



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE
PITTSBURGH, PA 15222-4186

July 21, 2009

Readiness Office

Subject: Inspection of Bolivar, Allegany County, New York Flood Reduction Project

New York State - Department of Environmental Conservation
Attn: Mr. Ted Myers
270 Michigan Ave.
Buffalo, New York 14203-2999

Dear Mr. Myers:

We recently completed the bi-annual inspection of your flood protection project along Root Creek. The inspection assessed the current condition of your project and is an indicator of the commitment made to the monitoring, operation, maintenance and repair of your project. The enclosed inspection report provides you with a condition rating for each of your project's features as well as an overall project rating. Please review the results of this inspection and include all identified maintenance and repair items on your work schedule for completion.

Your project has earned a **MINIMALLY ACCEPTABLE** rating for 2009. Please refer to the inspection report for additional maintenance work which should be completed prior to our next inspection. Your community's flood protection relies on your commitment to a strong operation and maintenance program.

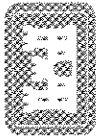
Should you have any questions or concerns in this regard, feel free to contact Mr. Richard Oleniacz, our Local Projects Manager, at (412) 395-7430.

Sincerely,

A handwritten signature in cursive script, reading "Thomas J. Fichera", is positioned above the typed name.

Thomas J. Fichera
Chief, Readiness Office

CF:
Allegany County Emergency Management
New York Emergency Management



US Army Corps
of Engineers®

Flood Damage Reduction System Inspection Report

Name of System: Bolivar FRP

Public Sponsor(s): New York State - DEC

Public Sponsor Representative: Mr Ted Myers, P.E.

Sponsor Phone: (716) 851-7070

Sponsor Email: _____

Corps of Engineers Inspector: Richard Oleniacz, P.E. Date of Inspection: 6/8/09

Inspection Report Prepared By: Richard Oleniacz, P.E. Date Report Prepared: 7/21/09

Internal Technical Review (for Periodic Inspections) By: Richard Oleniacz, P.E. Date of ITR: 7/22/09

Final Approval By: Richard Oleniacz, P.E. Date Approved: 7/24/09

Type of Inspection: ☐ Initial Eligibility Inspection ☐ Overall System Rating: ☐ Acceptable

☒ Continuing Eligibility Inspection (Routine) ☒ Minimally Acceptable

☐ Continuing Eligibility Inspection (Periodic) ☐ Unacceptable

Contents of this Report: ☒ Instructions ☐ Initial Eligibility Inspection

☒ General Items for All Flood Control Works ☐ Levee Embankments

☐ Concrete Floodwalls ☐ Sheet Pile and Concrete I-walls

☐ Interior Drainage System ☐ Pump Stations

☒ FDR System Channels ☒ Debris Basin

Note: In addition to the report contents indicated here, a plan view drawing of the system, with stationing, should be included with this report to reference locations of items rated less than acceptable. Photos of general system condition and any noted deficiencies should also be attached.

Bolivar FRP
ICW Inspection – 6/8/09

I inspected this 4,750 foot channel improvement project on June 8, 2009 with the assistance of Mr. Ted Myers from the New York State Department of Environmental Conservation and Jim Barns and Randy White from the Village of Bolivar.

The sponsor was given a copy of the USACE Levee Owners Manual.


The inspection was performed and the following maintenance items are required to properly maintain the project:

1. Clean out the sedimentation basin at the upstream end off the project (vegetation and sediment bars). The sedimentation basin has not been cleaned out in over 7 years.
2. Cut and remove all the vegetation in the channel
3. Remove all the sediment bars in the channel.

This project needs a major improvement in maintenance to prevent the project from receiving an unacceptable rating. Unacceptable projects are ineligible for PL84-99 emergency rehabilitation assistance.

I would strongly urge the New York State Department of Environmental Conservation and the Village of Bolivar to increase their efforts in maintaining the project immediately/ This was the first time that a representative from the Village of Bolivar attended the routine inspection since I have been doing the inspections (2005).

