



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

COPY

June 7, 2002

Operations Manager
Lower Connecticut River Basin Office
US Army Corps of Engineers NED
6 Athol-Richmond Road
Royalston, Massachusetts 01368-8900
Phone (978) 249-2547
Fax (978) 249-3680

Honorable Dan H. Mylott
Mayor of Fitchburg
718 Main Street
Fitchburg, MA 01420



Dear Mayor Mylott:

I conducted the semi-annual inspection of the federally constructed flood protection project in Fitchburg on May 29, 2002. I have enclosed a detailed inspection report for your review.

The project is in poor condition, with no changes since the October 23, 2001 inspection. Little or no maintenance has been accomplished. Vegetation and shoals have reduced the North Nashua River channel capacity. Due to a loss of carrying capacity, storms of ever decreasing intensity may pose a flood threat to the city.

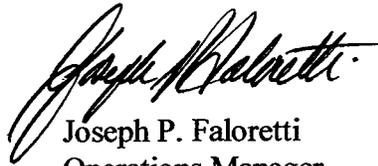
The Corps has nearly completed a Hydrological Study to more precisely measure present channel capacity and identify the most critical areas of concern. In addition, the Corps and the city have started a Section 1135 Study in conjunction with Fitchburg's riverfront park proposal, to look at ways of improving wildlife habitat in the North Nashua River as it passes through Fitchburg. The studies should provide important information that may help the City to optimize maintenance of the project while minimizing ecological disturbance.

The Corps' studies are only one step in striking a balance between flood control and environmental concerns. A collaborative effort among all agencies and groups having regulatory or special interest in the river is required to realize these objectives. The Corps is committed to continuing the process.

The City of Fitchburg must identify and outline short and long-term maintenance strategies based on inspection report recommendations and the Corps' hydrological and Section 1135 studies. The short and long-term strategies should then be discussed with the Fitchburg Conservation Commission, the Fitchburg Planning and Public Works Departments, the Nashua River Watershed Association, the Massachusetts Department of Environmental Management, Massachusetts Department of Environmental Protection and the Corps of Engineers. Following discussions, the strategies must be implemented so that the project may be properly maintained.

Should you have any questions or wish to discuss this matter, please give me a call at (978) 249-2547.

Sincerely,



Joseph P. Faloretti
Operations Manager
Lower Connecticut River Basin

Enclosures
Copies Furnished:

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Commissioner of Public Works
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Director & Chief Engineer
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LOCAL FLOOD PROTECTION PROJECT INSPECTION REPORT

Project: **Fitchburg, Massachusetts**

Maintaining Agency: **City of Fitchburg, Department of Public Works**

Type Inspection: Semi-Annual Staff 90 Day Interim

River Basin: **Lower Connecticut**

Date of Inspection: **29 May 2002**

Feature	Sat	Unsat	Deficiencies
PUMPING STATIONS - STRUCTURES			N/A
INTERIOR			
EXTERIOR			
PUMPS - MOTORS - ENGINES			N/A
TRIAL OPERATED			
GENERAL CONDITION			
POWER SOURCE			
INSULATION TESTS			
METAL INTAKES/OUTLETS			
GATE VALVES			
GATES - DRAINAGE STRUCTURES			N/A
TRIAL OPERATED			
GENERAL CONDITION			
LUBRICATION			
DIKES - DAMS			N/A
GENERAL CONDITION			
SLOPES/EROSION			
SAND BOILS/CAVING			
TRESPASSING			
SLOPE PROTECTION			
DRAINS			
STOP-LOGS - LOG BOOM			N/A
CONDITION OF LOGS			
AVAILABILITY OF LOGS			
HIGHWAY SLOTS			
STORAGE FACILITIES			
CHANNELS - OUTLET WORK CHANNEL			
BANKS		X	See remarks.
OBSTRUCTION CONTROL		X	See remarks.

