestressed Box beams
**SUBSTRUCTURE:** Integral Type abutments
**COST:** $1,002,699.14

**PERMITS / REVIEWS:** CTDEP Category II Permit, IWWA Application, Application for Flood Management Certification

**SPECIAL CONCERNS:** Water pollution control, fish passage

**PROJECT SPECIFICATIONS:**

**EXCAVATION:**
- Earth: 1,305 cu yd
- Rock: N/A

**SUBSTRUCTURE:**
- Concrete: 55 cu yd
- Reinforcing: 17,992 lbs.

**SUPERSTRUCTURE:**
- Concrete: 94 cu yd
- Reinforcing: 1,437 lbs.

**ROADWAY:**
- 295' - Metal beam rail (Type R-0.350)

**FEATURES:**

**CONSTRUCTION COMPLETION:** Fall 2008

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**BRIDGE DATA SHEET**

**VALLEY ROAD over MIANUS RIVER**
**GREENWICH, CONNECTICUT**

**ORIGINAL STRUCTURE:** The original bridge was built circa 1900's, is founded on bedrock at a depth of about 10 feet. It was a two span structure consisting of a reinforced concrete deck on steel beams, all supported on abutments and a wide pier constructed of a mix of field stone masonry and reinforced concrete.

**NEW STRUCTURE:** Prestressed concrete deck units, stone lined wingwalls and timber guardrail.

**LENGTH:** 70'
**WIDTH:** 30'
**APPROACHES:** 190'
**SUPERSTRUCTURE:** Prestressed concrete deck units
**SUBSTRUCTURE:** Cast-in-place abutments & Wingwalls
**COST:** $1,683,300.00

**PERMITS / REVIEWS:** Town of Greenwich, NCCAT Wetland and Watercourse permits, DEP Flood Management Certification, DEP Water Quality Certification, DEP Storm Water Discharge and Construction Activities permit, Category III Army Corps of Engineers

**SPECIAL CONCERNS:** Environmental & Water Resource Issues, Traffic Realignment

**PROJECT SPECIFICATIONS:**

**EXCAVATION:**
- Earth: 2,040 cu yd
- Rock: 24 cu yd

**SUBSTRUCTURE:**
- Concrete: 439 cu yd
- Reinforcing: 27,955 lbs.

**SUPERSTRUCTURE:**
- Concrete: 35,6 cu yd
- Reinforcing: 4,417 lbs.

**ROADWAY:**
- 139' - Metal beam rail

**FEATURES:**

**CONSTRUCTION COMPLETION:** Fall 2004
WMC PREVIOUS BRIDGE PROJECTS

**BLACK BRIDGE ROAD BRIDGE over BAKERVILLE BROOK**  
**NEW HARTFORD, CONNECTICUT**

**ORIGINAL STRUCTURE:**

**NEW STRUCTURE:** Two-span continuous joint pre-tensioned concrete deck units, brushed aluminum bridge rail, reinforced concrete abutments, stone facade on abutments & wingwalls, stone approach walls.

**LENGTH:** 37’
**WIDTH:** 30’ - 6”

**APPROACHES:**

**SUPERSTRUCTURE:** Prestressed pre-tensioned concrete deck units

**SUBSTRUCTURE:**

**COST:** $91,975.179

**PERMITS / REVIEWS:**

**SPECIAL CONCERNS:**

**PROJECT SPECIFICATIONS:**

**EXCAVATION:**

**ROCK:**

**CONCRETE:**

**REINFORCING:**

**ROADWAY:**

**FEATURES:** This Bridge replaced an historic steel truss bridge listed on the National Register of Historic Places.

**CONSTRUCTION COMPLETION:** Spring 2000

**EMMONS LANE over WHITING RIVER**  
**NORTH CANAAN, CONNECTICUT**

**ORIGINAL STRUCTURE:**  The Bridge consists of a simply supported, rolled steel beam superstructure with masonry abutments, founded on undetermined footing types. The width of the structure measured perpendicular to the roadway alignment averages 30.7 feet. The hydraulic opening of the bridge was approximately 25 feet between abutments faces.

**NEW STRUCTURE:**  A single span bridge with an 88-inch deep concrete deck unit superstructure with a hydraulic clear span of 32 feet measured between the abutment faces. The abutments are cast in place concrete with wing walls angled at approximately 45°. The overall width of the crossing measured perpendicular to the roadway is 25 feet.