I would like to thank Mr. Ted Myers, Jim Barns and Randy White for their assistance and courtesy during the inspection.


Richard Oleniacz, P.E.
ICW Program Manager

General Instructions for the Inspection of Flood Damage Reduction Systems

A. Purpose of USACE Inspections:

The primary purpose of these inspections is to prevent loss of life and catastrophic damages; preserve the value of Federal investments, and to encourage non-Federal sponsors to bear responsibility for their own protection. Inspections should assure that Flood Damage Reduction structures and facilities are continually maintained and operated as necessary to obtain the maximum benefits. Inspections are also conducted to determine eligibility for Rehabilitation Assistance under authority of PL 84-99 for Federal and non-Federal systems. (ER 1130-2-530, ER 500-1-1)

B. Types of Inspections:

The Corps conducts several types of inspections of Flood Damage Reduction systems, as outlined below:

Initial Eligibility Inspections	Continuing Eligibility Inspections	
	Routine Inspections	Periodic Inspections
IEIs are conducted to determine whether a non-Federally constructed Flood Damage Reduction system meets the minimum criteria and standards set forth by the Corps for initial inclusion into the Rehabilitation and Inspection Program.	RIIs are intended to verify proper maintenance, owner preparedness, and component operation.	PIs are intended to verify proper maintenance and component operation and to evaluate operational adequacy, structural stability, and safety of the system. Periodic Inspections evaluate the system's original design criteria vs. current design criteria to determine potential performance impacts, evaluate the current conditions, and compare the design loads and design analysis used against current design standards. This is to be done to identify components and features for the sponsor that need to be monitored more closely over time or corrected as needed. (Periodic Inspections are used as the basis of risk assessments.)

C. Inspection Boundaries:

Inspections should be conducted so as to rate Flood Damage Reduction "systems" as complete and independent units, regardless of relevant "project" or "segment" boundaries.

Project	System	Segment
A flood damage reduction project is made up of one or more flood damage reduction systems which were under the same authorization.	A flood damage reduction system is made up of one or more flood damage reduction segments which collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.	A flood damage reduction segment is defined as a discrete portion of a flood damage reduction system that is operated and maintained by a single entity. A flood damage reduction segment can be made up of one or more features (levee, floodwall, pump stations, etc).

D. Land Use Definitions:

The following three definitions are intended for use in determining minimum required inspection intervals and initial requirements for inclusion into the Rehabilitation and Inspection Program. Inspections should be considered for all systems that would result in significant environmental or economic impact upon failure regardless of specific land use.

Agricultural	Rural	Urban
Protected population in the range of zero to 5 households per square mile protected.	Protected population in the range of 6 to 20 households per square mile protected.	Greater than 20 households per square mile; major industrial areas with significant infrastructure investment. Some protected urban areas have no permanent population but may be industrial areas with high value infrastructure with no overnight population.

E. Use of the Inspection Report Template:

The report template is intended for use in all Army Corps of Engineers inspections of levee and floodwall systems and flood damage reduction channels. The section of the template labeled "Initial Eligibility" only needs to be completed during Initial Eligibility Inspections of Non-Federally constructed Flood Damage Reduction Systems. The section labeled "General Items" needs to be completed with every inspection, along with all other sections that correspond to features in the system. The section labeled "Public Sponsor Pre-Inspection Report" is intended for completion before the inspection, if possible.



F. Individual Item / Component Ratings:

Assessment of individual components rated during the inspection should be based on the criteria provided in the inspection report template, though inspectors may incorporate additional items into the report based on the characteristics of the system. The assessment of individual components should be based on the following definitions.

Acceptable Item	Minimally Acceptable Item	Unacceptable Item
The inspected item is in satisfactory condition, with no deficiencies, and will function as intended during the next flood event.	The inspected item has one or more minor deficiencies that need to be corrected. The minor deficiency or deficiencies will not seriously impair the functioning of the item as intended during the next flood event.	The inspected item has one or more serious deficiencies that need to be corrected. The serious deficiency or deficiencies will seriously impair the functioning of the item as intended during the next flood event.