FORM

Feature	Sat	Unsat	Deficiencies
CONCRETE STRUCTURES			
SURFACE		X	See remarks.
SETTLEMENT		N/A	
JOINTS		N/A	
DRAINS			
MISCELLANEOUS			
EMERGENCY OPERATIONS PLANS			
EMERGENCY EQUIPMENT			
SEMI-ANNUAL REPORT		X	No report submitted.

Inspection Party: James Shuris, Commissioner of Public Works, Fitchburg
Joseph Faloretti, Operations Manager, Lower Connecticut River Basin, COE
Jeffrey Mangum, Project Manager, Tully Lake, COE

Photographs Taken: See attached photographs

Remarks & Additional Comments:

(Indicate here observations, discussions, specific feature deficiencies, recommendations and any other pertinent information. Use continuation sheet if necessary.)

See attached sheets.

X ALL APPLICABLE ITEMS. IF UNSAT INDICATE SPECIFIC DEFICIENCIES. INDICATE IF NOT APPLICABLE.

DATE: 05 JUN 02	INSPECTED BY: TYPE NAME & TITLE Joseph P. Faloretti Operations Manager, Lower Connecticut River Basin	SIGNATURE 
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FITCHBURG, MASSACHUSETTS - LOCAL PROTECTION PROJECT

SEMI-ANNUAL INSPECTION

29 May 2002

GENERAL COMMENTS

Virtually no maintenance of the project has been accomplished since the last inspection and for the past several years.

The following conditions were noted during the inspection. More specific recommendations will be provided after the Corps' completes a hydrological study of the North Nashua River channel and a Section 1135 Study:

NOTE: Descriptions in parentheses coincide with stations and work area designations on General Plans 1, 2 and 3 of North Nashua River Channel Rehabilitation, Fitchburg, Massachusetts Operations and Maintenance Manual February 1982.

1. **Project start.** (Several hundred feet upstream of Oak Hill Road Bridge, near station 580+00)

Woody vegetation is present on the riprap slopes and stone gabions and should be removed.

2. **Oak Hill Road Bridge.** (Approximately 300 feet downstream of station 575+00)

Looking upstream - Significant vegetation, including small trees, is present on both sides of the channel. The shoal on the left bank immediately above and under the bridge appears to be expanding (see photograph # 1).

Looking downstream - The shoal on the left bank appears to be expanding. The shoal should be closely monitored. **Vegetation covers both banks.**

3. **Daniel Street Bridge.** (Approximately 300 feet downstream of station 565+00)

Looking upstream - A shoal is present in the south (left) half of the channel above the old railroad bridge. This shoal should be closely monitored. **Small trees are growing in both sides of the channel.**

Looking downstream - Both banks are covered with undesirable vegetation. **Clearing of vegetation should be concentrated on the lower 20 feet of the banks** (see photograph # 2).

4. **Adjacent to the McDonald's Parking Lot.** (Work areas "D" and "E" Located on the left bank downstream of Daniel Street Bridge.)

Vegetation within the banks of the channel along both sides of the river is 10 to 20 feet high. **Clearing should be concentrated on the lower 20 feet of the banks on both sides of the**

river.

5. **Kimball Street Bridge.** (Station 550+00)

Looking upstream – **Heavy brush growth is present along both banks.** A shoal on the right bank should be closely monitored (see photograph # 3).

Looking downstream – **Vegetative growth is present on the east (right) bank.**

6. **Upper River Street Bridge.** (Work area "F")

Looking upstream - **Trees are growing out of the walls along both sides of the river. A large Poplar is growing near the edge of the water.**

Looking downstream - **Significant vegetation is present along both banks** (see photograph # 4).

7. **Behind The Former Premier Box Company.** Located on the right bank. (Station 550+00 to 545+00)

Undesirable vegetation is present on both banks. The river channel should be kept clear to maintain the project design channel capacity. A conservation group has proposed development of a river walk between the Upper River Street Bridge and the Sheldon Street Bridge.

