

Federal

CONNECTICUT LOCAL BRIDGE PROGRAM

Fiscal Year 2006

PRELIMINARY APPLICATION

SHORE ROAD over

HORSENECK BROOK

Greenwich, CT

ConnDOT Bridge No. 05011

Prepared for the
Connecticut Department of Transportation
Federal Local Bridge Program
Newington, Connecticut



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2. Description / Existing Condition

The bridge carrying Shore Road over the Horseneck Brook consists of stone and concrete arch with a bituminous concrete wearing surface. The original structure was built in 1905. There have been a number of minor maintenance repairs over the years; however, there is no record of rehabilitation. The existing bridge travel way width is approximately 24.4 feet and is referenced as ConnDOT Bridge No. 05011. The structure has a maximum span of 30 feet and is eligible for State and Federal funding under the Local Bridge Program for the fiscal year 2006.

Deck (Rating=6)

According to the ConnDOT bridge inspection report, dated March 26, 2003 the road surface is in satisfactory condition (rating=6). The bituminous overlay shows longitudinal and transverse cracks. There is a 53" by 53" area of pavement settlement in the northbound lane. Although the stone masonry parapets have been repointed in the past, they show random hairline cracks in the mortar joints.

Superstructure (Rating=4)

According to the ConnDOT bridge inspection report, dated March 26, 2003, the superstructure is in poor condition (rating=4). Half of the concrete face of the intrados is either missing (30%) or heavily deteriorated with hollow areas, scaling, spalling, and cracking (20%). The exposed masonry shows areas of deteriorating joints, dampness and isolated loose stones. Deterioration is most severe within the tidal influence of the brook. There are areas of severe scale below one of the utility pipes that pass through the arch. There is active leakage through the underside indicating piping associated with the depressed area of roadway.

The arch rings and spandrel walls exhibit deterioration and voids in the mortar joints particularly below the high tide line. Two of the arch ring stones are cracked.

There are two concrete pipes (24 inch and 30 inch) passing through the arch and an 8 inch water main suspended from the upstream spandrel wall.

Substructure (Rating=6)

According to the ConnDOT bridge inspection report, dated March 26, 2003, the substructure is in satisfactory condition (rating=6), however it is clearly in need of rehabilitation and repair. The abutments show mortar voids and deteriorating mortar joints. Abutment footings are not visible.

Channel and Channel Protection (Rating=7)

According to the ConnDOT bridge inspection report, dated March 26, 2003, the channel is in good condition (rating=7). No scour was found during the inspection. There is some upstream embankment erosion. The stream has retaining walls on both sides downstream.

Approach Condition (Rating=7)

According to the ConnDOT bridge inspection report, March 26, 2003, the approach is in good condition (rating=7). The pavement shows transverse, random, longitudinal and map cracks open up to 1 inch.

3. Proposed Condition *Replace Entire Structure*

The existing structure condition was rated as poor in the 2003 ConnDOT report and has been rated poor on past inspection reports. Based on the structural condition, the bridge warrants a complete replacement. The bridge is eligible for listing in the National Historic Register; therefore, efforts should be made to retain distinctive features of the structure and stone masonry wherever possible. The proposed replacement would include the following:

- 1) Remove the existing structure in its entirety.
- 2) Install new reinforced concrete abutments and wingwalls.
- 3) Install new cast in place concrete deck on rolled steel beams.
- 4) Install new stone masonry parapets, concrete sidewalks and approaches with a 24 foot travel way.

Estimated construction cost for the work is \$1,318,605.00. A detailed estimate is provided on the following pages.



CONNECTICUT DEPARTMENT OF TRANSPORTATION

Stephen E. Korta, II, Commissioner



PRELIMINARY APPLICATION FOR THE LOCAL BRIDGE PROGRAM

Preliminary application is hereby made by the Town/City/Borough of **Greenwich** for possible inclusion in the Local Bridge Program for **Fiscal Year 2006** for the following structure:
Shore Road over Horseneck Brook.

Bridge Location: **Over Horseneck Brook**

Bridge Number: **05011**

Length of Span: **30 feet**

Sufficiency Rating: **46.95**

Priority Rating: **45.99**

Evaluation & Rating Performed by:

State Forces Others

If Others, Name of Professional Engineer: _____

Connecticut Professional Engineers License Number: _____

Engineering Firm: _____

Engineer's Address: _____

Description of Existing Condition of Structure: *(attach description)*

Description of Project Scope: _____ *(note repair code; attach narrative/preliminary plans & specifications).*

Name of Municipal Official to Contact *(name & title)*: **David Thompson, P.E., L.S., Town Engineer**

Mailing Address: **Greenwich Department of Public Works,
101 Field Point Road, Greenwich, CT 06836-2540**

Telephone: **(203) 622-7769**

FAX: **(203) 622-7747**

E-mail: DThompson@greenwichct.org

Preliminary Cost Figures:

Preliminary Engineering Fees (Include Breakdown of Fees) <i>(Not to Exceed 15% of Construction Costs)</i>	\$ 197,790
Rights-of-Way Cost (If Applicable)	\$ N/A
Municipally Owned Utility Relocation Cost	\$ 307,500
Estimated Construction Costs (Include Detailed Estimate)	\$ 1,318,605
Construction Engineering (Inspection, Materials Testing) <i>(Not to Exceed 15% of Construction Cost)</i>	\$ 197,790
Contingencies <i>(10% of Construction Costs Only)</i>	\$ 131,860
Total Estimated Project Cost	\$ 2,153,545

Financial Aid Data:

Federal Reimbursement: *(Limited to qualifying bridges – See Appendix 1)*

Total Estimated Project Cost multiplied by 80%:

Project Reimbursement Request \$ 1,722,836

State Local Bridge Project Grant: *(Cannot be combined with Federal reimbursement)*

Allowable Grant Percentage _____% of Total Cost.

