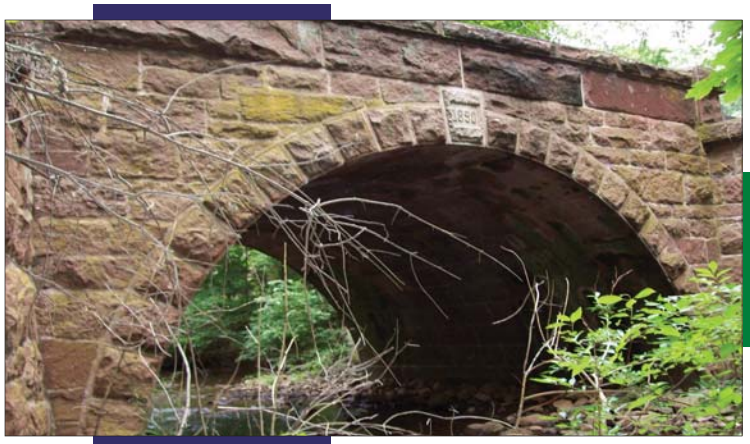
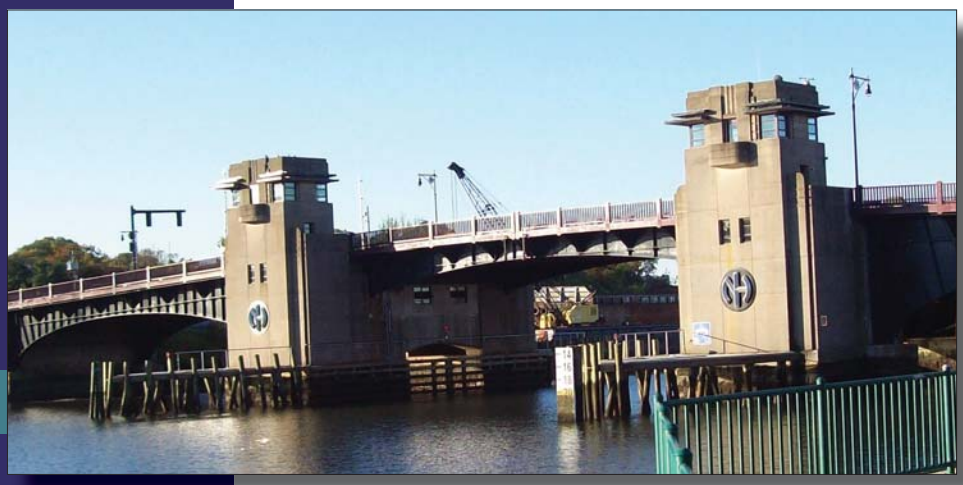


City of New Haven Bridge Inventory

Prepared by:

Dewberry®



November 2008

Table of Contents

Description	Page
1.0 Bridge Condition Assessment	1-1
1.1 State of New Haven's Bridges	1-1
1.2 Bridges of Special Concern	1-2
2.0 Bridge Inventory	2-1
2.1 Ownership & Maintenance Responsibilities	2-1
2.2 Data Collection & Site Visits	2-4
2.3 Statistical Comparison to CT Peer Cities	2-5
Appendix A – Bridge Rating Criteria	A-1
Appendix B – Memorandums & Correspondences	B-1
Appendix C – New Haven Bridge Inspection Data	C-1
Appendix D – Bridge Data for Statistical Analysis	D-1

1.0 Bridge Condition Assessment

This report is meant to provide a current, accurate inventory and assessment of all bridges located within the City of New Haven (City) that in some way the City has ownership and/or maintenance responsibility for. The report is aimed at providing vital information that the City can use in managing its bridge infrastructure resources. In addition to this report, a Geographic Information System (GIS) database was also developed to provide linkage to other important City infrastructure resources.

1.1 The State of New Haven's Bridges

Overall, the condition assessment of New Haven's bridges is "Satisfactory".

Thirty-three (33) bridges (69%) out of a total of forty eight (48) City owned or maintained bridges were noted to be either in "Satisfactory", "Good" or "Very Good" condition. A number of these bridges are currently under reconstruction. Bridges rated in these categories would typically be in need of minor maintenance related repairs.

Eleven (11) out of the forty eight (48) bridges (23%) were observed to be in "Fair" condition with some bridges requiring major maintenance related repairs. Typical maintenance needs include; patching delaminated concrete, replacing bridge rail, reconstructing sidewalk and installing riprap in scoured areas, etc. Within the next five (5) to ten (10) years, the City should seriously consider initiating the replacement/rehabilitation design of all bridges that are currently rated to be in "Fair" condition.

Four (4) out of the forty eight (48) bridges (8%) were determined to be in a "Poor" or worse condition warranting a more immediate need for a major rehabilitation or replacement. Bridges in this category require major rehabilitation involving replacement of the deck, the superstructure and potentially the entire bridge.

Of the four (4) aforementioned bridges, rehabilitation/replacement design is either complete or nearly complete for two (2) bridges. Reconstruction of the State Street Bridge over the Mill River (BIN 03748) and the Prospect Street Bridge over the Canal Line RR (BIN 03997) is expected to begin by spring of 2009. There are two (2) bridges which require full attention of the City to ensure that replacement/rehabilitation designs are initiated in a timely fashion to avoid potential bridge restrictions or full closures. These two (2) bridges are the East Rock Road Bridge over the Mill River (BIN 04418) and the Brookside Avenue Culvert over Wintergreen Brook (092002).

Refer to Appendix A for the rating criteria used to classify the bridge structural and geometric conditions.

1.2 Bridges of Special Concern

In addition to the standard bridge rating categories described above, a red flag system has been implemented to aid the City in quickly identifying those bridges which require close attention and potential follow up actions. The following is a list of bridges having been assigned red flags:

1. **BIN 03748 State Street over Mill River**
   This bridge is in "Critical" condition due to deterioration in the undermined timber pile foundation. ConnDOT is currently inspecting this bridge on a six (6) month frequency. The bridge replacement design is complete and the City is awaiting funding from ConnDOT to begin construction. Efforts must be made to expedite this process.

2. **BIN 03997 Prospect Street over Canal Line Railroad (Abandoned)**
   This bridge is in "Poor" condition due to extensive deterioration of the deck and steel floorbeams and warrants a superstructure replacement. The bridge replacement design is approximately 70% complete and the City is planning to begin construction in spring 2009. It is recommended that loose concrete from underside of the bridge deck be removed or a timber ceiling over walkway be provided to prevent potential injuries to pedestrians using the pathway. In addition, the damaged MBR and chain link fence along Prospect Street and Canal Street should be repaired, replaced or barricaded to eliminate the current traffic safety hazard.

3. **BIN 04418 East Rock Road over Mill River**
   This bridge is in "Poor" condition and warrants a deck replacement with superstructure repairs within the next 1-2 years due to serious deteriorations to the deck and sidewalk. This bridge is eligible for funding under the ConnDOT's Federal Local Bridge Program (FLBG) wherein City will be reimbursed for 80% of the total costs. The estimated cost to rehabilitate the bridge is approximately $1.3 Million. The City has filed an application with ConnDOT for funding commitment and is planning to initiate an RFQ to begin the design for the deck replacement. The bridge is currently posted for a 17 Ton vehicular load at the west approach to the bridge. A similar sign should be installed at the NE and SE roadway approaches to the bridge.

4. **BIN 092002 Brookside Avenue over Wintergreen Brook**
   This concrete box culvert was determined to be in "Fair" condition when it was last inspected by ConnDOT in 1991. Subsequent City led inspections have not been performed since 1991. The high water level in south half of the culvert will likely require the need for divers to perform a safety inspection. There is extensive concrete deterioration in portions of the culvert that are accessible indicating that the culvert would likely be classified as being in "Poor" condition when an in-depth inspection is completed. The observed deterioration also indicates the need to program a replacement

within the next 2-5 years. Since this bridge is not inspected by ConnDOT (span length less than 20 feet), an in-depth safety inspection should be performed to assess the bridge condition and biennial inspections should be scheduled by the City until the bridge is replaced. The estimated cost to replace the bridge is approximately $670,000. The bridge replacement will most likely be eligible for a grant of up to 32.9% of the construction costs under ConnDOT's State Local Bridge Program (SLBP).

5. **BIN 03810 Grand Avenue over Quinnipiac River**
The electrical control system of this moveable swing span bridge has been determined by ConnDOT inspection to be "Marginal". In the event the bridge becomes inoperable, the bridge will need to remain in an "open" position to permit the passage of river traffic, which has the right-of-way, resulting in hardship to the community. The City must increase its efforts to obtain funding commitments required for performing bridge repairs, rehabilitation and/or replacement. A preliminary design study should be initiated to determine the extent and estimate of the cost to repair/rehabilitate/replace the bridge electrical and mechanical machinery.

6. **BIN 03808 Edgewood Avenue over West River and Park Road**
The concrete deck arches and the substructures of this bridge have extensive deterioration warranting the need for a major rehabilitation or replacement in the next 5-10 years. Even though the overall condition of the bridge is "Fair", it is eligible for funding under the ConnDOT's FLBG. The City should initiate a study to determine which of the two options, "rehabilitation" or "replacement", would be more desirable considering the present bridge condition, life-cycle costs, maintenance and protection of traffic, utilities, and impacts to the public. A water utility pipe at the west approach to the bridge is missing an access cover and is exposed due to roadway settlement. The pipe should be lowered to eliminate a hazard to the vehicular traffic.

7. **BIN 06534 George Street over Church Street Tunnel**
The reinforced concrete superstructure of this bridge has extensive deterioration warranting the need for a major rehabilitation in 5-10 years. Even though the overall condition of the bridge is "Fair", a Sufficiency Rating (SR) of 80.2 may make it eligible for funding under ConnDOT's FLBG in the near future. There are remnants of a utility light pole with exposed wires on the south sidewalk of the bridge which should be removed to prevent a safety hazard to the pedestrians.

8. **BIN 04892 Wilmot Road over Wintergreen Brook**
This two (2) span concrete box culvert has extensive concrete deterioration, local scour has exposed portions of the floor slab and cut-off walls and the sidewalks are in poor condition. Even though the bridge is currently rated to be in a "Fair" condition with a SR of 85.2, it is anticipated that a replacement will be warranted in the next 5-10 years. A reduction in either the overall bridge rating to "Poor" or SR to below 80.0 will make the bridge eligible for funding under the ConnDOT's FLBG. The estimated cost to replace the bridge is approximately $670,000.

9. **BIN 04891 Wilmot Road over Town Farm Brook**
The three (3) span concrete box culvert has extensive concrete deterioration, local scour has exposed portions of the floor slab and cut-off walls and the bridge rail system is in serious condition. Even though the bridge is currently rated as "Fair" condition with a SR of 85.1, it is anticipated that a replacement will be warranted in the next 2-5 years. Repairs to the bridge rail system, however, should be addressed on an urgent basis to eliminate hazards to vehicular traffic and liability to the City. A reduction in the overall bridge rating to "Poor" or SR to below 80.0 will make the bridge eligible for funding under the ConnDOT's FLBG. The estimated cost to replace the bridge is approximately $810,000.

10. **BIN 04886 East Ramsdell Street over West River**
This four (4) span concrete box culvert has extensive concrete deterioration, local scour and an undermined concrete apron at the inlet has resulted in exposed portions of the floor slab and cut-off walls. There is also lateral and vertical misalignment between culvert sections. The misalignment is resulting in water leaking through random joints. Even though the overall bridge is currently rated to be in a "Fair" condition with a sufficiency rating (SR) of 85.9, it is anticipated that a replacement will be warranted in the next 5-10 years. A drop in the overall bridge rating to "Poor" or SR to below 80.0 will make the bridge eligible for funding under ConnDOT's FLBG. The estimated cost to replace the bridge is approximately $1.8 Million.

11. **BIN 06535 Crown Street over Church Street Tunnel**
This single span bridge with prestressed concrete deck units was noted to be in "Fair" condition by the 2007 ConnDOT inspection. The presence of large hollow sounding concrete areas and spalls in the prestressed concrete deck units along with evidence of active water leakage between joints suggests that a superstructure replacement be programmed within the next 2-5 years. Based on recent observations, the condition rating will likely be downgraded in subsequent ConnDOT inspections. The estimated cost to replace the bridge is approximately $1.5 Million.

12. **BIN 092004 Hemingway Street over Hemingway Creek**
These twin concrete box culverts were last inspected by ConnDOT in 1991. The high water level, along with silt buildup in the culverts, provides approximately 6" of freeboard. Apart from reducing the hydraulic opening, the buildup of silt prevents inspection access and should therefore be cleaned on an urgent basis. Since these twin culverts are not regularly inspected by ConnDOT (span length less than 20 feet), an in-depth safety inspection should be performed to assess the culvert's condition and biennial inspections should be scheduled by the City.

13. **BIN 092003 Eastern Street over Hemingway Creek**
These twin concrete box culverts were last inspected by ConnDOT in 1991. Subsequent City led inspections have not been performed since 1991. Similar to BIN 092004, the high water level along with silt buildup in the culverts provide approximately 6" of freeboard. Apart from reducing the hydraulic opening, the buildup of silt prevents

inspection access and should therefore be cleaned on an urgent basis. Since these twin culverts are not regularly inspected by ConnDOT (span length less than 20 feet), an in-depth safety inspection should be performed to assess the culvert's condition and biennial inspections should be scheduled by the City.

14. **BIN 05399 State Street over Union Station Pump House**
The pourable seal deck joint is rated to be in poor condition and has failed on all the piers and should be replaced to prevent water leaking onto and deteriorating the bridge superstructure. The approximate cost to replace the deck joints is estimated at $60,000. Based on the condition of the bridge, roadway reconstruction including drainage and safety improvements is warranted in the next 2-5 years. The approximate cost to perform roadway reconstruction is estimated at $810,000.

15. **BIN 04138 Wintergreen Avenue over Town Farm Brook**
This 118 year old stone masonry arch bridge, possibly eligible for listing in the National Register of Historic Places, is in "Good" condition. Maintenance related repairs to the bridges are arising mainly due to poor condition of the roadway over the bridge and the lack of a closed drainage system. A full depth roadway reconstruction along with drainage and safety improvements should be programmed in the next 2-5 years to prevent deterioration to the historic bridge. The estimated cost to perform the roadway improvements is approximately $160,000.

16. **BIN 06581 Church Street Extension over New Haven Interlock**
This bridge was constructed in 2003 and was observed to be in "Good" condition. There is a 5-foot long section of strip seal deck joint with missing header and loose steel extrusion at Pier 2. The deck joint should be repaired to prevent damage to vehicular traffic and water from leaking onto the steel superstructure.

17. **BIN 092006 Gando Drive over Unnamed Brook**
This concrete box culvert was last inspected by ConnDOT in 1991. Subsequent City led inspections have not been performed since 1991. The high water level, along with silt buildup in the culvert, may require divers to perform a safety inspection. In addition, confined space safety procedures may be required due to the comparatively long 115 foot length of the culvert. Since this culvert is not regularly inspected by ConnDOT (span length less than 20 feet), an in-depth safety inspection should be performed to assess the culvert's condition and biennial inspections should be scheduled by the City.