8. **Sheldon Street Bridge.** (Work area "G")

Looking upstream - **Undesirable woody vegetation and shoals are present on both banks** (see photograph # 5).

Looking downstream - **Brush, trees, and other undesirable vegetation are present on both banks.** A shoal is present on the left bank.

9. **Lower River Street Bridge.** (Work area "I")

Looking upstream - **Vegetative growth is present along both banks** (see photograph # 7).

Looking downstream - **A large shoal is present on the left bank. Vegetation is present on both banks** (see photograph # 6).

10. **Circle Street Bridge.** (Station 510+00)

Looking upstream - **Trees and brush are growing in the training walls along both banks. There is a shoal on the left side of the channel.**

Looking downstream - **Shoals are present on the both sides of the channel and woody vegetation has become established on the shoals.**

11. **Upper Rollstone Street Bridge.** (Station 505+00) This bridge near the DPW building is closed.

Looking upstream - **Significant vegetative growth is present along both banks of the river. Trees are growing along the bridge abutment in a shoal area by the left bank. The shoal obstructs the north half of the channel under the bridge.**

Looking downstream - **The river channel narrows at this point and should be kept completely free of obstructions. There is significant growth of trees, brush and other vegetation in the concrete lining along the left side.**

12. **Putnam Street Bridge.** (Approximately 300 feet downstream of station 485+00)

Looking upstream – **There is heavy growth of trees and vegetation in the training walls along both sides of the river, extending well upstream of the railroad bridge. This is also a narrow stretch of the river and should be kept free and open. A shoal is present on the north (right) bank approximately 100 yards above the railroad bridge. A shoal has developed under the right span of the railroad bridge. A large shoal is present in the center of the channel about 200 yards upstream of the railroad bridge. A large elm is growing on a shoal at the center bridge pier. There is shoaling at the railroad bridge center abutment.**

Looking downstream - **There is heavy growth of trees, brush and other vegetation within the training walls and riprap along both sides of the river extending beyond the footbridge, which is about 300 feet downstream of Putnam Street. A large tree is growing next to the bridge abutment. Also, there are trees leaning over the channel approximately 150' from the bridge at the right downstream embankment. A riverfront park has been proposed for the location just downstream of the bridge. The city should closely coordinate this proposal with the Corps of Engineers to insure that the proposal will not negatively impact the function of the project.**

12. **Railroad Bridge** (Looking upstream from the Putnam Street Bridge.)

There are trees and shrubs growing in the channel in the vicinity of the railroad bridge.

13. **Laurel Street Bridge.** (Work areas "O", "P")

Looking upstream - **Major shoaling has taken place in the entire area of the upstream railroad crossing. A large shoal, which is nearly covered with vegetation, restricts the western span and half of the center span. This is a significant restriction, which has decreased the discharge capacity of the channel by nearly 33% and needs to be corrected promptly (see photograph # 8). The shoals and trees should be removed.**

Looking downstream - **The channel narrows downstream of a manhole on the right bank, and in this narrow stretch there is considerable growth of trees, brush and vegetation along both banks.**

14. **Water Street Bridge.** (Station 460+00)

Looking upstream – **There is a large shoal about 100 feet upstream of the bridge along the north (right) bank near the floodwall. Significant tree growth extends along the south bank.** Concrete walls line both sides of the river (see photograph # 9).

Looking downstream - **A shoal has formed on the left bank adjacent to the floodwall. Numerous willow trees have become established.**

15. **Sawyer Passway Bridge.** (Approximately 75 feet downstream of station 450+00) This bridge is located about 1,000 feet upstream of the Fifth Street Bridge. - **The river channel is extremely narrow in the vicinity of this private bridge. A blockage of the channel could cause significant damage during a flood event. This area should be given the highest priority for maintenance.**

A large amount of 8-12" stone protection has been placed around the center bridge pier. This stone protection may significantly reduce the channel cross section.