G. Overall System Ratings:

Determination of the overall system rating is based on the definitions below. Note that an Unacceptable System Rating may be either based on an engineering determination that concluded that noted deficiencies would prevent the system from functioning as intended during the next flood event, or based on the sponsor's demonstrated lack of commitment or inability to correct serious deficiencies in a timely manner.

Acceptable System	Minimally Acceptable System	Unacceptable System
All items or components are rated as Acceptable.	One or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the system from performing as intended during the next flood event.	One or more items are rated as Unacceptable and would prevent the system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.

H. Eligibility for PL84-99 Rehabilitation Assistance:

Inspected systems that are not operated and maintained by the Federal government may be Active in the Corps' Rehabilitation and Inspection Program (RIP) and eligible for rehabilitation assistance from the Corps as defined below:

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
The system is active in the RIP and eligible for PL84-99 rehabilitation assistance.	The system is Active in the RIP during the time that it takes to make needed corrections. Active systems are eligible for rehabilitation assistance. However, if the sponsor does not present USACE with proof that serious deficiencies (which had previously resulted in a minimally acceptable system rating) were corrected within the established timeframe, then the system will become inactive in the	The system is inactive in the RIP, and the status will remain inactive until the sponsor presents USACE with proof that all items rated Unacceptable have been corrected. Inactive systems are ineligible for rehabilitation assistance.

I. Reporting:

After the inspection, the Corps is responsible for assembling an inspection report (or a summary report if it was a Periodic Inspection) including the following information:

- All sections of the report template used during the inspection, including the cover and pre-inspection materials. (Supplemental data collected, and any sections of the template that weren't used during the inspection do not need to be included with the report.)
- Photos of the general system condition and noted deficiencies.
- A plan view drawing of the system, with stationing, to reference locations of items rated less than acceptable.
- The relative importance of the identified maintenance issues should be specified in the transmittal letter.
- If the Overall System Rating is Minimally Acceptable, the report needs to establish a timeframe for correction of serious deficiencies noted (not to exceed two years) and indicate that if these items are not corrected within the required timeframe, the system will be rated as Unacceptable and made inactive in the Rehabilitation Inspection Program.

J. Notification:

Reports are to be disseminated as follows within 30 days of the inspection date.

If the Overall System Rating is Acceptable	If the Overall System Rating is Minimally Acceptable	If the Overall System Rating is Unacceptable
Reports need to be provided to the local sponsor and the county emergency management agency.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, and to the FEMA region.	Reports need to be provided to the local sponsor, state emergency management agency, county emergency management agency, FEMA region, and to the Congressional delegation within 30 days of the inspection.



US Army Corps
of Engineers

General Items for All Flood Damage Reduction Systems

For use during all inspections of all Flood Damage Reduction Systems

Rated Item	Rating	Rating Guidelines	Location/Remarks/Recommendations
1. Operations and Maintenance Manuals	A	Levee Owner's Manual, O&M Manuals, and/or manufacturer's operating instructions are present.	The sponsor was given a copy of the Levee Owners Manual.
		Sponsor manuals are lost or missing or out of date; however, sponsor will obtain manuals prior to next scheduled inspection.	
		Sponsor has not obtained lost or missing manuals identified during previous inspection.	
2. Emergency Supplies and Equipment (A or M only)	A	The sponsor maintains a stockpile of sandbags, shovels, and other flood fight supplies which will adequately supply all needs for the initial days of a flood fight. Sponsor determines required quantity of supplies after consulting with inspector.	
		The sponsor does not maintain an adequate supply of flood fighting materials as part of their preparedness activities.	
3. Flood Preparedness and Training (A or M only)	A	Sponsor has a written system-specific flood response plan and a solid understanding of how to operate, maintain, and staff the FDR system during a flood. Sponsor maintains a list of emergency contact information for appropriate personnel and other emergency response agencies.	
		The sponsor maintains a good working knowledge of flood response activities, but documentation of system-specific emergency procedures and emergency contact personnel is insufficient or out of date.	