Project Grant Request \$ _____

State Local Bridge Project Loan: *(Maximum 50% of total project cost)*

Project Loan Request \$ _____

Schedule: (Anticipated Dates)

Public Hearing Conducted:	Spring 2007
Design Completion:	Summer 2007
Property Acquisition Completion:	N/A
Utilities Coordination Completion:	Summer 2007
Construction Advertising:	Winter 2007/8
Supplemental Application Submission:	Spring 2008
Start of Construction:	Spring 2009
Completion of Construction:	Fall 2009

I hereby certify that the above is accurate and true, to the best of my knowledge and belief.

Signature: _____
(Chief Elected Official, Town Manager, or other Officer Duly Authorized)

Date: _____

Return completed applications to: Mr. Stanley C. Juber
Administrator of the Local Bridge Program
Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, Connecticut 06131-7546

Town of Greenwich
Shore Road over Horseneck Brook
Bridge No. 05011
Federal Local Bridge Program

Contract No. 05011
 Project No. 05011
 Date: 08/20/08
 City: Greenwich

Preliminary Cost Opinion

Item No.	Description	Unit	Estimated Quantity	Unit Cost	Extended Cost
Structure Items					
1	Bituminous Concrete Class 2	Ton	15	\$75.00	\$1,125
2	Membrane Waterproofing	S.Y.	412	\$30.00	\$12,347
3	Remove Existing Structure	L.S.	1	\$80,000.00	\$80,000
4	Class "A" Concrete	C.Y.	328	\$600.00	\$196,771
5	Class "F" Concrete	C.Y.	65	\$800.00	\$52,256
6	Structural Steel	CWT.	309	\$250.00	\$77,175
7	Deformed Steel Bars	LB	19456	\$1.50	\$29,185
8	Deformed Steel Bars - Epoxy Coated	LB	6000	\$2.00	\$12,000
9	Elastomeric Bearing Pads	C.I.	1728	\$2.00	\$3,456
10	Shear Connectors	L.S.	1	\$3,000.00	\$3,000
11	Masonry Facing	S.Y.	225	\$500.00	\$112,500
12	Structure Excavation	C.Y.	1410	\$50.00	\$70,505
13	Pervious Structural Backfill	C.Y.	2357	\$45.00	\$106,058
14	Cofferdam & Pumping	L.F.	300	\$250.00	\$75,000
15	Temporary Sheet piling	S.F.	2000	\$25.00	\$50,000
Structure Subtotal:					\$881,377
20% Contingency:					\$176,275
Structure Total					\$1,057,653
Highway & Stream Channel					
1	Unsuitable Excavation	C.Y.	100	\$30.00	\$3,000
2	Maintenance and Protection of Traffic	L.S.	1	\$10,000.00	\$10,000
3	Catch Basin	EA.	2	\$1,200.00	\$2,400
4	R.C. Pipe	L.F.	60	\$40.00	\$2,400
5	Roadway Excavation	C.Y.	241	\$25.00	\$6,019
6	Subbase	C.Y.	200	\$35.00	\$6,994
7	Formation of Subgrade	S.Y.	722	\$2.50	\$1,806
8	Bituminous Concrete	Ton	249	\$75.00	\$18,688
9	Mobilization	L.S.	1	\$75,000.00	\$75,000
10	Concrete Sidewalk	S.F.	2500	\$12.00	\$30,000
11	Barricade Warning Lights	DAY	1000	\$1.00	\$1,000
12	Temporary Precast Concrete Barrier Curb	L.F.	80	\$30.00	\$2,400
13	Signs	S.Y.	28.7	\$42.00	\$1,205
14	Clearing and Grubbing	L.S.	1	\$10,000.00	\$10,000
15	Water Pollution Control	Est.	1	\$10,000.00	\$10,000
16	Erosion and Sedimentation Control	L.F.	400	\$3.00	\$1,200
17	Construction Staking	L.S.	1	\$8,000.00	\$8,000
18	Granite Curbing	L.F.	500	\$30.00	\$15,000
19	Turf Establishment / Topsoil	S.Y.	100	\$6.00	\$600
20	Construction Trailer	Mo.	9	\$950.00	\$8,550
Highway & Stream Channel Subtotal:					\$217,460
20% Contingency:					\$43,492
Highway & Stream Channel Subtotal					\$260,953
Estimated Total Construction Cost:					\$1,318,605
Utility Relocation					
	Water Main	L.F.	250	\$125.00	\$31,250
	Sanitary Sewer #1	L.F.	250	\$250.00	\$62,500
	Sanitary Sewer #2	L.F.	250	\$250.00	\$62,500
	Temporary Sewer Bypass	L.S.	1	\$100,000.00	\$100,000
Utility Relocation Subtotal:					\$256,250
20% Contingency:					\$51,250
Utility Relocation Subtotal:					\$307,500