18. **BIN 06533 Church Street over Church Street Tunnel**
A light standard at the east sidewalk adjacent to the Knights of Columbus Building is tilted slightly and has a crack near the hand-hole cover. The light standard should be replaced to prevent possible injury to the pedestrian traffic.

19. **BIN 092001 Blake Street over Brook**
This concrete box culvert was last inspected by ConnDOT in 1991. Subsequent City led inspections have not been performed since 1991. Since the access to this culvert is via

two (2) catch basins located on Blake Street, safety inspection of this bridge will require the need for special equipment and inspectors with confined space training. Since this culvert is not regularly inspected by ConnDOT (span length less than 20 feet), an in-depth safety inspection should be performed to assess the culvert's condition and biennial inspections should be scheduled by the City.

20. <u>BIN 092007 Grove and Orange Streets over Canal Line Railroad (Abandoned)</u>

This metal arch culvert was last inspected by ConnDOT in 1997. Subsequent City led inspections have not been performed since 1997. The presence of a chain link fence at the east entrance prevents the culvert from being accessible for inspection. Since this culvert is not regularly inspected by ConnDOT (span length less than 20 feet), the chain link fence should be removed temporarily in order to perform an in-depth safety inspection and assess the culvert's condition and biennial inspections should be scheduled by the City.

21. <u>BIN 06023 Chapel Street No. 1 over West River</u>

There is cardboard and other debris present on the east abutment backwall. This should be removed to eliminate a potential fire hazard.

2.0 Bridge Inventory

2.1 Ownership & Maintenance Responsibilities

Within the boundaries of the City, a list of sixty-four (64) bridges provided by the City was researched relative to ownership. With the support of Connecticut Department of Transportation's Bridge Safety and Evaluation Unit (the agency responsible for inspecting all highway bridges in the state of Connecticut), Office of Rails and Amtrak Railroad, it was determined that of the sixty-four (64) bridges on the City's list, ConnDOT owns twelve (12) bridges and has "Adopted" six (6) bridges. Three (3) bridges are owned by Amtrak Railroad, one (1) bridge is not in service (BIN 03965 Washington Avenue over Conrail Railroad) and one (1) bridge is privately owned (Motel Entrance Drive over West River).

The remaining forty-one (41) bridges along with seven (7) bridges not previously listed by the City comprise the forty-eight (48) total bridges that the City actually owns and/or has a maintenance responsibility for. The seven (7) bridges not listed by the City previously include six (6) bridges which are less than 20 feet in span length (BIN 092001-092006) and a pedestrian bridge over Route 10 (BIN 06724) at Barnard School.

Thirty-eight (38) of the aforementioned forty-eight (48) bridges are wholly owned by the City and one (1) bridge, Spring Street/Washington Avenue over the West River, is shared ownership with the City of West Haven. The City has complete maintenance responsibility for these thirty-nine (39) bridges including all structural and non-structural components. Nine (9) bridges of the forty-eight (48) are considered "Orphaned" bridges.

An "Orphaned" bridge carries a local road over a railroad whose ownership is unknown. For bridges that fall under the "Orphaned" bridge category, the City is responsible for maintaining the non-structural components (i.e. wearing surface, curbs, sidewalks, guardrail, etc.) while ConnDOT is responsible for maintaining the major structural components of these bridges (i.e. deck, steel/concrete superstructure, substructure and foundations).

An "Adopted" bridge also carries a local road over a railroad. These bridges were originally classified as "Orphaned" bridges, but ConnDOT has taken full responsibility for the "Adopted" bridges.

Refer to Table 2.1 – New Haven Bridge Inventory for an updated bridge listing. Refer also to the enclosed Bridge Inventory Map identifying the forty-eight (48) bridges and their geographic locations. The memorandums and correspondence relating to bridge ownership are attached as Appendix B.

Table 2.1 – City of New Haven's Bridge Inventory

S No.	Carrying	Crossing	BIN	Owned by	Maintenance Agency	Inspection Agency	Condition of Bridge
1	Blake Street	Town Farm Brook	04889	City	City	ConnDOT	Good
2	Blake Street	West River	04890	City	City	ConnDOT	Good
3	Blake Street	Brook	092001	City	City	City	Good
4	Blatchley Avenue	Amtrak RR	05886	Orphan	City (Non-Structural comp.)	ConnDOT	Good
5	Brookside Avenue	Wintergreen Brook	092002	City	City	City	Poor
6	Chapel Street	Mill River	06169	City	City	ConnDOT	Satisfactory
7	Chapel Street	Providence & Worcester RR	04058	Orphan	City (Non-Structural comp.)	ConnDOT	Satisfactory
8	Chapel Street No. 1	West River	06023	City	City	ConnDOT	Good
9	Church Street	Church Street Tunnel	06533	City	City	ConnDOT	Satisfactory
10	Church Street Extension	New Haven Interlock	06581	City	City	ConnDOT	Good
11	Clifton Street	Amtrak RR	03879	Orphan	City (Non-Structural comp.)	ConnDOT	Fair
12	Crown Street	Church Street Tunnel	06535	City	City	ConnDOT	Fair
13	East Grand Ave. & Russell St.	Amtrak RR	04024	Orphan	City (Non-Structural comp.)	ConnDOT	Fair
14	East Ramsdell Street	West River	04886	City	City	ConnDOT	Fair
15	East Rock Road	Mill River	04418	City	City	ConnDOT	Poor
16	East Street	Amtrak RR	03746	Orphan	City (Non-Structural comp.)	ConnDOT	Satisfactory
17	Eastern Street	Hemingway Creek	092003	City	City	City	Satisfactory

S No.	Carrying	Crossing	BIN	Owned by	Maintenance Agency	Inspection Agency	Condition of Bridge
18	Edgewood Avenue	West River & Park Road	03808	City	City	ConnDOT	Fair
19	Ferry Street	Quinnipiac River	03809	City	City	ConnDOT	Under construction
20	Ferry Street	Amtrak RR	03998	Orphan	City (Non-Structural comp.)	ConnDOT	Satisfactory
21	Gando Drive	Brook	092006	City	City	City	Good
22	George Street	Church Street Tunnel	06534	City	City	ConnDOT	Fair
23	Grand Avenue	MNRR	03874	Orphan	City (Non-Structural comp.)	ConnDOT	Under construction
24	Grand Avenue	Mill River (East)	04380	City	City	ConnDOT	Good
25	Grand Avenue	Mill River (West)	04381	City	City	ConnDOT	Good
26	Grand Avenue	Quinnipiac River	03810	City	City	ConnDOT	Fair
27	Grove St. & Orange St.	Canal Line RR (Abandoned)	092007	City	City	City	Very Good
28	Hemingway Street	Hemingway Creek	092004	City	City	City	Fair
29	Hillhouse Avenue	Canal Line RR (Abandoned)	04026	City	City	ConnDOT	Under construction
30	Humphrey Street	Mill River	03813	City	City	ConnDOT	Fair
31	Middletown Avenue	Quinnipiac River	05742	City	City	ConnDOT	Good
32	Olive Street	Amtrak RR	03752	Orphan	City (Non-Structural comp.)	ConnDOT	Good
33	Orange Street	Gov Center Access Road	06532	City	City	ConnDOT	Satisfactory
34	Orange Street No. 1	Mill River	04885	City	City	ConnDOT	Satisfactory

S No.	Carrying	Crossing	BIN	Owned by	Maintenance Agency	Inspection Agency	Condition of Bridge
35	Pedestrian Walkway	Rte 10	06724	City	City	ConnDOT	Very Good
36	Pond Lily Avenue	West River	06024	City	City	ConnDOT	Good
37	Prospect Street	Canal Line RR (Abandoned)	03997	City	City	ConnDOT	Poor
38	Spring Street/Washington Avenue	West River	03815	New Haven & West Haven	50%	ConnDOT	Satisfactory
39	State Street	Mill River	03748	City	City	ConnDOT	Critical
40	State Street North	Union Station Pump House	05399	City	City	ConnDOT	Satisfactory
41	Temple Street	Canal Line RR (Abandoned)	03754	City	City	ConnDOT	Under construction
42	Valley Street No. 1	West River	05259	City	City	ConnDOT	Good
43	Wallace Street	Amtrak RR	05890	Orphan	City (Non-Structural comp.)	ConnDOT	Satisfactory
44	Wayfarer Street	Wintergreen Brook	092005	City	City	City	Satisfactory
45	Whitney Avenue	Canal Line RR (Abandoned)	03996	City	City	ConnDOT	Good
46	Wilmot Road	Wintergreen Brook	04892	City	City	ConnDOT	Fair
47	Wilmot Road	Town Farm Brook	04891	City	City	ConnDOT	Fair
48	Wintergreen Avenue	Town Farm Brook	04138	City	City	ConnDOT	Satisfactory

2.2 Data Collection & Site Visits

Forty-one (41) of the forty-eight (48) bridges are longer than 20-feet in span length and are biennially inspected by ConnDOT. Inspection responsibility for the remaining seven (7) bridges,

having span lengths less than 20-feet, lies with the City. These bridges were last inspected by ConnDOT in the early 1990's. Subsequent safety inspections were left to the City to perform. Since these inspections have not been performed, it is highly recommended that these inspections be scheduled and carried out in a timely fashion.

Available inspection reports for all forty-eight (48) bridges were reviewed prior to the scheduling of site visits. The intent of the site visits was to perform a cursory visual inspection of the various bridge elements to assess their overall condition and determine the need for maintenance related repairs or long term rehabilitation/replacement considerations. Site visits to the three (3) moveable bridges belonging to the City (i.e. Ferry Street, Grand Avenue and Chapel Street bridges) were not performed due to complexities involved with these types of bridges. However, inspection reports for these bridges were reviewed and findings are included herein.

Site visits were not performed using special inspection access vehicles such as lift trucks or snoopers. Site visits performed were not intended to substitute in place of formal safety inspections to be performed by ConnDOT or the City in accordance with the National Bridge Inspection Standards (NBIS).

An individual summary report has been prepared for each of the forty-eight bridges and is included herein. The data collected from field visits to the bridge sites including ConnDOT's inspection sheets, photographs, quantity take-offs and cost estimates prepared for the bridges are attached as Appendix C.

2.3 Statistical Comparison to CT Peer Cities

In an effort to compare New Haven's bridge inventory to that of other peer cities in the state of Connecticut, Bridgeport and Harford's bridge inventories were reviewed. Results of the comparative analysis are tabulated in Table 2.2 and the available data used for the analysis is attached as Appendix D.

New Haven, Bridgeport and Hartford are similar sized cities, both in terms of area and population. Though the number of bridges per square mile of city is similar for New Haven and Bridgeport (2.3-2.4), Hartford has more bridges per square mile of city area (3.6). However, bridges in New Haven are on an average longer (293.3 ft./Sq. mi) compared to Bridgeport (150.0 ft./Sq. mi) and Hartford (122.8 ft./Sq. mi). Bridges in New Haven are also comparatively larger in surface area and comprise 0.076% of the city area compared to 0.023% in Bridgeport and 0.062% in Hartford.

Bridges in the city of New Haven are younger with an average age of 32.6 years compared to 58.6 years and 61.2 years for the cities of Bridgeport and Hartford, respectively. This indicates that New Haven has made a concerted effort over the years to remediate and reconstruct their aging bridge infrastructure. These efforts on bridge reconstruction here in the city were evidenced during the site visits.

Though the average overall condition of bridges in New Haven and Hartford were determined to be "Satisfactory", a higher percentage of bridges in Hartford were determined to be in condition classification "Satisfactory" or better (88.5%) and "Fair" (11.5%) compared to New Haven (68.8% classified as "Satisfactory" or better and 22.9% classified as "Fair").

While 8.3% of New Haven's bridges are classified to be in a "Poor" or worse condition, none were noted to be the case for the city of Hartford. The proposed reconstruction of 2 bridges, currently classified as being in a "Poor" or worse condition, in spring of 2009 will result in New Haven's overall bridge condition to be similar to that of Hartford.

In contrast, the average overall condition of bridges in Bridgeport was determined to be "Fair" with 54.8%, 16.7%, and 28.6% of their bridges classified as being in "Satisfactory" or better, "Fair" and "Poor" or worse condition, respectively.

Table 2.2 – Comparison of Bridge Inventory

Description	City of New Haven	City of Bridgeport	City of Hartford
City Area (Sq. Miles)[1]	20.3	19.4	18.0
Population (2000 census)	123,626	139,529	121,578
Total Bridge Length (Feet)	5954.0	2910.0	2210.0
Total Bridge Area (Sq. Feet)	353,090.0	101,238.0[2]	256,982.0[2]
Number of Bridges	48	44	64
No, of Bridges per City Area (per Sq. Miles)	2.4	2.3	3.6
Length of Bridges per City Area (Feet per Sq. Miles)	293.3	150.0	122.8
Bridge Area per City Area (%)	0.076	0.023[2]	0.062[2]
Average Age of Bridge (Years)	32.6	58.6	61.2
Average Overall Condition (Scale 1-9)	6.1 (Satisfactory)	5.2 (Fair)	6.5 (Satisfactory)
Bridges in "Satisfactory" or Better Condition (%)	68.8	54.8	88.5
Bridges in "Fair" Condition (%)	22.9	16.7	11.5
Bridges in "Poor" or Worse Condition (%)	8.3	28.6	None

Legend
1 – Area obtained from Wikepedia.com.
2 – Based on available information since some bridge data is unavailable

1

BIN 04889 Blake Street over Town Farm Brook

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1939 Age: 69 years

Year of Rehabilitation: 2006 Age: 2 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/02/07

b. Component Condition Rating

Deck: Very Good Bridge Approach Condition: Very Good

Superstructure: Very Good Channel: Good

Substructure: Good Deck Geometry: Fair

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

1

BIN 04889 Blake Street over Town Farm Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Tighten hanger anchor nuts and roller support nuts for the gas main located between Girders G11 & G12 (photo log 12).

ii) Install Bridge Identification Numbers on both parapets (2 EA).

iii) Fill the undermined portion below the SW & SE wingwall with grout and provide rip rap protection (photo log 14).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations

(By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

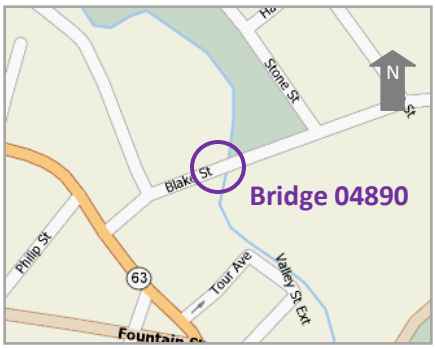
i) Confirm with utility company if the gas main between Girders G11 & G12 require hanger supports in addition to the 3 provided (8 supports Required per Design Plans).

ii) Confirm if the City is responsible for maintaining the stone masonry NW retaining wall (a 6' Wide x 8' High section has collapsed, photo log 19) & the SE retaining wall (a 20' Long portion of wall is leaning outward, photo log 9). Determine repair methodology, if necessary.

iii) Determine the as-built load rating capacity of the bridge and update information.