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Reduction

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines	Location/Remarks/Recommendations
1. Vegetation and Obstructions	M	A No obstructions, vegetation, debris, or sediment accumulation within the channel. Concrete channel joints and weep holes are free of grass and weeds.	Continue removing vegetation.
		M Obstructions (including log jams), vegetation, debris, or sediment are minor and have not impaired channel flow capacity, but should be removed. Sediment shoals have not developed to the extent that they can support vegetation other than non-aquatic grasses. A limited volume of grass and weeds may be present in concrete channel joints and weep holes.	
		U Obstructions (including log jams), vegetation, debris or sediment have impaired the channel flow capacity. Sediment shoals are well established and support woody and/or brushy vegetation. Sediment and debris removal required to re-establish flow capacity.	
2. Shoaling ¹ (sediment deposition)	M	A No shoaling or minor, non-vegetated shoaling is present.	Remove the sediment bars.
		M More widespread vegetated and non-vegetated shoaling is present. Non-aquatic grasses are present on shoal. No trees or brush is present on shoal, and channel flow is not significantly reduced. Sediment and debris removal recommended.	
		U Shoaling is well established, stabilized by saplings, brush, or other vegetation. Shoals are diverting flow to channel walls. Channel flow capacity is reduced and maintenance is required.	
3. Encroachments	A	A No trash, debris, unauthorized structures, excavations, or other obstructions present within the easement area. Encroachments have been previously reviewed by the Corps, and it was determined that they do not diminish proper functioning of the channel.	
		M Trash, debris, unauthorized structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations. Encroachments have not been reviewed by the Corps.	
		U Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the channel.	
4. Erosion	A	A No head cutting or horizontal deviation observed.	
		M Head cutting and horizontal deviation evident, but is less than 1 foot from the designed grade or cross section.	
		U Head cutting and horizontal deviation of more than 1 foot from the designed grade or cross section. Corrective actions required to stop or slow erosion.	
5. Concrete Surfaces	A	A Negligible spalling, scaling or cracking. If the concrete surface is weathered or holds moisture, it is still satisfactory but should be seal coated to prevent freeze/ thaw damage.	
		M Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs/ sealing is necessary to prevent additional damage during periods of thawing and freezing.	
		U Surface deterioration or deep cracks present that may result in an unreliable structure. Any surface deterioration that exposes the sheet piling or lies adjacent to monolith joints may indicate underlying reinforcement corrosion and is unacceptable.	
		N/A There are no concrete items in the channel.	

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¹ If weather and flow conditions allow, inspectors should walk in the channel and probe shoal areas in order to estimate extent of blockage of the cross-sectional area where shoaling is present.

Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines	Location/Remarks/Recommendations
6. Tilting, Sliding or Settlement of Concrete Structures ¹	A	A There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the structure.	
		M There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The maximum offset, either laterally or vertically, does not exceed 2 inches unless the movement can be shown to be no longer actively occurring. The integrity of the structure is not in danger.	
		U There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance. Any movement that has resulted in failure of the waterstop (possibly identified by daylight visible through the joint) is unacceptable. Differential movement of greater than 2 inches between any two adjacent monoliths, either laterally or vertically, is unacceptable unless it can be shown that the movement is no longer active. Also, if the floodwall is of I-wall construction, then any visible or measurable tilting of the wall toward the protected side that has created an open horizontal crack on the riverside base of a monolith is unacceptable.	
		N/A There are no concrete items in the channel.	
7. Foundation of Concrete Structures ²	A	A No active erosion, scouring, or bank caving that might endanger the structure's stability. There are areas where the ground is eroding towards the base of the structure. Efforts need to be taken to slow and repair this erosion, but it is not judged to be close enough to the structure or to be progressing rapidly enough to affect structural stability before the next inspection. For the purposes of inspection, the erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheep-pile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stable until the next inspection.	
		M Erosion or scour is not closer to the riverside face of the wall than twice the floodwall's underground base width if the wall is of L-wall or T-wall construction; or if the wall is of sheep-pile or I-wall construction, the erosion is not closer than twice the wall's visible height. Additionally, rate of erosion is such that the wall is expected to remain stable until the next inspection.	
		U Erosion or bank caving observed that is closer to the wall than the limits described above, or is outside these limits but may lead to structural instabilities before the next inspection. Additionally, if the floodwall is of I-wall or sheep-pile construction, the foundation is unacceptable if any turf, soil or pavement material got washed away from the landside of the I-wall as the result of a previous overtopping event.	
		N/A There are no concrete items in the channel.	
8. Slab and Monolith Joints	A	A The joint material is in good condition. The exterior joint sealant is intact and cracking/desiccation is minimal. Joint filler material and/or waterstop is not visible at any point.	
		M The joint material has appreciable deterioration to the point where joint filler material and/or waterstop is visible in some locations. This needs to be repaired or replaced to prevent spalling and cracking during freeze/thaw cycles, and to ensure water tightness of the joint.	
		U The joint material is severely deteriorated or the concrete adjacent to the monolith joints has spalled and cracked, damaging the waterstop; in either case damage has occurred to the point where it is apparent that the joint is no longer watertight and will not provide the intended level of protection during a flood.	
		N/A There are no concrete items in the channel.	