Looking upstream - **Significant shoaling has developed in the center of the river above the bridge and has created a restriction within the channel. Small trees have fallen over. The shoal and all undesirable vegetation should be removed** (see photographs # 10, 11).

Railroad Bridge Upstream. This bridge has 3 arches (spans). **The lower portion of the right span is completely blocked by a shoal.**

Downstream - **There is major brush, tree and vegetative growth on both banks downstream to the Fifth Street Bridge.**

16. **Fifth Street Bridge.** (Work area "T")

Looking upstream - This high bridge over the North Nashua River has been removed. Construction of a new bridge is in progress. **The steep slopes near the bridge should be monitored closely to prevent erosion.**

Looking downstream - There are trees, brush and vegetative growth within the wide floodway.

17. **Railroad Bridge.** Located several hundred feet downstream of Fifth Street Bridge. (Station 420+00)

Access to this bridge is no longer available. The city should inspect this bridge and/or make provisions to provide access to the site during the semi-annual inspections.

18. **Bemis Road Bridge.** (Work area "U")

Riprap at both bridge abutments is free of vegetation.

Looking upstream - **Small trees have become established on the riprap protection and at the toe of the slope along the right bank** (see photograph # 12). This vegetation should be removed.

Looking downstream - The river channel is wide and straight. **There is a large shoal in the middle of the channel and another on the north (left) bank about 125 yards downstream.**

19. **Airport Road Bridge.** (Formerly Falulah Road) (Work area "W")

Looking upstream - **Brush and trees are present along both banks. There are trees in the channel at the abutments and on the shoal on the left bank.**

Looking downstream - **The shoals along the right and left bank have increased in size. The shoal on the right bank extends under the bridge and a short distance upstream of the bridge** (see photograph # 13).

GENERAL

1. **The city should aggressively develop an effective long-term maintenance program and investigate any and all sources of funding and manpower required to maintain the project.** Efforts should concentrate on a balanced maintenance program, which addresses the needs of both flood control and environmental resources.
2. **A semi-annual report, due in February and August of each year should be submitted by the city to the Corps.** This report should provide an update of the city's progress in accomplishing the necessary maintenance of the project and serves as an important tool in assessing the project status. **Semi-Annual reports have not been submitted by the city for many years.**
3. **The city should obtain all necessary local, state and/or federal permits to accomplish maintenance of the project.**

SUMMARY AND RECOMMENDATIONS

1. The river follows a relatively narrow and winding course through the downtown section of Fitchburg and is constricted by numerous bridges, shoals and sizable trees. In a major flood trees, brush, debris could be swept up against one of the many bridges in the area to create a dangerous situation. **Clearing the North Nashua River channel of vegetation and shoals in the stretch of river from the Circle Street Bridge to the Water Street Bridge should be accomplished in the following order of priority:**

- a. **The channel immediately upstream and downstream of the Sawyer Passway**

Bridge (for a distance of at least 200 feet upstream and downstream).

- b. The channel immediately upstream, underneath and downstream of the railroad bridge located just upstream of the Laurel Street Bridge.**
- c. The channel from downstream of the Circle Street Bridge to Laurel Street Bridge.**
- d. The channel from upstream of the Daniel Street Bridge to the Circle Street Bridge.**
- e. The channel from the Laurel Street Bridge to downstream of the Water Street Bridge.**
- f. All remaining stretches of the North Nashua River channel within the project limits (from the project start upstream of the Oak Hill Road Bridge to downstream of the Airport Road Bridge) as noted in the inspection report.**

2. The Department of Public Works must work closely with the Fitchburg Conservation Commission and the Massachusetts Department of Environmental Protection and other interested parties to develop a plan and obtain the necessary local, state and federal permits before beginning any work in the river and channel. Obtaining the permits will allow the City of Fitchburg to accomplish the maintenance of the project. This work may include, but is not limited to, brush removal and herbicide treatment, as well as the removal of shoals and other obstructions. The plan should address flood control maintenance and environmental issues and concerns.