2

BIN 04890 Blake Street over West River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 2000 Age: 8 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/02/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Good

Superstructure: Good Channel: Good

Substructure: Good Deck Geometry: Poor

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 39.5 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

2

BIN 04890 Blake Street over West River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Install Bridge Identification Numbers on both parapets (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Repair/reconstruct a 5' Long x 2' High section of SW wingwall with spalls and outward movement (photo log 21).

ii) Consider installing guiderails at all 4 approach corners to meet current safety standards (4 EA).

Estimated Cost $ 20,000 (Item ii only, year 2009)

c. Long Term Considerations

i) None.

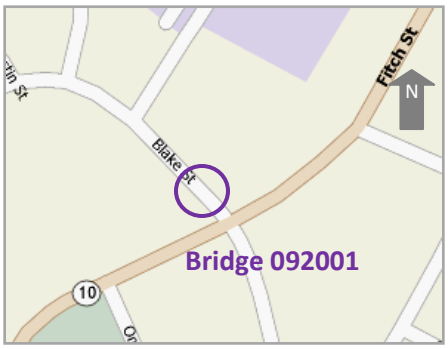
Estimated Cost $ NA

Funding Options NA

5. Follow-up Required None.

3

BIN 092001 Blake Street over Brook



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Box Culvert

Year of Construction: 1980 Age: 28 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 1/29/91(ConnDOT)*

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Poor

Superstructure: NA Channel: Good

Substructure: NA Deck Geometry: Fair

Culverts: Good Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good*

3

BIN 092001 Blake Street over Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Remove up to 12" of silt present in culvert (Reference 1991 ConnDOT Inspection).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) NA

Estimated Cost $ NA

c. Long Term Considerations

i) To be determined after completion of in-depth inspection.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) The access to the bridge is via two catch basins present on Blake Street. Inspection of this bridge will require inspectors to have training in confined space and special equipment. This bridge has not been inspected by ConnDOT since 1991 and an in-depth inspection in accordance with NBIS should be performed by the city.

ii) Schedule a safety inspection on a biennial program since the bridge is not inspected by ConnDOT.

4

BIN 05886 Blatchley Avenue over Amtrak Railroad

1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Multi-Girders

Year of Construction: 1989 Age: 19 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 11/14/05

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Satisfactory

Superstructure: Very Good Channel: NA

Substructure: Good Deck Geometry: Poor

Culverts: NA Under Clearance: Poor

c. Load Rating

Bridge Rating: 68.4 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

4

BIN 05886 Blatchley Avenue over Amtrak Railroad

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement at bridge & patch potholes in pavement at approaches (photo log 13).

ii) Provide a bituminous ramp at settled north approach pavement in the vicinity of deck joint (2 Tons, photo log 18 & 19).

iii) Repair spalled concrete at both sidewalks in span 1 (<1 CY, photo log 24).

iv) Remove brush overgrowth & debris present on bridge & approach sidewalks (photo log 9 & 21).

v) Provide bituminous/concrete ramp at all 4 settled approach sidewalks to prevent tripping hazard (40 SF, photo log 22).

vi) Patch spalled concrete at west parapet in span 1 (<1 CY).

vii) Remove graffiti present on aluminum fence over railroad at east parapet (photo log 11).

viii) Install permanent Bridge Identification Numbers at both parapets (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace damaged sections of chain link fence at west parapet in spans 2 & 3 and east parapet in span 2 (30 LF photo log 12, 17, & 23).

ii) Consider installing guide railing (MBR) at SE approach to protect vehicular traffic from blunt/exposed parapet end (1 EA, photo log 26).

iii) Replace the cracked MBR attachment to NW parapet (5 LF, photo log 20).

Estimated Cost $ 6,000.00 (Year 2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) This bridge was not inspected by ConnDOT in 2007 due to flagmen unavailability. It is anticipated that some of the deck condition ratings will be downgraded. Update condition information subsequent to ConnDOT inspection.

1 2 3 4 5 6 7 8 9

Good

4

BIN **05886 Blatchley Avenue** over **Amtrak Railroad**

Dewberry

5

BIN 092002 Brookside Avenue over Wintergreen Brook

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Box Culvert

Year of Construction: 1950 Age: 58 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 07/11/91(ConnDOT)* 09/19/08(City)

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Poor*

Superstructure: NA Channel: Fair*

Substructure: NA Deck Geometry: Excellent*

Culverts: Fair* Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair*

5

BIN **092002 Brookside Avenue** over **Wintergreen Brook**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Patch delaminated and punky concrete present on headwall, wingwall & barrel (10 CY, photo log 1 – 11).

ii) Mill and repave the deteriorated/settled bituminous concrete pavement over the culvert & the approaches (450 SY, photo log 16 and 17).

ii) Trim vegetation encroaching over the railing and fence at NE corner (photo log 22).

iii) Clean clogged CB grates (3 EA, photo log 14).

iv) Grout the hole at the steel rail attachment to concrete pylon (4 EA, photo log 19).

v) Remove leaf & dirt debris present on south sidewalk.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Consider installing MBR at approaches to meet current standards (4 EA).

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) Bridge replacement (2-5 years).

Estimated Cost $ 670,000 (Year 2009)

Funding Options ConnDOT – State Local Bridge Program (32.9% Grant)

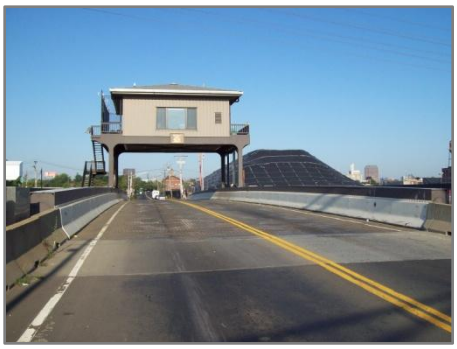
5. **Follow-up Required**

i) The presence of high water level on south half of both box culverts prevents inspection of the barrel. An attempt could be made to revisit the site in the likely event when the water elevations are low. If this is not successful, divers may be required to complete the inspection. It is likely that the culvert will be rated to be in poor condition subsequent to completion of inspection and should be scheduled for replacement in 2-5 years.

ii) Schedule a safety inspection on a biennial program since the bridge is not inspected by ConnDOT.

6

BIN 06169 Chapel Street over Mill River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Movable Swing Span (Girder-Floorbeam)

Year of Construction: 1992 Age: 16 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/17/07

b. Component Condition Rating

Deck: Fair Bridge Approach Condition: Satisfactory

Superstructure: Satisfactory Channel: Satisfactory

Substructure: Satisfactory Deck Geometry: TBD
Culverts: NA Under Clearance: NA
Mechanical Machinery: Good Electrical Machinery: Good

c. Load Rating

Bridge Rating: 38.2 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

6

BIN **06169 Chapel Street** over **Mill River**

4. **Bridge Improvements** (Site visit not part of scope. Recommendations based on ConnDOT insp. report 7/17/07)

a. Maintenance Recommendations (By DPW)

i) Repair areas with missing/deteriorated mortar fill in steel grid deck and sidewalks to improve traffic rideability.

ii) Grind down the protruding steel grate in the wheel paths, under the operators house, that could impact vehicular traffic (4 Locations).

iii) Clean the partially clogged scupper grates (10 EA).

iv) Replace the missing handhole cover screw at the north west lighting standard (1 EA).

v) Provide a bituminous/concrete ramp on roadway/sidewalk of both bridge spans to eliminate the vertical misalignment and resulting traffic hazard at both abutments deck joints.

vi) Install Bridge Identification Number on both parapets (2 EA).

vii) Grind tack welds and install door hinges in order to operate the closed hatch door at east end of box girder G1 (2 EA).

viii) Repair the lower handle of the access hatch door at the west end of box girder G1 (1 EA).

ix) Repair the areas with missing mortar fill on operator's house deck, at both porches, to prevent water leakage onto structural steel (360 SF).

x) Install a missing nut on scupper hanger at operator's house (1 EA).

xi) Install missing bolt in access plate at south end of operator's house East frame member (1 EA).

xii) Replace missing bolts at the northeast corner of the center fender at the horizontal fender to pile connection (3 EA).

xiii) Replace the broken plank in fender at the walkway platform at NE corner of Pier (1 EA).

xiv) Replace the missing railing section at the SE corner of the pivot pier fender system (8 LF).

xv) Seal the joint between the approach slabs and joint headers (66 LF).

xvi) Seal longitudinal and transverse cracks in bituminous concrete pavement at approaches (250 LF).

Estimated Cost $ 0.00

6

BIN **06169 Chapel Street** over **Mill River**

b. Short Term Repair Recommendations (By Contractor)

i) Replace the torn elastomeric longitudinal joint seal at bridge centerline to prevent water leakage onto superstructure underneath (226 LF).

ii) Clean and paint structural steel areas with moderate to heavy rust (400 SF).

iii) Fill void due to missing stone at bottom of southwest wingwall with concrete (<1 CY).

Estimated Cost $ Not Available

c. Long Term Considerations

i) Deck replacement with Substructure Repairs (10-20 years).

Estimated Cost $ Not Available

Funding Options NA

5. <u>Follow-up Required</u>

i) Continue monitoring the scour activity which has been lowering the channel bed along the east abutment.

7

BIN 04058 Chapel Street over Providence & Worcester Railroad

1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1912 Age: 96 years

Year of Rehabilitation: 2005 Age: 3 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 04/09/07

b. Component Condition Rating

Deck: Very Good Bridge Approach Condition: Good

Superstructure: Good Channel: NA

Substructure: Satisfactory Deck Geometry: Poor

Culverts: NA Under Clearance: Severe

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

7

BIN 04058 Chapel Street over Providence & Worcester Railroad

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Remove debris from bridge and approach sidewalks (photo log 11).
ii) Trim tree branches encroaching on north sidewalk (photo log 10).
iii) Repair vinyl fence at SE approach (photo log 8).
iv) Grind & patch uneven bituminous concrete pavement at east approach (photo log 9).
v) Install missing spring tension wire on chain link fence at parapets.
vi) Install Bridge Identification Number on both parapets (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace chain link fence at SW approach (30 LF, photo log 5 & 6).
ii) Consider installing guide railing (MBR) at all 4 approaches to meet Current safety standards (4 EA).

Estimated Cost $ 21,000 (Year 2009)

c. Long Term Considerations

i) None. Bridge Deck and Superstructure replaced in 2005.

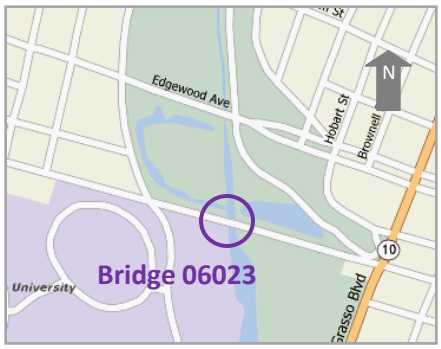
Estimated Cost $ NA
Funding Options NA

5. Follow-up Required

i) Determine as-built load capacity rating calculations and update information.

8

BIN 06023 Chapel Street #1 over West River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Multi-Girder

Year of Construction: 1991 Age: 17 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 7/17/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Satisfactory

Superstructure: Very Good Channel: Good

Substructure: Good Deck Geometry: Fair

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 98.8 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

8

BIN 06023 Chapel Street #1 over West River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Reset settled granite curb at SW & NE approach (20 LF, photo log 21 & 29).
ii) Provide bituminous/concrete ramp at settled approach sidewalks to prevent tripping hazard (40 SF, photo log 21).
iii) Provide extensions to weep pipes in order to drain water below bottom flange of girder (photo log 2).
iv) Perform repairs to steel structure independently supporting the 24" diameter drain pipe (photo log 16).
v) Provide bituminous ramp at settled east approach pavement (3 Tons, Photo log 28).
vi) Spot paint bottom flange of Girder 2(3 SF, photo log 4).
vii) Patch spalled concrete on west abutment seat (<1 CY).
viii) Remove cardboard & debris, from east abutment backwall to prevent Fire hazard (photo log 12).
ix) Remove graffiti present on Girder G1 (photo log 15).
x) Install Bridge Identification Number on both bridge parapets (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace saw and seal deck joint at west abutment (40 LF, photo log log 22).
ii)

Estimated Cost $ 800.00 (Year 2009)

c. Long Term Considerations

i) None.

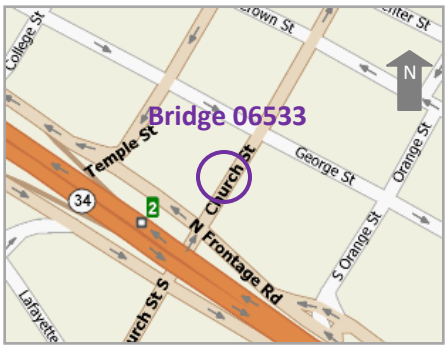
Estimated Cost $ NA
Funding Options NA

5. Follow-up Required None.

Satisfactory

9

BIN 06533 Church Street over Church Street Tunnel



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Multi-Girder

Year of Construction: 1963 Age: 45 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/24/07

b. Component Condition Rating

Deck: Fair Bridge Approach Condition: Fair

Superstructure: Satisfactory Channel: NA

Substructure: Satisfactory Deck Geometry: Critical

Culverts: NA Under Clearance: Serious

c. Load Rating

Bridge Rating: 36.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

Satisfactory

BIN 06533 Church Street over Church Street Tunnel

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Patch spalls and hollow areas in the concrete slab (3 CY, photo log 17).

ii) Patch hollow areas and spalls on both abutments (<1 CY, photo log 2).

iii) Patch the spalled areas in west sidewalk (photo log 13).

iv) Replace the tilted/cracked lighting standard on east sidewalk near The Knights of Columbus Building to prevent possible injury to pedestrians (1 EA, photo log 11).

v) Provide a handhole cover to cover the exposed wires at a lighting standard at SE approach (1 EA).

vi) Seal the open joint between west end of slab and BIN 06534 to prevent water leakage and further slab deterioration (photo log 17).

vii) Install Bridge Identification Number on abutments since it is difficult to locate the bridge in the tunnel (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Reconstruct cracked and settled portions fo east sidewalk (photo log 9).

Estimated Cost $ Not Available

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) Perform a load capacity rating and update information.

ii) A utility room with machinery behind / near the south abutment was observed to be flooded with 1/2'" of water. Water was also observed to leek onto south abutment from area behind the wall. The cause of the leakage needs to be identified.

10

BIN 06581 Church Street Extension over New Haven Interlock

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Through Truss

Year of Construction: 2003 Age: 5 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 05/02/05

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Very Good

Superstructure: Good Channel: NA

Substructure: Good Deck Geometry: Satisfactory

Culverts: NA Under Clearance: Good

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 06581 Church Street Extension over New Haven Interlock

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Repair 5' long section of strip seal deck joint with missing header and loose steel extrusion to prevent water leakage onto steel superstructure and damage to vehicular traffic(5 LF, photo log 5 & 6).

ii) Install Bridge Identification Number on parapets (2 EA).

iii) Clean the clogged scupper grate at north & south curb in span 2 (2 EA, photo log 21 & 27).

iv) Replace cracked handrail in catwalk in span 2 (Reference 2005 ConnDOT Inspection).

v) Install missing stand pipe end cap at pier 5 (Reference 2005 ConnDOT inspection).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

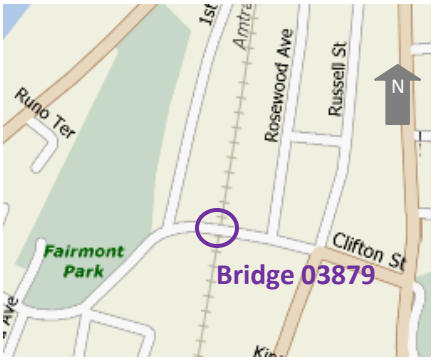
i) The bridge was not inspected by ConnDOT in 2007 due to flagmen unavailability. Update condition rating subsequent to ConnDOT inspections.

ii) Update the load capacity rating of the bridge.

iii) Confirm agreement with ConnDOT on the procedure to perform maintenance repairs on spans over the railroad.