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¹ The sponsor should be monitoring any observed movement to verify whether the movement is active or inactive.

² Inspectors must have as-built drawings available during the inspection so that the lateral distance to the heel and toe of the floodwalls can be determined in the field.



Flood Damage Reduction Channels

For use during Initial and Continuing Eligibility Inspections of flood damage reduction channels

Rated Item	Rating	Rating Guidelines	Location/Remarks/Recommendations
9. Flap Gates/Flap Valves/ Pinch Valves ¹	A	Gates/ valves open and close easily with minimal leakage, have no corrosion damage, and have been exercised and lubricated as required.	
	M	Gates/ valves will not fully open or close because of obstructions that can be easily removed, or have minor corrosion damage that requires maintenance.	
	U	Gates/ valves are missing, have been damaged, or have deteriorated to the point that they need to be replaced.	
	N/A	There are no flap gates.	
10. Riprap Revetments & Banks	A	No riprap displacement or stone degradation that could pose an immediate threat to the integrity of channel bank. Riprap intact with no woody vegetation present.	
	M	Minor riprap displacement or stone degradation that could pose an immediate threat to the integrity of the channel bank. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
	U	Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Rock protection is hidden by dense brush, trees, or grasses.	
	N/A	There is no riprap protecting this feature of the system, or riprap is discussed in another section.	
11. Revetments other than Riprap	A	Existing revetment protection is properly maintained, undamaged, and clearly visible.	
	M	Minor revetment displacement or deterioration that does not pose an immediate threat to the integrity of the levee. Unwanted vegetation must be cleared or sprayed with an appropriate herbicide.	
	U	Significant revetment displacement, deterioration, or exposure of bedding observed. Scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Revetment protection is hidden by dense brush and trees.	
	N/A	There are no such revetments protecting this feature of the system.	
12. Fencing and Gates ¹	A	Fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.	
	M	Fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.	
	U	Fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous features are not secured.	
	N/A	There are no features noted that require safety fencing.	

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¹ Proper operation of this item must be demonstrated during the inspection.