3. Cutting is only a partial solution to the problem of undesirable vegetation. Significant re-sprouting occurs on an annual basis. Application of an approved herbicide, accomplished in accordance with state laws and regulations, is recommended to prevent trees, shrubs and other vegetation from quickly sprouting.

4. The Corps of Engineers will provide more specific guidance on maintenance of the project following completion of the Hydrologic River Channel.



Photo 1: Fitchburg LPP, 29 May 02, looking upstream from the Oak Hill Road Bridge



Photo 3: Fitchburg LPP, 29 May 02, looking upstream from the Kimball Street Bridge



Photo 2: Fitchburg LPP, 29 May 02, looking downstream from the Daniel Street Bridge

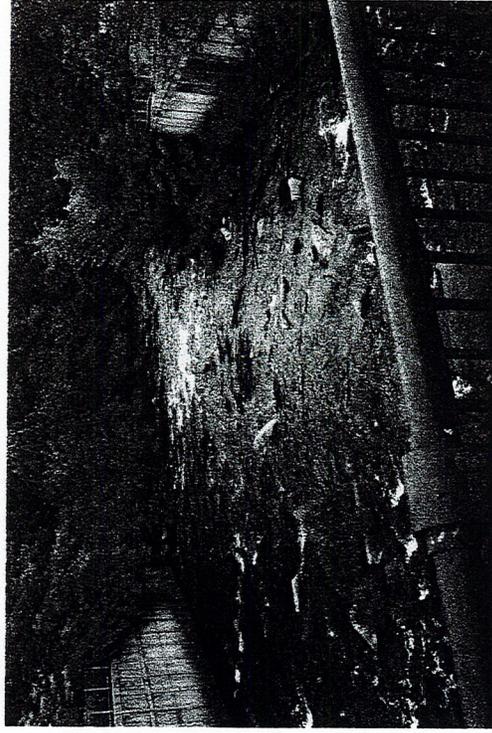


Photo 4: Fitchburg LPP, 29 May 02, looking downstream from the Upper River Street Bridge



Photo 5: Fitchburg LPP, 29 May 02, looking upstream from the Sheldon Street Bridge



Photo 7: Fitchburg LPP, 29 May 02, looking upstream from the Lower River Street Bridge



Photo 6: Fitchburg LPP, 29 May 02, looking downstream from the Lower River Street Bridge

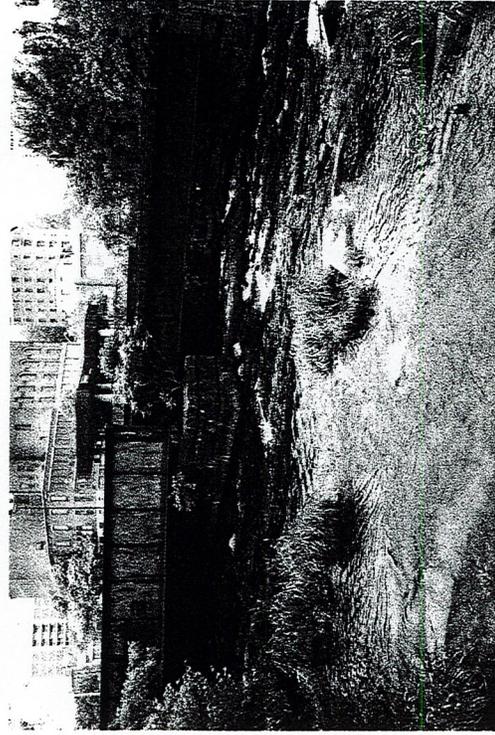


Photo 8: Fitchburg LPP, 29 May 02, looking upstream from the Laurel Street Bridge