11

BIN 03879 Clifton Street over Amtrak Railroad



1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Masonry Deck Arch

Year of Construction: 1912 Age: 96 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 06/09/05

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory

Superstructure: Satisfactory Channel: NA

Substructure: Fair Deck Geometry: NA

Culverts: NA Under Clearance: Critical

c. Load Rating

Bridge Rating: 36.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

11

BIN **03879 Clifton Street** over **Amtrak Railroad**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Replace damaged chain link fence with detached/bent top rail at NW approach (10 LF, photo log 6).

ii) Trim vegetation growth between north sidewalk and curb and behind south curb due to encroachment on roadway and sidewalk (photo log 10).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Install missing sections of south bituminous curb (50 LF, photo log 9).

ii) Replace missing section of aluminum fence panels at north & south headwalls (Reference 2005 Inspection Report).

Estimated Cost $ 1,500.00 (Year 2009)

c. Long Term Considerations

i) None.

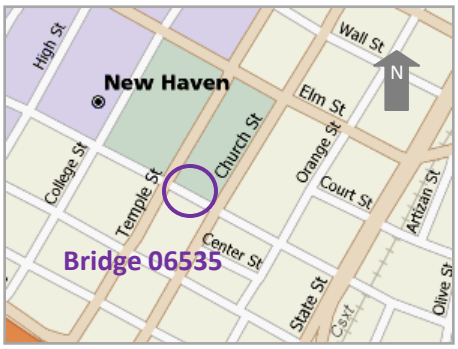
Estimated Cost $ NA

Funding Options NA

5. Follow-up Required None.

12

BIN 06535 Crown Street over Church Street Tunnel



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1963 Age: 45 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/24/07

b. Component Condition Rating

Deck: Fair Bridge Approach Condition: Satisfactory

Superstructure: Fair Channel: NA

Substructure: Satisfactory Deck Geometry: Fair

Culverts: NA Under Clearance: Serious

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

BIN **06535 Crown Street** over **Church Street Tunnel**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Repair the 3' x 5' settled and cracked portion of south sidewalk. (15 SF, photo log 4).

ii) Install bridge identification number on abutments since it is difficult to locate the bridge within the tunnel (2 EA).

iii) Patch hollow sounding concrete and spalled areas in both abutments and NE wingwall. (1 CY, photo log 13 & 18).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) Superstructure replacement with substructure repairs (2-5 years).

Estimated Cost $ 1,460,000 (Year 2009)

Funding Options ConnDOT – Federal Local Bridge Progam

5. Follow-up Required

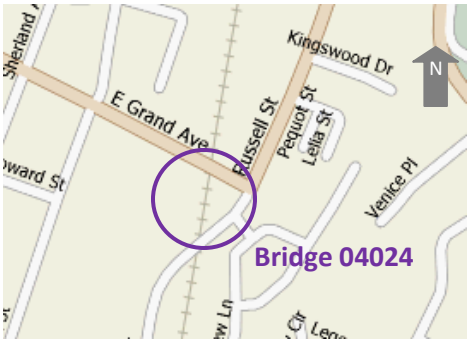
i) A new bituminous concrete pavement has been provided since last ConnDOT inspection. Upgrade the condition of the deck subsequent to next ConnDOT inspection. (photo log 3).

ii) The presence of large hollow sounding concrete areas and spalls in the prestressed concrete deck units along with evidence of active water leakage suggests that a superstructure replacement be programmed within the next 2-5 years since the condition rating could be downgraded in subsequent ConnDOT inspections. (photo log 8-12 & 14-18).

iii) Load rating capacity of this bridge is not available. An as inspected load rating capacity can be performed to re-evaluate the sufficiency rating (currently 82.2) and determine funding eligibility under the ConnDOT's Federal Local Bridge Program.

13

BIN 04024 East Grand Avenue and Russell Street over Amtrak Railroad



1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Masonry Deck Arch

Year of Construction: 1935 Age: 73 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 06/09/05

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Good

Superstructure: Fair Channel: NA

Substructure: Fair Deck Geometry: NA

Culverts: NA Under Clearance: Severe

c. Load Rating

Bridge Rating: 36.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

13

BIN 04024 East Grand Avenue and Russell Street over **Amtrak Railroad**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Replace missing sections of granite curb at south side of East Grand Avenue (10 LF, photo log 3).

ii) Seal cracks and patch potholes and settled areas of NB pavement at l Russell Street (photo log 8-10).

iii) Clear brush growth which has completely encroached over north sidewalk at East Grand Avenue (photo log 4).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace missing sections of aluminum fence panels at north headwall (Reference 2005 ConnDOT inspection report).

Estimated Cost $ 1,200 (Year 2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

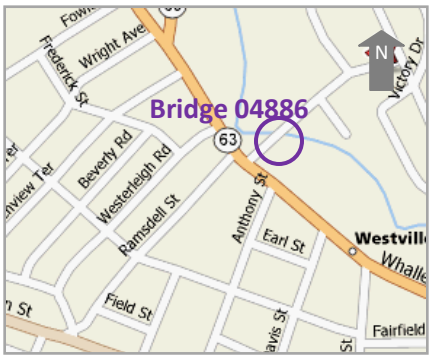
Funding Options NA

5. Follow-up Required

An inspection was not performed by ConnDOT in 2007 due to flagman unavailability. Update condition rating subsequent to ConnDOT Inspection.

14

BIN 04886 East Ramsdell Street over West River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Box Culvert

Year of Construction: 1951 Age: 57 years

Year of Rehabilitation: 1988 Age: 20 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/10/07

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory

Superstructure: NA Channel: Fair

Substructure: NA Deck Geometry: Satisfactory

Culverts: Fair Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

14

BIN **04886 East Ramsdell Street** over **West River**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete overlay on bridge and approaches (400 LF, photo log 10).

ii) Repair the cracked, settled, and scaled concrete sidewalks (± 5 CY, photo log 11).

iii) Install Bridge Identification Number on parapets (2 EA).

iv) Place rip-rap at inlet and outlet ends of Cells 1 and 2 to prevent undermining due to local scour (±3 CY, photo log 26).

v) Remove the tree and debris present at the inlet of Cell 1 preventing water flow and causing local scour (photo log 24).

vi) Repair the deteriorated concrete areas inside the culverts and at headwalls (±3 CY, photo log 13 & 23).

vii) Remove the vegetation encroachment on sidewalks (photo log 7).

viii) Remove the overgrown vegetation in the vicinity of the inlets at Cells 3 & 4 which is directing the flow mainly towards cells 1 & 2.

ix) Replace the failed /underminded concrete apron at inlet of Cell 3 (photo log 29).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Attach SE MBR to bridge parapet to eliminate an exposed / blunt end which is a traffic safety hazard.

Estimated Cost $ 1,000 (Year 2009)

c. Long Term Considerations

i) Bridge replacement (2-5 years)

Estimated Cost $ 1,750,000 (Year 2009)

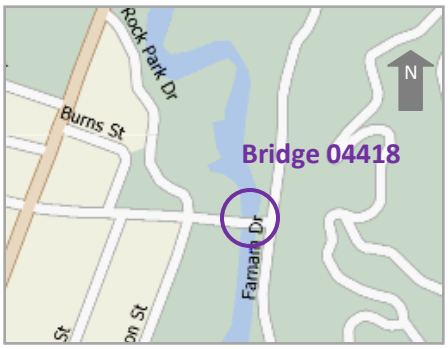
Funding Options Federal Local Bridge Program (ConnDOT)

5. Follow-up Required

i) Monitor the condition of the bridge (currently rated fair with Sufficiency Rating of 85.9). The presence of extensive concrete deterioration (cells 1 and 2), misalignment with evidence of water leakage through joints (cells 3 and 4) and scouring action at inlet indicates that this bridge should be programmed for replacement. Apply for ConnDOT funding under the Federal Local Bridge program when the condition rating is likely down graded in subsequent inspection.

15

BIN 04418 East Rock Road over Mill River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Deck Arch

Year of Construction: 1900 Age: 108 years

Year of Rehabilitation: 1984 Age: 24 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 08/11/07

b. Component Condition Rating

Deck: Severe Bridge Approach Condition: Poor

Superstructure: Satisfactory Channel: Good

Substructure: Satisfactory Deck Geometry: NA

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 14 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☒ No ☐

Overall Bridge Rating: Poor

15

BIN 04418 East Rock Road over Mill River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks (375 LF) and patch potholes (1 Ton) in overlay on bridge and approaches (photo log 12).

ii) Provide a bituminous/concrete ramp at end of NE and SE approach sidewalk to eliminate the sudden 12" drop offs (3 CY, photo log 3).

iii) Provide bituminous/concrete ramp at settled SW sidewalk. (10 SF)

iv) Replace the missing guide rail to post connection bolts at the SE approach (2 EA).

v) Repair the spalled concrete at the north sidewalk between the bridge and NW approach to prevent tripping hazard (<1 CY, photo log 13).

vi) Fill the area beneath the SW approach sidewalk to eliminate the underminded condition (2 CY, photo log 20).

vii) Install missing load restriction sign at both the NE & SE roadway approaches to the bridge (2 EA).

viii) Repair bent picket fence at NW approach (1 EA, photo log 19).

ix) Replace impact damaged section of SE approach guiderail (10 LF, photo log 5).

x) Clean the clogged CB at SW approach (1 EA, photo log 23).

xi) Provide riprap at the SW embankment to prevent further erosion (10 CY, photo log 22 & 25).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None recommended on deck. See "Follow-up required" below.

ii) Clean and paint floorbeam and arch steel that have impacted and surface rust.

iii) Repoint loose and missing mortar joints in the abutments and wingwalls (±200 LF).

Estimated Cost $ See "Follow-up required" below.

c. Long Term Considerations

i) Deck replacement with superstructure repairs (1-2 years).

Estimated Cost $ 1,280,000 (Year 2009)

Funding Options ConnDOT – Federal Local Bridge Program

15

BIN **04418 East Rock Road** over **Mill River**

5. Follow-up Required

i) The concrete filled steel grid deck (supported on steel purlins) and the sidewalks on the bridge are in serious condition. There are load restrictions on the bridge. The City has applied for funding under ConnDOT's Federal Local Bridge Program due to its eligibility. The City is planning to issue an RFQ for initiating the rehabilitation design. The City should program the rehabilitation design for completion within the next 1-2 years. The city should also plan on the possibility of the bridge being closed to vehicular traffic in the future until the deck replacement is completed.

16

BIN 03746 East Street over Amtrak Railroad

1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1906 Age: 102 years

Year of Rehabilitation: 1995 Age: 13 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 06/20/05

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Satisfactory

Superstructure: Good Channel: NA

Substructure: Satisfactory Deck Geometry: Good

Culverts: NA Under Clearance: Critical

c. Load Rating

Bridge Rating: 43.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

BIN 03746 East Street over Amtrak Railroad

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Remove debris & weed growth from bridge and approach sidewalks (photo log 7 & 8).

ii) Seal cracks in bituminous concrete wearing surface on bridge & at approaches (photo log 5).

iii) Repair damaged portion of chain link fence return at aluminum fence on east parapet near south end (10 LF, photo log 9).

iv) Install Bridge Identification Number on both parapets (2 EA).

v) Provide a bituminous/concrete ramp on the settled west approach sidewalk near north abutment to prevent tripping hazard (10 SF, photo log 14).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Update approach guiderails (MBR) to meet current safety standards.

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) None.

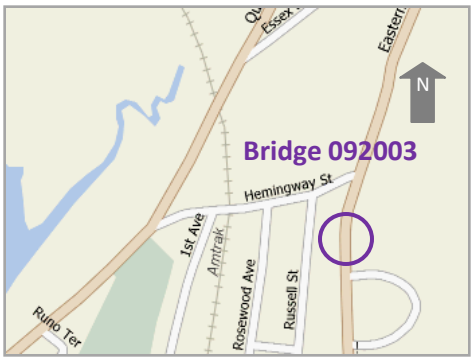
Estimated Cost $ NA

Funding Options NA

5. Follow-up Required None.

17

BIN 092003 Eastern Street over Hemingway Creek



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Box Culvert

Year of Construction: 1975 Age: 33 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 07/11/91 (ConnDOT)* 09/19/08 (City)

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory*

Superstructure: NA Channel: Fair*

Substructure: NA Deck Geometry: Satisfactory*

Culverts: Satisfactory* Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory*

17

BIN 092003 Eastern Street over Hemingway Creek

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Clean out silt and sediment from culvert and channel (photo log 12, 13, and 14)

ii) Seal cracks in bituminous concrete pavement (photo log 3).

iii) Replace damaged fence at west parapet (45 LF, photo log 6 & 8).

iv) Install Bridge Identification Number on both parapets (2 EA).

v) Patch spalled concrete on west parapet (<1 CY, photo log 16 & 17).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations

(By Contractor)

i) Consider installing guiderails meeting current standards at all approach corners (4 EA, photo log 7).

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) To be determined after completion of in-depth bridge inspection.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) The silt buildup provides approximately 6" of free board for a 3' deep culvert. Apart from reducing the hydraulic opening, the buildup of silt prevents inspection access and should therefore be cleaned on an urgent basis.

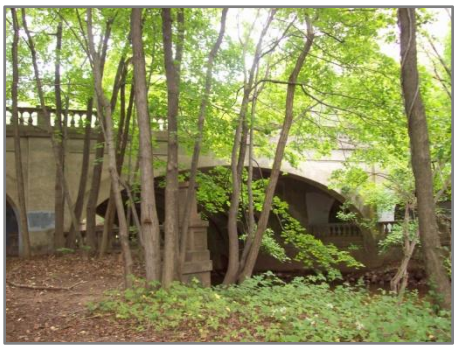
ii) Perform an in-depth inspection once sediments are removed.

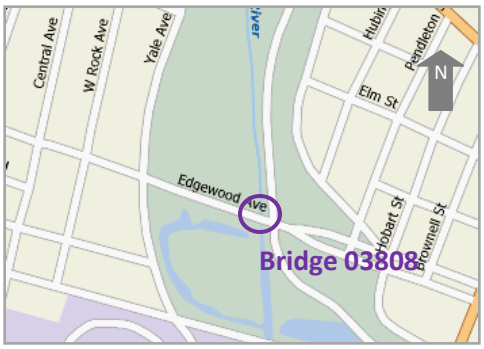
iii) Schedule a safety inspection on a biennial program since this bridge is not inspected by ConnDOT.

iv) Perform a load capacity rating of this bridge and update information.