Debris Basins

For use during Initial and Continuing Eligibility Inspections of debris basins

Rated Item	Rating	Rating Guidelines
1. Unwanted Vegetation Growth ¹	M	A The debris basin embankment (including riprap protection) has little or no unwanted vegetation (trees, bush, or undesirable weeds).
		M Minimal vegetation growth (brush, weeds, or trees 2 inches in diameter or smaller) is present. This vegetation must be removed but does not currently threaten the operation or integrity of the debris basin embankment.
		U Significant vegetation growth (brush, weeds, or any trees greater than 2 inches in diameter) is present and must be removed to reestablish or ascertain debris basin embankment integrity.
2. Sod Cover	A	A There is good coverage of sod over the debris basin embankment.
		M Approximately 25% of the sod cover is missing or damaged over a significant portion or over significant portions of the debris basin embankment.
		U Over 50% of the sod cover is missing or damaged over a significant portion or portions of the debris basin embankment.
		N/A Surface protection is provided by other means.
3. Encroachments or Obstructions	A	A No trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present within the easement area.
		M Trash, debris, unauthorized farming activity, structures, excavations, or other obstructions present, or inappropriate activities noted that should be corrected but will not inhibit operations and maintenance or emergency operations.
		U Unauthorized encroachments or inappropriate activities noted are likely to inhibit operations and maintenance, emergency operations, or negatively impact the integrity of the debris basin.
4. Sedimentation	M	A Sediment deposits do not exceed 10% of basin capacity.
		M Sediment deposits exceed 10% but do not exceed 30% of basin capacity.
		U Sediment deposits exceed 30% of basin capacity.

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¹ If there is significant growth on the debris basin embankment that inhibits the inspection of animal burrows or other items, the inspection should be postponed until the growth is removed.

Debris Basins

For use during Initial and Continuing Eligibility Inspections of debris basins

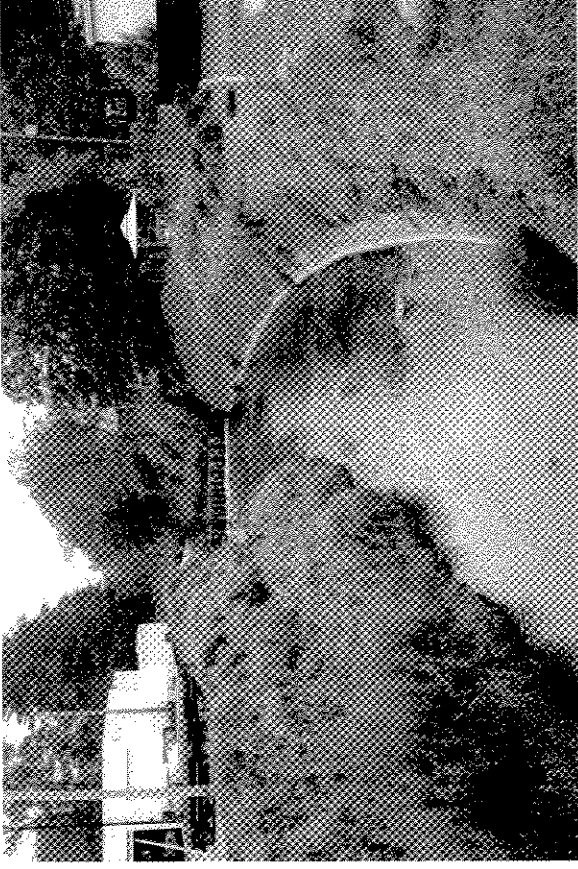
Rated Item	Rating	Rating Guidelines
5. Slope Stability	A	A No slides, sloughs, tension cracking, slope depressions, or bulges are present.
		M Minor slope stability problems that do not pose an immediate threat to the debris basin embankment.
		U Major slope stability problems (ex. deep seated sliding) identified that must be repaired to reestablish the integrity of the debris basin embankment.
6. Erosion/ Bank Caving	A	A No erosion or bank caving is observed on the slopes of the debris basin embankment that might endanger its stability. No erosion or bank caving is observed along the perimeter of the basin.
		M Minor erosion is occurring or has occurred on or near the debris basin embankment, but debris basin embankment integrity is not threatened. Minor erosion is occurring or has occurred along the perimeter of the basin.
		U Erosion or caving is occurring or has occurred that threatens the stability and integrity of the debris basin embankment or its foundation.
7. Riprap Protection	A	A No riprap displacement or stone degradation.
		M Minor riprap displacement or stone degradation that does not pose a threat to the integrity of the debris basin embankment.
		U Significant riprap displacement, exposure of bedding, or stone degradation observed. Scour activity is eroding the debris basin embankment.
	N/A	There is no riprap protecting this feature of the system.