**LENGTH:** 38’
**WIDTH:** 25’

**APPROACHES:** 50’

**SUPERSTRUCTURE:** Precast Pre-stressed Concrete Box Beams

**SUBSTRUCTURE:** Cast-in-place concrete abutments, one side on bedding, another side on fill

**COST:** $670,679.49

**PERMITS / REVIEWS:**  ADEQ Category / Permit, DEP Flood Management Certification, DEP Stream channel Encroachment permit, Inland Wetland & Watercourses Permit

**SPECIAL CONCERNS:** Property Owners / Assessments, Utilities,

**PROJECT SPECIFICATIONS:**

**EXCAVATION:**

**ROCK:**

**CONCRETE:**

**REINFORCING:**

**ROADWAY:**

**FEATURES:** Concrete form lined wing walls and approach walls, Three rail metal bridge rail, Steel Marker Plate

**CONSTRUCTION COMPLETION:** Spring 2009

WMC CONSULTING ENGINEERS
OLD TURNPIKE NORTH ROAD over KONKAPOT RIVER
NORTH CANAAN, CONNECTICUT

ORIGINAL STRUCTURE: Consisted of a steel girder superstructure with masonry abutments. The length of the bridge measured between the abutment faces is 40 feet. The bridge lacked bridge piers. The roadway approach embankments, particularly to the northeast, are long and obstruct a considerable portion of the floodplains.

NEW STRUCTURE: A single span bridge consisting of a 35 inch deep precast concrete box beam superstructure founded on integral type abutments. The length of the bridge is 66.2 feet measured perpendicular to the concrete portions of the abutment faces. The overall width of the crossing, measured perpendicular to the roadway, will be 29 feet. The bridge was flown through type rating system to minimize impacts to overtopping flows.

LENGTH: 71’
LENGTH: 29’
APPROACHES: 170’
SUPERSTRUCTURE: Precast concrete box beams
SUBSTRUCTURE: Integral type abutments
COST: $1,013,493.71

PERMITS / REVIEWS: ACOE Category I Permit, DEP Flood Management Certification, Stream Channel Encroachment permit
SPECIAL CONCERNS: Overtopping of the roadway with heavy rain fall

PROJECT SPECIFICATIONS:

| EXCAVATION | EARTH: 420 CY |
| SUBSTRUCTURE | ROCK: 4 CY |
| SUPERSTRUCTURE | CONCRETE: 117 CY |
| | REINFORCING: 15,182 lbs |
| ROADWAY | CONCRETE: 47 CY |
| | REINFORCING: 6,470 lbs |
| | 30’ Metal Beam Rail (Type B-3 350) |

CONSTRUCTION COMPLETION: FALL 2009

BARRY ROAD over EIGHT MILE BROOK
OXFORD, CONNECTICUT

ORIGINAL STRUCTURE: The structure was built in 1996 and consists of a prestressed concrete deck unit superstructure on reinforced concrete abutments and wingwalls with a pier in the center. The two spans are each 30 feet bearing to bearing and form a continuous bridge on an overall length of 62 feet on a 1:3.88 view to the flow of the brook below. The roadway width of the bridge is 22 feet; overall width of the bridge is 26 feet.

NEW STRUCTURE: Is located upstream of the existing bridge (approximately 55 feet) in order to improve roadway alignment. It consists of a single 75 foot span crossing.

LENGTH: 88’
LENGTH: 30’
APPROACHES: 150’
SUPERSTRUCTURE: Prestressed concrete deck units
SUBSTRUCTURE: Reinforced concrete abutments
COST: $852,428.34

PERMITS / REVIEWS: Inland wetlands watercourse permit, ACOE category II permit
SPECIAL CONCERNS: Overhead Utilities

PROJECT SPECIFICATIONS:

| EXCAVATION | EARTH: 304 C.Y. |
| SUBSTRUCTURE | ROCK: 33 C.Y. |
| | CONCRETE: 9,823 lbs. |
| | REINFORCING: 318,823 lbs. |
| ROADWAY | CONCRETE: 8 C.Y. |
| | REINFORCING: 1,223 lbs. |

FEATURES:

CONSTRUCTION COMPLETION: FALL 2003
## CONTACT INFORMATION

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