18

BIN 03808 Edgewood Avenue over West River & Park Road





1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Arch (3 Span)

Year of Construction: 1910 Age: 98 years

Year of Rehabilitation: 1974 Age: 34 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/17/07

b. Component Condition Rating

Deck: Satisfactory Bridge Approach Condition: Satisfactory

Superstructure: Fair Channel: Good

Substructure: Fair Deck Geometry: Satisfactory

Culverts: NA Under Clearance: Critical

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

18

BIN 03808 Edgewood Avenue over West River & Park Road

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Install Bridge Identification Number on parapets (2 EA).
ii) Repair spalled and deteriorated concrete at deck underside (2 CY, photo log 24 & 38).
iii) Patch pot holes in pavement (<1 Ton, photo log 3).
iv) Patch concrete spall at north sidewalk and railing (<1CY, photo log 2).
v) Provide bituminous/concrete ramp at settled sidewalks at all approaches to prevent tripping hazard (40SF, photo log 1).
vi) Clear debris present on CB grate at SE approach (1 EA, photo log 40).
vii) Provide missing covers to utility (water) access pipes at both bridge approaches. Lower pipe at west approach as necessary, to prevent a traffic hazard. Pipe exposed as a result of settled pavement (2 EA, photo log 43).
viii) Repair spalled and deteriorated concrete on arches, abutments and piers (5CY, photo log 20, 35, & 41).
ix) Provide fill around the eroded & exposed fence posts at NE, SE, & NW approaches (3 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) Superstructure rehabilitation/replacement (5-10 years).

Estimated Cost $ Not Available

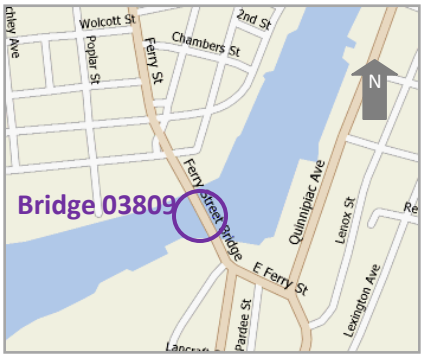
Funding Options ConnDOT – Federal Local Bridge Program

5. Follow-up Required

i) Extensive deterioration to concrete deck, arches and substructures warrants a major bridge rehabilitation or replacement within the next 5-10 years. The bridge is eligible for funding under ConnDOT's Federal Local Bridge Program.

19

BIN 03809 Ferry Street over Quinnipiac River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Movable Bascule (Double Leaf)

Year of Construction: 1940 Age: 68 years

Year of Rehabilitation: 2008 Age: 0 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: NA

b. Component Condition Rating

Deck: NA Bridge Approach Condition: NA

Superstructure: NA Channel: NA

Substructure: NA Deck Geometry: NA

Culverts: NA Under Clearance: NA

Mechanical Machinery: NA Electrical Machinery: NA

c. Load Rating

Bridge Rating: NA Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☐

Overall Bridge Rating: NA – Bridge Under Construction

BIN **03809 Ferry Street** over **Quinnipiac River**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)
i) None. Bridge under construction.
Estimated Cost $ 0.00

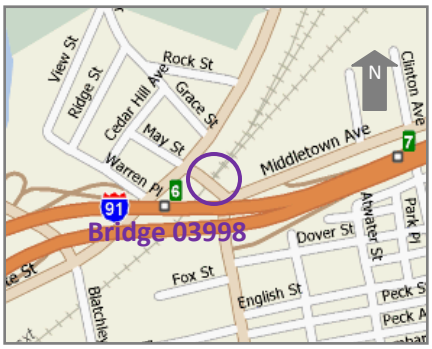
b. Short Term Repair Recommendations (By Contractor)
i) None. Bridge under construction.
Estimated Cost $ NA

c. Long Term Considerations
i) None. Bridge under construction.
Estimated Cost $ NA
Funding Options NA

5. Follow-up Required
i) Update bridge description and condition information after completion of construction and ConnDOT inspection.

20

BIN 03998 Ferry Street over Amtrak Railroad



1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Through Truss

Year of Construction: 1912 Age: 96 years

Year of Rehabilitation: 1992 Age: 16 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 10/11/05

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Satisfactory

Superstructure: Satisfactory Channel: NA

Substructure: Good Deck Geometry: Critical

Culverts: NA Under Clearance: Critical

c. Load Rating

Bridge Rating: 40.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

BIN 03998 Ferry Street over Amtrak Railroad

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks and fill potholes present at both approach pavements to the bridge (photo log 3, 12 & 15).

ii) Remove debris and trim vegetation growth encroaching onto approach sidewalks (photo log 18, 28).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace damaged SE MBR attachment to parapet (1 EA, photo log 22).

ii) Replace damaged MBR end detail at NE and SW approach (2 EA, photo log 4).

iii) Replace the saw and seal deck joint at east abutment (37LF, photo log 9).

Estimated Cost $ 6,000 (Year 2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

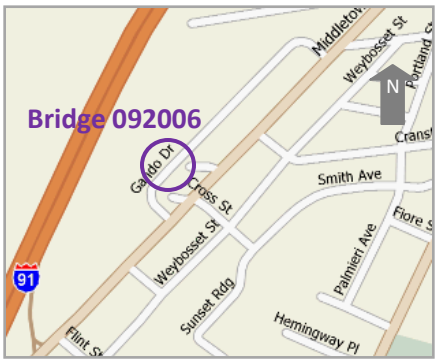
Funding Options NA

5. Follow-up Required

This bridge was not inspected by ConnDOT in 2007 due to Flagman unavailability. Update condition information subsequent to ConnDOT inspection.

21

BIN 092006 Gando Drive over Brook



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Box Culvert

Year of Construction: 1985 Age: 23 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 01/08/91 (ConnDOT)* 9/19/08 (City)

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory

Superstructure: NA Channel: Good

Substructure: NA Deck Geometry: Satisfactory

Culverts: Very Good* Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good*

21

BIN 092006 Gando Drive over Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Clean out sediment buildup in culvert.

ii) Seal cracks in bituminous concrete pavement on bridge and at approaches (photo log 11).

iii) Install Bridge Identification Number (2 EA).

iv) Clean partially clogged CB grate (2 EA, photo log 10).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Consider installing metal beam rail along the west headwall since the channel outlet is close to the roadway (30 LF, photo log 8).

Estimated Cost $ 2,500.00 (Year 2009)

c. Long Term Considerations

i) To be determined after completion of in-depth inspection.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

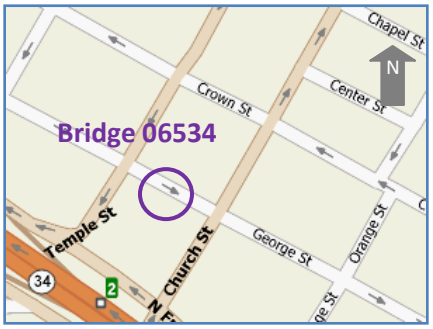
i) Determine and update the load capacity rating of the bridge.

ii) Schedule a safety inspection on a biennial program since this bridge is not inspected by ConnDOT.

iii) The high water level and silt buildup in the 6' deep by 115' long culvert requires chest waders and possibly confined space training for bridge inspection. An in-depth inspection should be performed by safety trained inspectors.

22

BIN 06534 George Street over Church Street Tunnel



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Multi-Girders

Year of Construction: 1963 Age: 45 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/27/07

b. Component Condition Rating

Deck: Satisfactory Bridge Approach Condition: Fair

Superstructure: Fair Channel: NA

Substructure: Satisfactory Deck Geometry: Critical

Culverts: NA Under Clearance: Severe

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

BIN **06534 George Street** over **Church Street Tunnel**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Replace missing steel header plate at north sidewalk deck joint to prevent tripping hazard (1 EA, photo log 22).

ii) Repair the hollow areas and spalls on abutment stems, pier caps, columns, deck underside and concrete beams/superstructure (5 CY, photo log 3 – 13).

iii) Repair underbridge luminaires in the tunnel that are broken or are not working (photo log 5).

iv) Secure lose vent grate in roadway over span 5 which appears to move under traffic live load (1 EA, photo log 17).

v) Install Bridge Identification Number in the tunnel since it is difficult to locate the bridge limits (2 EA).

vi) Repair spalls in south sidewalk (1CY, photo log 18).

vii) Clean clogged CB at roadway in the tunnel in span 7 resulting in ponding water (1 EA).

viii) Remove remaining portion of light pole with exposed wire at south sidewalk (1 EA, photo log 19).

ix) Seal the joint between Girder G13 and Bridge 06533 in span 13 to prevent active leakage and further deterioration of Girder G 13 (photo log 12).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) Superstructure rehabilitation in 5-10 years.

Estimated Cost $ Not Available

Funding Options ConnDOT – Federal Local Bridge Program

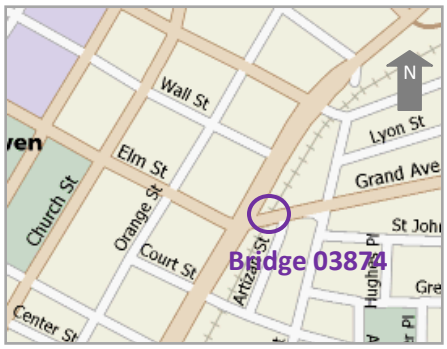
5. Follow-up Required

i) Extensive deterioration in concrete superstructure may warrant a major superstructure rehabilitation in 5-10 years.

ii) Monitor condition rating of culvert (currently fair) and sufficiency rating (SR) of bridge (currently 80.21). File funding eligibility application with ConnDOT when culvert condition rating is downgraded to “Poor” or SR is determined to be less than 80.0.

23

BIN 03874 Grand Avenue over Metro North Railroad



1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Not Available

Year of Construction: 2009 Age: 0 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months (after construction) Last Inspection Date: NA

b. Component Condition Rating

Deck: NA Bridge Approach Condition: NA

Superstructure: NA Channel: NA

Substructure: NA Deck Geometry: NA

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: TBD Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☐

Overall Bridge Rating: NA - Bridge under construction.

BIN **03874 Grand Avenue** over **Metro North Railroad**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)
i) None. Bridge under construction.
Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)
i) None. Bridge under construction.
Estimated Cost $ NA

c. Long Term Considerations
i) None. Bridge under construction.
Estimated Cost $
Funding Options

5. Follow-up Required
i) Update bridge description and condition information after completion of construction.

24

BIN 04380 Grand Avenue over Mill River (East)

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1982 Age: 26 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/16/07

b. Component Condition Rating

Deck: Satisfactory Bridge Approach Condition: Satisfactory

Superstructure: Good Channel: Good

Substructure: Good Deck Geometry: Very Good

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 51.3 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 04380 Grand Avenue over Mill River (East)

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks (500 LF, photo log 31) and patch potholes in bituminous concrete pavement at bridge and approaches.

ii) Reset settled granite curb at NE approach (5 LF, photo log 32).

iii) Provide bituminous/concrete ramp at settled NE & SW approach sidewalks to prevent tripping hazard (20 SF, photo log 32).

iv) Patch hollow surrounding concrete in north sidewalk & spalled concrete in north parapet (<1 CY).

v) Remove weed growth from bridge & approach sidewalk & curb lines (photo log 29 & 35).

vi) Install Bridge Identification Number on both parapets (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace the cracked saw and seal deck joint at both abutments (80 LF, photo log 28 & 30).

ii) Consider installing guiderails (MBR) at all 4 approach corners to meet current standards (4 EA).

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) Verify with the Regional Water Authority if the deteriorated condition of concrete encasement for the 30" watermain & the pipe not being seated on random supports warrants attention.

ii) Evaluate shear capacity of Girder G12 due to deterioration at west abutment prior to determining a plan for corrective action (photo log 3 & 19) and update load rating capacity.

25

BIN 04381 Grand Avenue over Mill River (West)

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1982 Age: 26 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/16/07

b. Component Condition Rating

Deck: Satisfactory Bridge Approach Condition: Satisfactory

Superstructure: Good Channel: Good

Substructure: Good Deck Geometry: Very Good

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 51.9 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 04381 Grand Avenue over Mill River (West)

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement at bridge and the approaches (400 LF, photo log 18 & 19).

ii) Patch the spalled concrete at south parapet and north sidewalk (<1 CY).

iii) Provide bituminous/concrete ramp at settled SW and SE approach sidewalks to prevent tripping hazard (20 SF, photo log 21).

iv) Repair spalled and depressed areas and remove weed growth present on concrete sidewalk at all four approach corners (photo log 22).

v) Install bridge identification numbers on both parapets (2 each).

vi) Patch spalled and hollow sounding concrete in both abutment stem and backwalls (0.5 CY, photo log 9).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) Confirm that the existing saw and seal joints are incorrectly located beyond the prestressed concrete deck units resulting in observed pavement cracking (photo log 16). Install new deck joints at the correct location, if necessary.

26

BIN 03810 Grand Avenue over Quinnipiac River

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Movable Swing Span (Through Truss)

Year of Construction: 1900 Age: 108 years

Year of Rehabilitation: 1984 Age: 24 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/09/07

b. Component Condition Rating

Deck: Fair Bridge Approach Condition: Satisfactory

Superstructure: Fair Channel: Fair

Substructure: Fair Deck Geometry: Poor
Culverts: NA Under Clearance: NA
Electrical Machinery: Poor Mechanical Machinery: Fair

c. Load Rating

Bridge Rating: 30.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

BIN 03810 Grand Avenue over Quinnipiac River

4. Bridge Improvements (Site visit not in scope, information based on CONNDOT inspection report dated 7/9/07)

a. Maintenance Recommendations (By DPW)

i) Patch holes and areas of severe scale in the swing span deck (7000 SF).
ii) Weld/repair the broken deck bearing bar in span 5 at pier 4 (1 EA).
iii) Reseal the joint along the sidewalk structural tubing and deck interfaces at both curblines (852 LF).
iv) Clean all scupper grates and pipes (16 EA).
v) Install bridge identification numbers (2 EA).
vi) Install a missing nut at stringer S4 bearing at east abutment (1 EA).
vii) Clean and paint stringer bearings at piers 2 and 4 (20 EA).
viii) Remove sand debris and clean and paint span 3 and 4 floorbeam hanger rods (56 EA).
ix) Clean, paint and drill holes in bottom angles of portal & top chord truss members that have ponding water (8 EA).
x) Remove sand debris on the structural steel under the open joints and at all truss bottom chord nodes.
xi) Seal the cracks in the bituminous concrete overlay at both approaches and the separation along both abutments joint headers (125 LF).
xii) Patch the 2 potholes in the east approach pavement (2 CF).
xiii) Reset the 3” settled curbing at all four approach corners.
xiv) Provide a bituminous/concrete ramp to address settlement at the southeast approach sidewalk.
xv) Repair the 3’x8” hole in chain link fence at SE corner (3 SF).
xvi) Remove the vegetation encroaching on the NW approach sidewalk.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace compression seal joints at piers 1 and 5 including the sidewalks (108 LF).
ii) Install an anchor bolt at stringer S5 bearing at east abutment (1 EA).
iii) Provide a bituminous/concrete ramp in the roadway at swing span to eliminate vertical misalignment between swing and approach spans.
iv) Replace all frozen girder bearings at approach spans(16 EA).
v) Reweld/repair all cracked girder bottom flange welds at the

bearings (4 EA).

vi) Reweld/repair cracked weld between stringer S6 top flange and a purlin knee brace in span 1 (1 EA).

vii) Reweld/repair all cracked welds between shaft support beam and crank support plate at the lifters (10 EA).

viii) Repair the section loss, perforations and tears in the drum girder top flange and the radial girders top flanges at the pivot pier (2000 LBS).

ix) Replace rivets with 100% head loss at drum & radial girders at pivot pier with 7/8 inch diameter high strength bolts (50 EA).

x) Re-point deteriorated mortar joints at abutments & piers (500 LF).

xi) Reset shifted stones at the north nose of pier 4 and grout stones in place (30 CF).

xii) Replace cracked stones under span 5 girder bearings at pier 4 with concrete (20 CF).

xiii) Pump grout into timber cribbing to stabilize piers 1 and 5 (52 CF) and place riprap over exposed footings and cribbing at piers 1 and 5 (90 CY) as a result of local scour activity.

xiv) Remove all sand and debris on pier 2 and pier 4 seats.