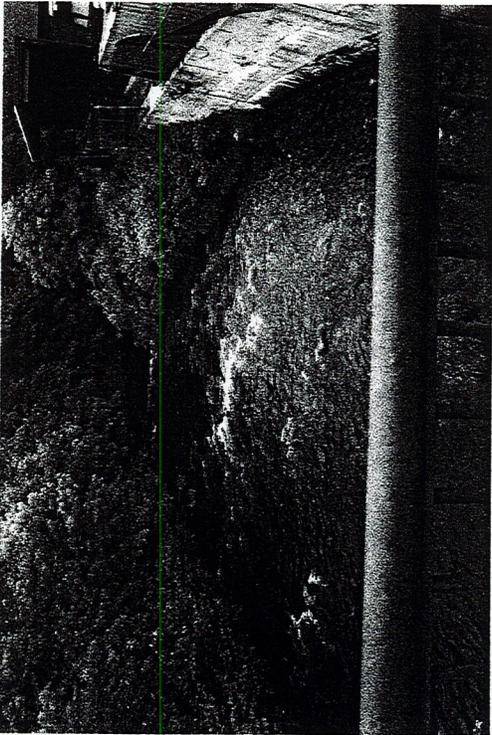


Photo 9: Fitchburg LPP, 29 May 02, looking upstream from the Water Street Bridge

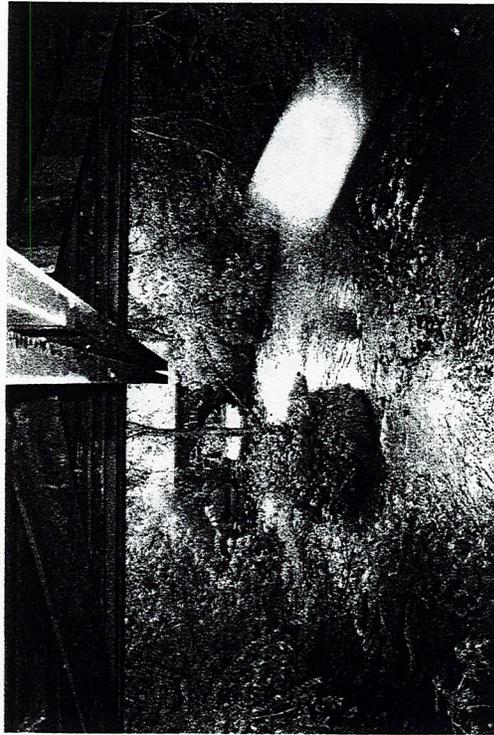


Photo 11: Fitchburg LPP, 29 May 02, looking upstream from the Sawyer Passway Bridge

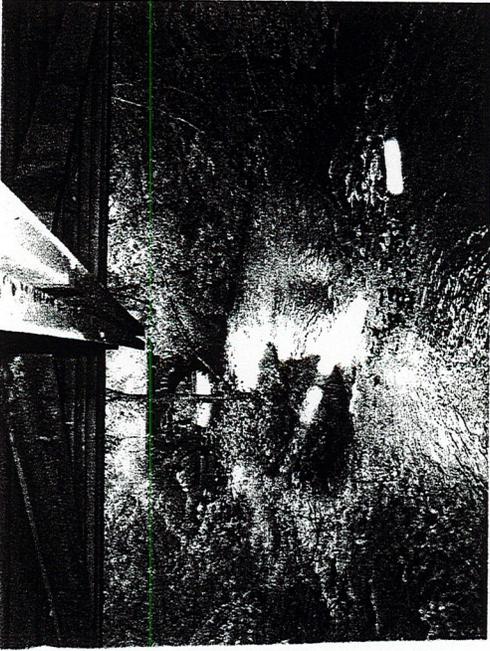


Photo 10: Fitchburg LPP, 29 May 02, looking upstream from the Sawyer Passway Bridge



Photo 12: Fitchburg LPP, 29 May 02, looking upstream from the Bemis Road Bridge



Photo 13: Fitchburg LPP, 29 May 02, looking downstream from the Airport Road Bridge