Estimated Cost $ Not Available

c. Long Term Considerations

i) Bridge replacement/major rehabilitation based on funding availability (5-10yrs).

Estimated Cost $ Not available

Funding Options Not Available

5. <u>Follow-up Required</u>

i) Continue monitoring the performance of bridge electrical system which has been rated marginal.

ii) Continue monitoring the tilted girder G1 at the west abutment and girder G2 at pier 4 in span 5.

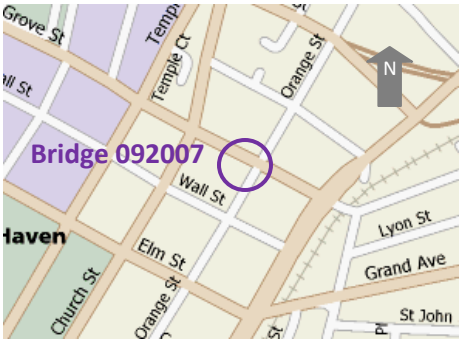
iii) Continue monitoring scour activity which has been lowering the channel bottom at piers 1, 3, and 5.

iv) The need for permits and containment to perform repairs over watercourse will need to be determined.

v) Efforts must be increased to obtain funding commitments for bridge rehabilitation/replacement.

27

BIN 092007 Orange Street & Grove Street over Canal Line Railroad (Abandoned)



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Metal Arch Culvert

Year of Construction: 1996 Age: 12 Years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 1/30/1997 (ConnDOT)*
9/16/2008 (City)

b. Component Condition Rating

Deck: NA* Bridge Approach Condition: NA

Superstructure: NA* Channel: NA

Substructure: NA* Deck Geometry: NA

Culverts: Very Good* Under Clearance: NA

c. Load Rating

Bridge Rating: 34 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Very Good*

27

BIN 092007 Orange Street & Grove Street over Canal Line Railroad (Abandoned)

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Patch the spalls in sidewalk concrete (<1 CY).

ii) Tighten loose chain link fence post at north approach to the bridge (1 EA).

iii) Install Bridge Identification Number on east parapet (1 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace chain link fence with MBR at NE approach to meet current safety standards (1 EA, photo log 7).

Estimated Cost $ 5,000 (Year 2009)

c. Long Term Considerations

i) To be determined after completion of in-depth inspection.

Estimated Cost $ NA

Funding Options NA

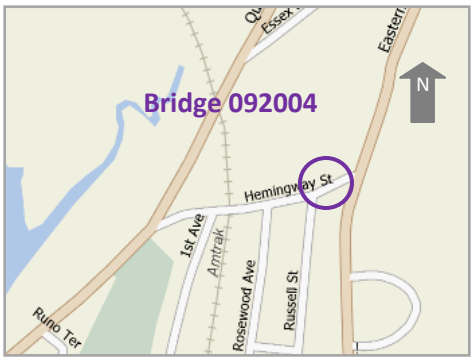
5. Follow-up Required

i) The bridge is not accessible due to presence of a chain link fence at east entrance to the culvert. Perform an in-depth inspection by providing access to the culvert.

ii) Schedule a safety inspection of the bridge on a biennial program since it is not inspected by ConnDOT.

28

BIN 092004 Hemingway Street over Hemingway Creek



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Box Culvert

Year of Construction: 1975 Age: 33 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 07/11/91(ConnDOT)* 9/19/08(City)

b. Component Condition Rating

Deck: Good* Bridge Approach Condition: Satisfactory*

Superstructure: NA Channel: Fair*

Substructure: NA Deck Geometry: Satisfactory*

Culverts: Fair* Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair*

BIN **092004 Hemingway Street** over **Hemingway Creek**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Clean silt and sediment buildup from culvert and Channel (photo log 5 & 6).
ii) Replace missing chain link fence on North parapet (35 LF, photo log 13).
iii) Replace damaged chain link fence at NW approach along sidewalk (15 LF, photo log 16).
iv) Patch potholes in bituminous concrete pavement (photo log 15).
v) Install approach guide rail at end of parapets (4 EA, photo log 14).
vi) Install Bridge identification Number on both parapets (2 EA).
vii) Clear vegetation growth from curbs & sidewalks (photo log 12 & 13).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Consider installing guiderails meeting current standards at all approach corners (4 EA, photo log 14).

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) To be determined after completion of in–depth bridge inspection.

Estimated Cost $ NA
Funding Options NA

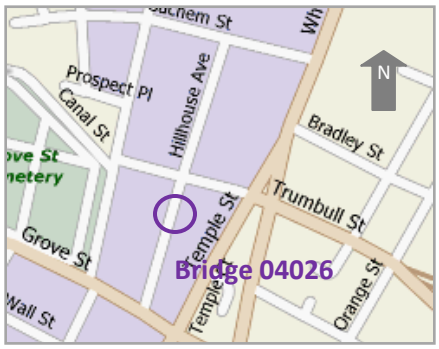
5. Follow-up Required

i) The silt buildup provides approximately only 6” of free board for a 3’ deep culvert. Apart from reducing the hydraulic opening, the buildup of silt prevents inspection access and should therefore be cleaned on an urgent basis.
ii) Perform an in-depth inspection once silt deposits are removed.
iii) Schedule a safety inspection on a biennial program since this bridge is not inspected by ConnDOT.
iv) Investigate history of roadway overtopping during storm events. This culvert may have to be raised due to downstream restrictions & daming.
v) Perform a load capacity rating for this bridge and update information.

Under construction

29

BIN 04026 Hillhouse Avenue over Canal Line Railroad (Abandoned)



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Beams

Year of Construction: 1910 Age: 98 years

Year of Rehabilitation: 2008 Age: 0 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months (After Constr.) Last Inspection Date: NA

b. Component Condition Rating

Deck: NA Bridge Approach Condition: NA

Superstructure: NA Channel: NA

Substructure: NA Deck Geometry: NA

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: TBD Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☐

Overall Bridge Rating: NA - Bridge under construction

29

BIN **04026 Hillhouse Avenue** over **Canal Line Railroad (Abandoned)**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)
i) None. Bridge under construction.
Estimated Cost $ 0.00

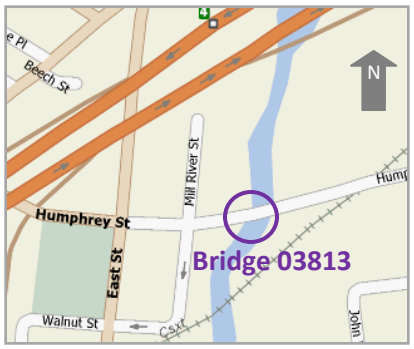
b. Short Term Repair Recommendations (By Contractor)
i) None. Bridge under construction.
Estimated Cost $ NA

c. Long Term Considerations
i) None.
Estimated Cost $ NA
Funding Options NA

5. Follow-up Required
i) The proposed construction also includes two (2) pedestrian bridges. Update bridge condition information after completion of construction.

30

BIN 03813 Humphrey Street over Mill River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Pretressed Concrete Deck Units

Year of Construction: 1908 Age: 100 years

Year of Rehabilitation: 1973 Age: 35 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 04/05/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Very Good

Superstructure: Good Channel: Poor

Substructure: Fair Deck Geometry: Fair

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 47.8 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

BIN 03813 Humphrey Street over Mill River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Remove vegetation growth encroaching on approach sidewalks (photo log 16).

ii) Provide bituminous/concrete ramp at settled NW approach sidewalk to prevent tripping hazard (10 SF, photo log 23).

iii) Reconstruct heaved portion of SE approach sidewalk due to tree root growth (25 SF, photo log 16).

iv) Install 1 missing post for the aluminum pipe rail at north parapet (1 EA, photo log 22).

v) Provide extensions to weep pipes to drain water below the superstructure (Reference 2007 ConnDOT Inspection).

vi) Install Bridge Identification Number on both parapets (2 EA).

vii) Seal the cracks in bituminous concrete pavement at east approach (photo log 17) and provide a ramp at settled west approach pavement (5 Tons).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Repoint deteriorated & missing mortared joints in stone masonry base at east abutment & piers (Reference 2007 ConnDOT Inspection & photo log 7).

ii) Patch spalled concrete at NW wingwall (<1 CY, Reference 2007 ConnDOT Inspection).

iii) Grout/secure the separated stone at north end of pier 1 due to missing mortar (Reference 2007 ConnDOT Inspection).

iv) Place riprap along west face of pier 2 (40 CY, Reference 2007 ConnDOT Inspection.

v) Consider installing MBR at NE, NW, & SE approaches to meet current standards (3 EA).

Estimated Cost $ Not Available

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

1 2 3 4 5 6 7 8 9

Fair

30

BIN **03813 Humphrey Street** over **Mill River**

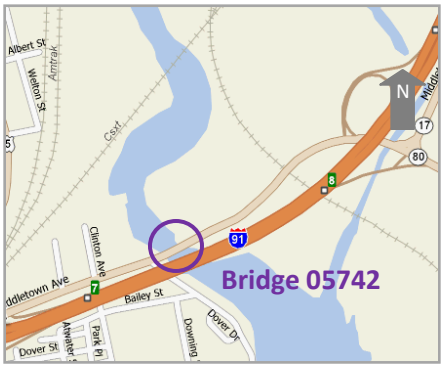
5. Follow-up Required

i) Continue monitoring the cracks present in stone masonry base of east abutment and pier 2 (Reference 2007 ConnDOT Inspection).

ii) The scour condition rating of the bridge is poor. Continue to monitor the channel scour, which has lowered the stream bed especially at pier 2.

31

BIN 05742 Middletown Avenue over Quinnipiac River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Multi-Girders

Year of Construction: 1989 Age: 19 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 05/01/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Satisfactory

Superstructure: Good Channel: Fair

Substructure: Good Deck Geometry: Excellent

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 66.7 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 05742 Middletown Avenue over Quinnipiac River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks and patch potholes in bituminous concrete pavement at bridge and approaches (250 LF, photo log 8 & 9).

ii) Provide a bituminous concrete ramp at settled areas of south and north approach pavements (3 Tons, photo log 7 & 12).

iii) Remove weed growth and debris present on bridge and approach sidewalks (photo log 4).

iv) Remove and reconstruct the settled/cracked area of SW approach sidewalk (20 SF, photo log 4).

v) Provide weep pipe extensions below girder bottom flange to prevent water draining onto prestressed concrete beams (18 EA).

vi) Tighten 2 of 4 loose anchor bolt nuts at utility pole mounted on pier at west end (2 EA, photo log 25).

vii) Install Bridge Identification Number on both parapets (2EA).

viii) Install missing nuts at SW MBR attachment to concrete end block/foundation (4 EA, photo log 2).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Reconstruct the cracked/deteriorated saw & seal deck joint at both abutments (96 LF, photo log 7 & 12).

Estimated Cost $2,500 (Year2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) Continue monitoring the cracks present at the pier ends of prestressed concrete beams.

ii) Continue monitoring the channel scour conditions. The underwater inspections have been noting moderate to extensive changes to channel bottom elevations.

32

BIN 03752 Olive Street over Amtrak Railroad

1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Multi-girders

Year of Construction: 1998 Age: 10 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 06/09/05

b. Component Condition Rating

Deck: Very Good Bridge Approach Condition: Very Good

Superstructure: Good Channel: NA

Substructure: Good Deck Geometry: Critical

Culverts: NA Under Clearance: Severe

c. Load Rating

Bridge Rating: 66.9 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 03752 Olive Street over Amtrak Railroad

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement at west approach to the bridge (80 LF, photo log 1).

ii) Provide a patch for spalled and settled concrete at NW approach sidewalk (1 CY, photo log 6).

iii) Provide a bituminous/concrete ramp to eliminate tripping hazard at settled NE & SE approach sidewalks (20 SF, photo log 12).

iv) Remove light graffiti present on rail panels & parapets (75 SF, photo log 17).

v) Replace missing hand hole cover at light pole which has resulted in exposed wires (1EA, photo log 18).

vi) Tighten loose timber rubrail attachment to 3rd post from bridge at SW MBR (1 EA).

vii) Install Bridge Identification Number on both parapets (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace the asphaltic plug deck joint at east abutment (44 LF, photo log 11).

ii) Replace impact damaged (minor) portion of SW MBR (20 LF, photo log 14).

iii) Replace the SE MBR and attach it to parapet to prevent a gap and eliminate a traffic safety hazard (25 LF, photo log 13).

Estimated Cost $ 12,000 (Year 2009)

c. Long Term Considerations

i) None.

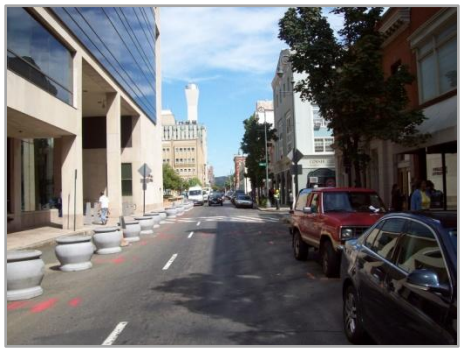
Estimated Cost $ NA

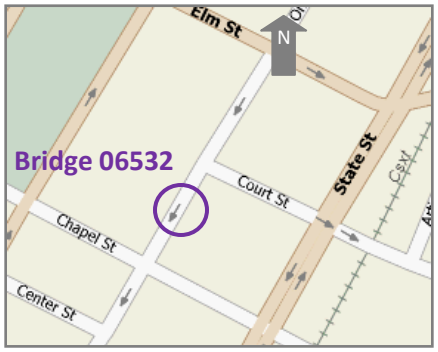
Funding Options NA

5. Follow-up Required None.

33

BIN 06532 Orange Street over Government Center Access Road





1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Reinforced Concrete Slab

Year of Construction: 1975 Age: 33 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 08/08/07

b. Component Condition Rating

Deck: Satisfactory Bridge Approach Condition: Satisfactory

Superstructure: Satisfactory Channel: NA

Substructure: Good Deck Geometry: Good

Culverts: NA Under Clearance: Poor

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

BIN 06532 Orange Street over Government Center Access Road

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Repair the depressed areas and potholes in the bituminous concrete pavement at intersection of Court Street and Orange Street (1 TON, photo log 5 & 6).

ii) Patch spalled and hollow sounding concrete in the underside of concrete slab (2 CY, photo log 1 and 10).

iii) Seal the joint at the west end of slab to prevent water leakage which results in deterioration to the concrete slab.

iv) Install Bridge Identification Number at abutments since it is difficult to identify the bridge in the tunnel (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

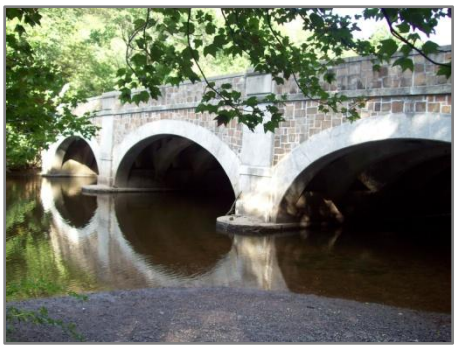
Estimated Cost $ NA

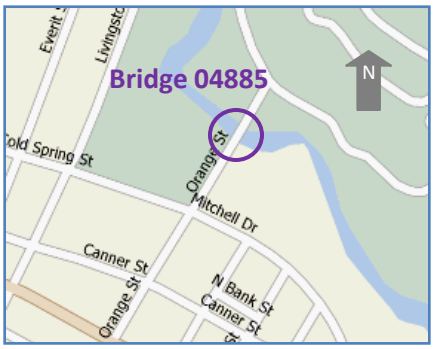
Funding Options NA

5. Follow-up Required None.

34

BIN 04885 Orange Street #1 over Mill River





1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Deck Arch

Year of Construction: 1950 Age: 58 years

Year of Rehabilitation: 1991 Age: 17 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/20/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Good

Superstructure: Satisfactory Channel: Good

Substructure: Good Deck Geometry: Fair

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

BIN 04885 Orange Street #1 over Mill River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Provide bituminous/concrete ramp at settled NW, NE & SE approach sidewalks to prevent tripping hazard (30 SF, photo log 3).

ii) Install extension to weep pipe below arch ribs to prevent water draining onto superstructure (24 EA, photo log 24).

iii) Install bridge identification number on both parapets (2 EA).

iv) Patch spalled concrete on west parapet at south end (<1 CY, photo log 14).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Install a saw & seal deck joint at both abutments to prevent pavement cracking (68 LF, photo log 4).

ii) Patch delaminated and hollow sounding areas of arch ribs (2 CY, photo log 21, 22, 26).

iii) Seal open cracks in arch ribs by injecting epoxy (110 LF).

iv) Patch delaminated & scaled areas in abutment stems & pier (0.5 CY).

Estimated Cost $ 90,000 (Year 2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

5. Follow-up Required

i) Perform a load rating capacity of bridge and update current information which is based on judgment. This may improve overall bridge rating.

ii) The need for permits and containment to perform repairs over Watercourse will need to be determined.

35

BIN 06724 Pedestrian Walkway over Route 10

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Thru Truss

Year of Construction: 2006 Age: 2 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT (Exterior of span 2 over Rte. 34 only)

Inspection Frequency: 24 Months Last Inspection Date: 06/04/08

b. Component Condition Rating

Deck: Not Available Bridge Approach Condition: NA

Superstructure: Not Available Channel: NA

Substructure: Very Good Deck Geometry: NA

Culverts: NA Under Clearance: Satisfactory

c. Load Rating

Bridge Rating: NA Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Very Good

BIN 06724 Pedestrian Walkway over Route 10

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)
i) None
Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)
i) None
Estimated Cost $ NA

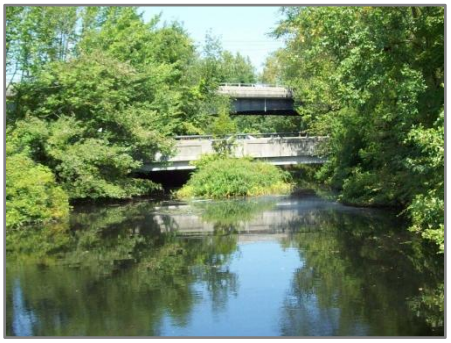
c. Long Term Considerations
i) None
Estimated Cost $ NA
Funding Options NA

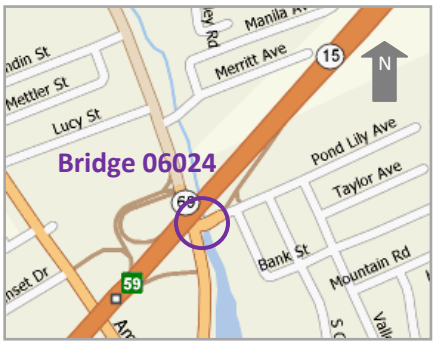
5. Follow-up Required

i) Access under the panels and inspect the bridge deck and the truss bottom chords.
ii) Schedule a bridge inspection program in accordance with existing agreements between the City and ConnDOT since only exterior portions of Span 2 over Rt 34 are inspected by ConnDOT.

36

BIN 06024 Pond Lily Avenue over West River





1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1991 Age: 17 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/10/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Good

Superstructure: Good Channel: Good

Substructure: Good Deck Geometry: Critical

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 68.5 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 06024 Pond Lily Avenue over West River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Patch potholes and depressed areas in bituminous concrete pavement on the bridge near the pier and along the west approach roadway centerline (photo log 5).

ii) Clear sand debris and weed growth at south sidewalk and vegetation encroachment on both bridge parapets (photo log 1).

iii) Provide a bituminous/concrete ramp at settled SW approach sidewalk to prevent a tripping hazard (10 SF, photo log 11).

iv) Install Bridge Identification Number on the parapets (2 EA).

v) Patch the spalled and scaled concrete at SE retaining wall and the pier cap under Girder G3 (0.5 CY).

vi) Clear the dead tree and debris from the channel, both upstream and downstream of the bridge.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Install a saw and seal deck joint at the pier which is currently paved over to eliminate pavement cracking (28 LF, photo log 5).

Estimated Cost $ 750.00 (Year 2009)

c. Long Term Considerations

i) None.

Estimated Cost $ NA

Funding Options NA

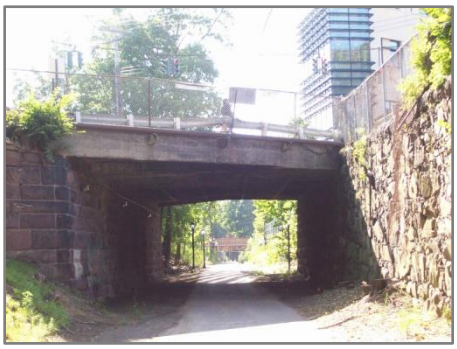
5. Follow-up Required

i) Confirm with the Regional Water Authority whether the 1 missing support bracket in both spans are required per contract Design Plans (Reference 2007 ConnDOT Inspection).

ii) This bridge is eligible for funding under ConnDOT's Federal Local Bridge program due to roadway geometrics deemed "Basically intolerable requiring high priority of replacement". However, this bridge is in "good" structural condition.

37

BIN 03997 Prospect Street over Canal Line Railroad (Abandoned)



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Girder Floorbeam (Encased in Concrete)

Year of Construction: 1929 Age: 79 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 12 Months Last Inspection Date: 04/26/07

b. Component Condition Rating

Deck: Poor Bridge Approach Condition: Fair

Superstructure: Poor Channel: NA

Substructure: Satisfactory Deck Geometry: Fair

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Poor

BIN 03997 Prospect Street over Canal Line Railroad (Abandoned)

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Remove loose concrete from underside of bridge deck or provide timber ceiling over walkway to prevent injuries to pedestrians using pathway (photo log 13).

ii) Replace or barricade the damaged MBR and chainlink fence along west sidewalk of Prospect Street and along canal street to prevent a traffic safety hazard.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None. See "Follow-up required" below.

Estimated Cost $ NA

c. Long Term Considerations

i) None. See "Follow-up required" below.

Estimated Cost $ NA

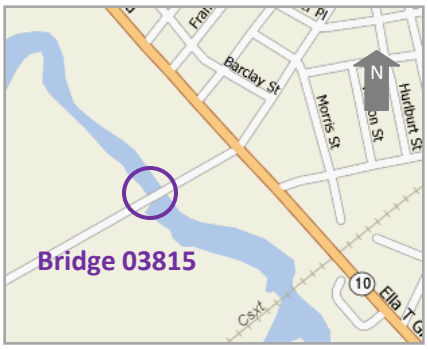
Funding Options NA

5. Follow-up Required

i) The bridge is in poor condition and is being inspected by ConnDOT annually. The bridge replacement is scheduled to begin in spring 2009. Every effort must be made to keep the schedule.

38

BIN 03815 Spring St. (West Haven)/Washington Ave. (New Haven) over **West River**



1. **Ownership Details**
(Jointly with City of West Haven)
Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. **Bridge Description**

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 2001 Age: 7 years

Year of Rehabilitation: NA Age: NA

3. **Bridge Condition**

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 12/07/07

b. Component Condition Rating

Deck: Very Good Bridge Approach Condition: Very Good

Superstructure: Very Good Channel: Satisfactory

Substructure: Satisfactory Deck Geometry: Serious

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 42.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

BIN 03815 Spring St. (West Haven)/Washington Ave. (New Haven) over **West River**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Clear sand, debris, and vegetation growth from bridge and approach sidewalks (photo log 5, 10, & 12).

ii) Provide bituminous/concrete ramp at settled NW approach sidewalk to prevent tripping hazard (10 SF, photo log 9).

iii) Remove minor graffiti present on bridge parapets.

iv) Patch spalled concrete on abutment stem and cheekwalls (<1 CY, photo log 14).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

Estimated Cost $ NA

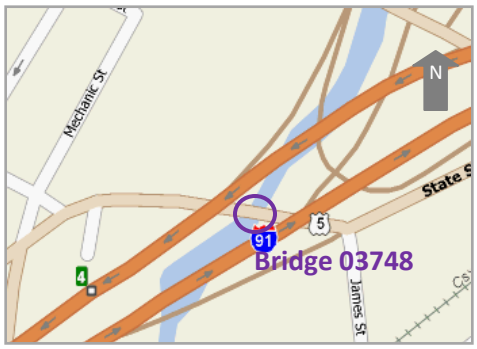
Funding Options NA

5. Follow-up Required

i) Monitor the condition of spalled concrete in bottom flange of Girder G1 (South fascia deck unit) at east abutment. Subsequent ConnDOT inspection may downgrade the superstructure condition rating.

39

BIN 03748 State Street over Mill River



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Steel Multi-Girder (encased in concrete)

Year of Construction: 1900 Age: 108 years

Year of Rehabilitation: 1920 Age: 88 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 6 Months Last Inspection Date: 01/09/08

b. Component Condition Rating

Deck: Fair Bridge Approach Condition: Fair

Superstructure: Poor Channel: Severe

Substructure: Critical Deck Geometry: Fair

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 26.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Critical

39

BIN 03748 State Street over Mill River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) None.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

Estimated Cost $ NA

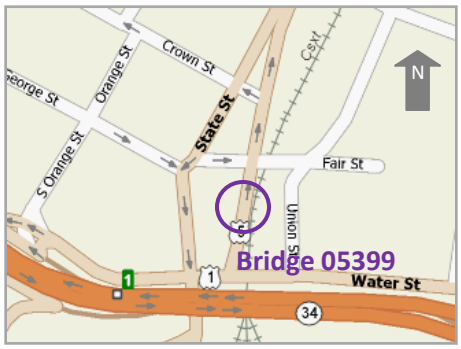
Funding Options NA

5. Follow-up Required

i) The bridge replacement design is complete and City is awaiting funding from ConnDOT to begin construction. Efforts must be made to speed up the process.

40

BIN 05399 State Street North over Union Station Pump House



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Girders

Year of Construction: 1968 Age: 40 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 08/09/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Satisfactory

Superstructure: Satisfactory Channel: NA

Substructure: Satisfactory Deck Geometry: Satisfactory

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 40.0 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

40

BIN 05399 State Street North over Union Station Pump House

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Clean and paint rusted steel bracket/bearing at pier 1 (50 SF, photo log 17).

ii) Patch the hollow sounding concrete and spalled area on column 3 At pier 1 (<0.5 CY, reference 2007 ConnDOT inspection).

iii) Seal cracks in bituminous concrete pavement (1000 LF, photo log 4) and patch potholes.

iv) Patch the spalled and scaled concrete at west sidewalk and east safety walk (< 1 CY, photo 3).

v) Remove the posts for the already removed parking meters on west sidewalk (photo log 5).

vi) Chip the concrete from west parapet ends in contact at pier 1 (photo log 15).

vii) Clean the clogged scupper grates (4 EA, photo log 9).

vii) Repair the drain pipe in span 8 near north abutment (reference 2007 ConnDOT inspection).

ix) Install Bridge Identification Number on parapets (2 EA).

x) Replace missing conduit access cover at west parapet (reference 2007 ConnDOT inspection).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace the failed pourable seal deck joint at all piers to prevent water leakage and deterioration to bridge superstructure (252 LF, photo log 6, 8 & 10).

Estimated Cost $ 60,000 (Year 2009)

c. Long Term Considerations

i) Roadway resurfacing, drainage, and safety improvements.

Estimated Cost $ 810,000 (Year 2009)

Funding Options City/COG

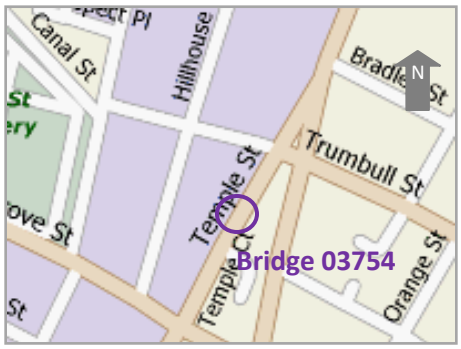
5. Follow-up Required

i) Replace failed deck joint at the piers on an urgent basis to prevent water leakage and deterioration to bridge superstructure.

Under construction

41

BIN 03754 Temple Street over Canal Line Railroad (Abandoned)



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Beams

Year of Construction: 2008 Age: 0

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months (After Constr.) Last Inspection Date: 2/15/08

b. Component Condition Rating

Deck: NA Bridge Approach Condition: NA

Superstructure: NA Channel: NA

Substructure: NA Deck Geometry: NA

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: TBD Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☐

Overall Bridge Rating: NA - Bridge under construction

BIN **03754 Temple Street** over **Canal Line Railroad (Abandoned)**

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)
i) None. Bridge under construction.
Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)
i) None. Bridge under construction
Estimated Cost $ NA

c. Long Term Considerations
i) None. Bridge under construction.
Estimated Cost $ NA
Funding Options NA

5. Follow-up Required
i) Update bridge condition information after completion of construction.

42

BIN 05259 Valley Street #1 over West River

1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1983 Age: 25 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/10/07

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Very Good

Superstructure: Good Channel: Good

Substructure: Good Deck Geometry: Poor

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 52.8 Tons (INV) Meets AASHTO Standards: Yes ☒ No ☐

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

BIN 05259 Valley Street #1 over West River

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Provide a saw and seal deck joint at both abutments to prevent pavement cracking (72 LF, photo log 10).

ii) Patch spalled concrete at NW & NE approach sidewalks (<1 CY, photo log 11).

iii) Provide concrete/bituminous ramp at all 4 settled approach sidewalks to prevent tripping hazard (40 SF, photo log 7).

iv) Install Bridge Identification Number on both parapets (2 EA).

v) Remove vegetation growth encroaching on curbs and approach sidewalks (photo log 6).

vi) Remove/trim trees butting against the bridge superstructure at NW & SE corners (photo log 19).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace existing guiderails which are not attached to parapets and are a safety hazard with MBR meeting current standards (4 EA, photo log 23).

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) None.

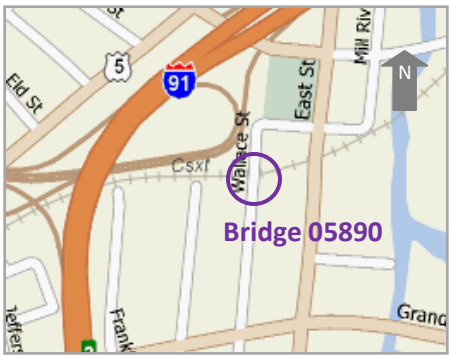
Estimated Cost $ NA

Funding Options NA

5. Follow-up Required None.

43

BIN 05890 Wallace Street over Amtrak Railroad



1. Ownership Details

Ownership: ☐ City ☒ Orphan

Maintenance Responsibility: ☐ Entire Bridge
☒ Non-Structural Components

2. Bridge Description

Bridge Type: Prestressed Concrete Deck Units

Year of Construction: 1906 Age: 102 years

Year of Rehabilitation: 1989 Age: 19 years

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 06/20/05

b. Component Condition Rating

Deck: Good Bridge Approach Condition: Good

Superstructure: Good Channel: NA

Substructure: Satisfactory Deck Geometry: Satisfactory

Culverts: NA Under Clearance: Critical

c. Load Rating

Bridge Rating: 29.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☒ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

BIN 05890 Wallace Street over Amtrak Railroad

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement at bridge and north approach (photo log 18 & 21).

ii) Remove trash & debris present in the vicinity of utilities at both sidewalks (photo log 18).

iii) Remove weeds & brush overgrowth encroaching on both sidewalks (photo log 6 & 12).

iv) Prune tree branches at all 4 approach corners which are encroaching over sidewalks and possibly impacting overhead utilities (photo log 16).

v) Provide bituminous/concrete ramp at settled SE & SW approach sidewalks (20 SF, photo log 14 &15).

vi) Replace missing blockout and reattach SW MBR with posts (2 EA, log 11).

vii) Install Bridge Identification Number (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace chain link fence with solid fence/encasement to protect utilities and prevent trash accumulation at both sidewalks (150 LF, photo log 8).

ii) Replace saw & seal deck joint at both abutments (72 LF, photo log 9 & 10).

Estimated Cost $ 20,000 (Year 2009)

c. Long Term Considerations

i) Roadway resurfacing and safety improvements (5-10 years).

Estimated Cost $ 440,000 (Year 2009)

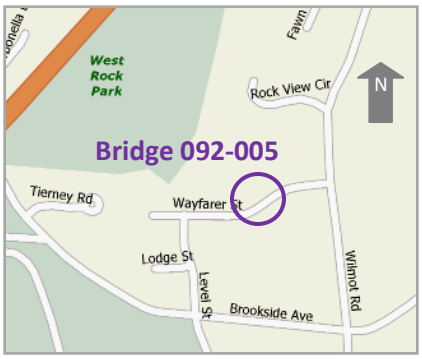
Funding Options City/COG

5. Follow-up Required

i) Bridge has not been inspected by ConnDOT in 2007 due to unavailability of flagmen. It is likely that condition rating of the deck (non-structural components) will be downgraded and this information should be updated by the city.

44

BIN 092005 Wayfarer Street over Wintergreen Brook



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Concrete Pipe Culverts

Year of Construction: 1970 Age: 38 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: City of New Haven

Inspection Frequency: Not Available Last Inspection Date: 01/10/91 (ConnDOT) 09/18/08 (City)*

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory*

Superstructure: NA Channel: Good*

Substructure: NA Deck Geometry: Excellent*

Culverts: Satisfactory* Under Clearance: NA

c. Load Rating

Bridge Rating: Not Available Tons (INV) Meets AASHTO Standards: Yes ☐ No ☐

Basis of Rating: Calculations ☐ Judgment ☐ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory*

BIN 092005 Wayfarer Street over Wintergreen Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement and settled area around manhole, west of bridge (photo log 2).
ii) Remove & reconstruct an upheaved section of south sidewalk to prevent tripping hazard(20 SF, photo log 19).
iii) Replace damaged/missing chain link fence at south headwall, SE & SW wingwalls (40 LF, photo log 18).
iv) Patch spalled/cracked concrete in south headwall (<1 CY, photo log 17).
v) Remove tree branch & debris obstructing the water flow at inlet end of west pipe (photo log 14).
vi) Patch spalls in pipes (<1 CY, photo log 10).
vii) Install Bridge Identification Number (2 EA).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) None.

Estimated Cost $ NA

c. Long Term Considerations

i) None.

Estimated Cost $ NA

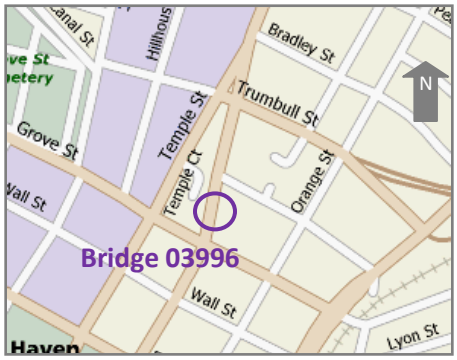
Funding Options NA

5. Follow-up Required

i) Determine & update the load capacity rating of the bridge.
ii) Schedule safety inspection of the bridge on a biennial program since it is not inspected by ConnDOT.

45

BIN 03996 Whitney Avenue over Canal Line Railroad (Abandoned)



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Stone Masonry Arch

Year of Construction: 1885 Age: 123 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 07/16/07

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Fair

Superstructure: Good Channel: NA

Substructure: Good Deck Geometry: Very Good

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Good

45

BIN 03996 Whitney Avenue over Canal Line Railroad (Abandoned)

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal the cracks (300 LF, photo log 11) and patch the settled areas (photo log 17) in bituminous concrete pavement at the bridge and approaches.

ii) Seal the cracks in the bituminous concrete east sidewalk (30 LF, photo log 13).

iii) Install Bridge Identification Numbers (2 EA).

iv) Lock the gate present at west end of the arch to prevent loitering & eliminate any fire hazards. Consider installing a gate at the east end of the arch similar to the west end.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Replace the chain link fence at east sidewalk with bridge rail to meet current standards and extend it to both the approaches. (45 LF, photo log 18).

Estimated Cost $ 7,000 (Year 2009)

c. Long Term Considerations

i) Roadway resurfacing with drainage and safety improvements (2-5 years).

Estimated Cost $ 320,000 (Year 2009)

Funding Options City/COG

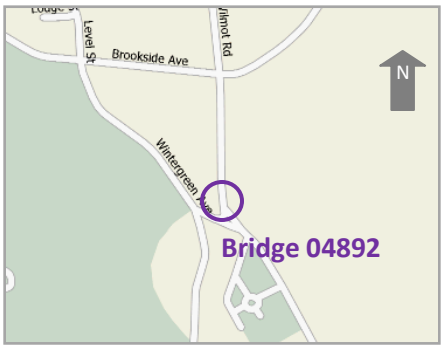
5. Follow-up Required

i) Investigate the feasibility to realign the unprotected 16” diameter water main located along the east curb.

ii) Consider listing the bridge in the National Register of Historic Places.

46

BIN 04892 Wilmot Road over Wintergreen Brook



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Reinforced Concrete Box Culvert

Year of Construction: 1952 Age: 56 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 05/07/07

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Good

Superstructure: NA Channel: Poor

Substructure: NA Deck Geometry: Very Good

Culverts: Fair Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

BIN 04892 Wilmot Road over Wintergreen Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement (250 LF, photo log 14 & 15).

ii) Provide a bituminous/concrete ramp at settled SW, NW & NE approach sidewalks to prevent tripping hazard (30 SF, photo log 9).

iii) Straighten/repair the bent west picket rails at north end & reweld the pickets to bottom rail (1 EA, photo log 18).

iv) Paint the bridge rail system.

v) Clean the clogged catch basin grates at NW & NE approach (2 EA, photo log 19).

vi) Install Bridge Identification Numbers (2 EA).

vii) Remove tree limbs & debris from channel, downstream of culvert (photo log 8).

viii) Remove vegetation and build up of silt & debris at inlet & outlet of Box 2 and inlet of Box 1 preventing flow onto Box 2 and creating local scour pockets (photo log 24).

ix) Remove buildup of sand & silt inside Box 2 preventing flow of water (photo log 32).

x) Replace damaged chain link fence at SW approach (10 LF, photo log 16).

xi) Repair delaminated, spalled, & scaled concrete present at roof, floor slabs and culvert headwalls (2 CY, photo log 25-28).

xii) Provide riprap at the inlet and outlet ends of Box 1 to prevent undermining of the exposed floorslab/cut-off wall due to local scour (3 CY, photo log 23 & 34). Permit requirement will need to be determined.

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Remove and reconstruct both concrete sidewalks over bridge & approaches (photo log 5 & 10).

ii) Consider installing MBR's at all 4 approach corners.

Estimated Cost $ 29,000 (Year 2009)

c. Long Term Considerations

i) Bridge Replacement (5-10 years)

Fair

46

BIN **04892 Wilmot Road** over **Wintergreen Brook**

Estimated Cost $ 670,000 (Year 2009)

Funding Options ConnDOT - Federal Local Bridge Program

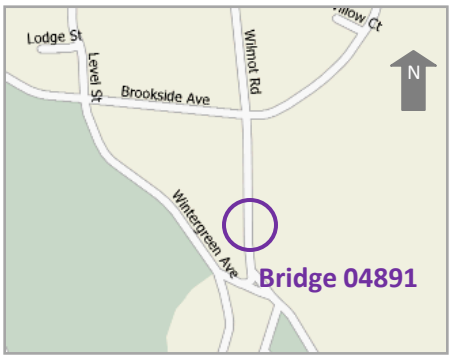
5. Follow-up Required

i) Monitor the condition rating of culvert (currently fair) and the sufficiency rating (SR) of bridge (currently 85.2). File funding eligibility application with ConnDOT when overall rating is downgraded to "Poor" or SR is determined to be less than 80.0

ii) Determine load capacity ratings and update information.

47

BIN 04891 Wilmot Road over Town Farm Brook



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Reinforced Concrete Box Culvert

Year of Construction: 1951 Age: 59 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 05/07/07

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory

Superstructure: NA Channel: Fair

Substructure: NA Deck Geometry: Very Good

Culverts: Fair Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Fair

BIN 04891 Wilmot Road over Town Farm Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Seal cracks in bituminous concrete pavement at bridge & approaches (275 LF, photo log 21).
ii) Install Bridge Identification Numbers (2 EA).
iii) Remove fallen tree & branches present at inlet end.
iv) Clear debris from CB grates at all 4 approach corners (4 EA, photo log 17).
v) Remove silt buildup along entire length of Cell 3 and partially in Cells 1 & 2 (photo log 13).
vi) Install riprap at inlet end of Cell 1 & 2 to cover the local scour pocket exposing the floor slab (1 CY).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Remove and reconstruct bridge & approach sidewalks (750 SF, photo log 16 & 27).
ii) Install new bridge rail (70 LF, photo log 14).
iii) Repair delaminated and honeycombed concrete at cell sidewalls and headwalls (1 CY, photo log 7-10).
iv) Consider installing guiderails at all approach corners meeting current standards (4 EA).

Estimated Cost $ 60,000 (Year 2009)

c. Long Term Considerations

i) Bridge replacement (2-5 years).

Estimated Cost $ 810,000 (Year 2009)
Funding Options Federal Local Bridge Program (ConnDOT)

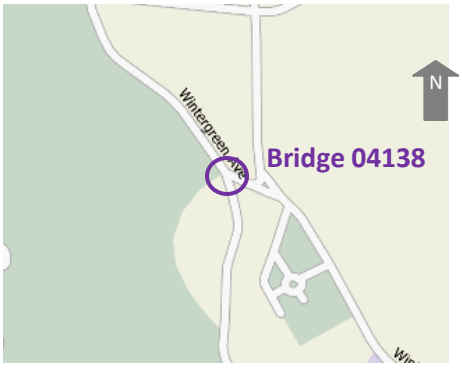
5. Follow-up Required

i) The repairs to bridge rail system should be performed on an urgent basis to rectify the "serious" condition rating and eliminate traffic hazard (refer to BRI-18).
ii) Monitor condition rating of culvert (currently fair) and sufficiency rating (SR) of bridge (currently 85.14). File funding eligibility application with ConnDOT when culvert condition rating is downgraded to "Poor" or SR is determined to be less than 80.0.
iii) Determine load capacity rating and update information.

Satisfactory

48

BIN 04138 Wintergreen Avenue over Town Farm Brook



1. Ownership Details

Ownership: ☒ City ☐ Orphan

Maintenance Responsibility: ☒ Entire Bridge
☐ Non-Structural Components

2. Bridge Description

Bridge Type: Stone Masonry Arch

Year of Construction: 1890 Age: 118 years

Year of Rehabilitation: NA Age: NA

3. Bridge Condition

a. Inspection Agency: ConnDOT

Inspection Frequency: 24 Months Last Inspection Date: 04/09/07

b. Component Condition Rating

Deck: NA Bridge Approach Condition: Satisfactory

Superstructure: Good Channel: Fair

Substructure: Good Deck Geometry: Critical

Culverts: NA Under Clearance: NA

c. Load Rating

Bridge Rating: 34.0 Tons (INV) Meets AASHTO Standards: Yes ☐ No ☒

Basis of Rating: Calculations ☐ Judgment ☒ Is Bridge Posted: Yes ☐ No ☒

Overall Bridge Rating: Satisfactory

Satisfactory

48

BIN 04138 Wintergreen Avenue over Town Farm Brook

4. Bridge Improvements

a. Maintenance Recommendations (By DPW)

i) Install Bridge Identification Numbers on both parapets (2 EA).

ii) Trim/cut exposed portions of keystones near parapet which is a safety hazard (3 locations, photo log 2).

iii) Provide riprap behind all wingwall embankments to prevent erosion (11 CY, photo log 26).

iv) Remove fallen trees in the channel upstream and downstream of the bridge (5 EA, photo log 5).

Estimated Cost $ 0.00

b. Short Term Repair Recommendations (By Contractor)

i) Repoint cracked/missing mortared joints (30 LF, photo log 19).

ii) 3 of 4 approach corners have impact damage to MBR. Replace all 4 approach corners with MBR meeting current standards (4 EA, photo log 8).

Estimated Cost $ 22,000 (Year 2009)

c. Long Term Considerations

i) Full depth roadway, drainage & safety improvements (2-5 years).

Estimated Cost $ 160,000 (Year 2009)

Funding Options City/COG

5. Follow-up Required

i) Consider listing the bridge in the National Register of Historic Places.

ii) Monitor condition of pavement and drainage. Accelerate reconstruction if needed.