Key: A = Acceptable. M = Minimally Acceptable; Maintenance is required. U = Unacceptable. N/A = Not Applicable. FDR = Flood Damage Re

Bolivar FRP
ICW – 6/8/09



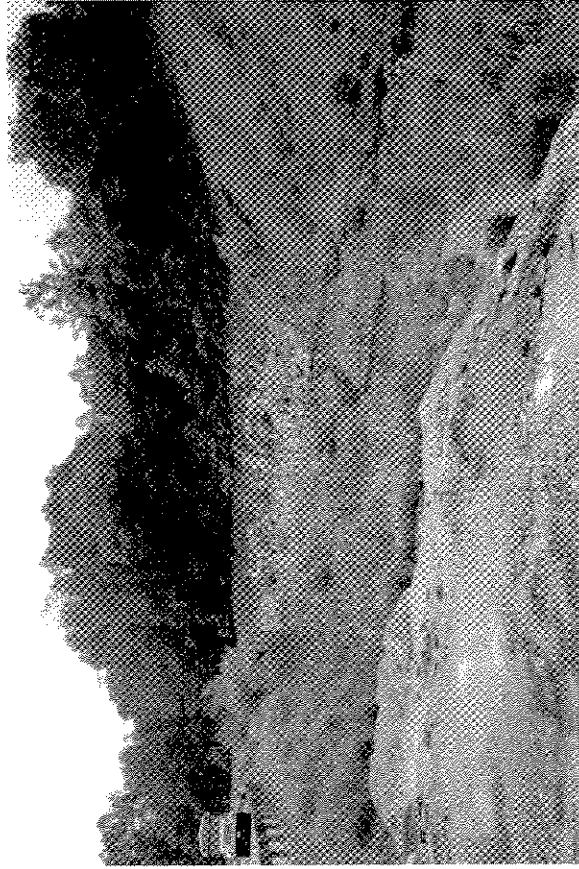
1. Looking D/S from the Main St Bridge. Remove vegetation and sediment bars in the channel.



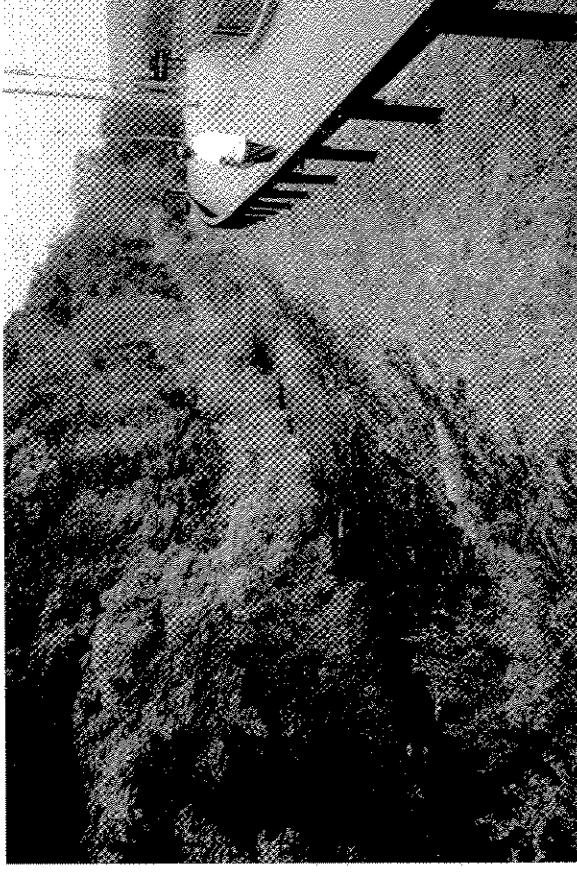
2. Looking U/S from the Main St Bridge. Remove vegetation and sediment bars in the channel.



3. Looking U/S from the footbridge at the D/S end of the project. Remove vegetation and sediment in the channel.



4. Sedimentation basin at the U/S end of the project. Clean out.



5. Looking D/S from the U/S end of the football field.



6. Looking D/S from the U/S drop structure. Remove sediment bar in the channel.

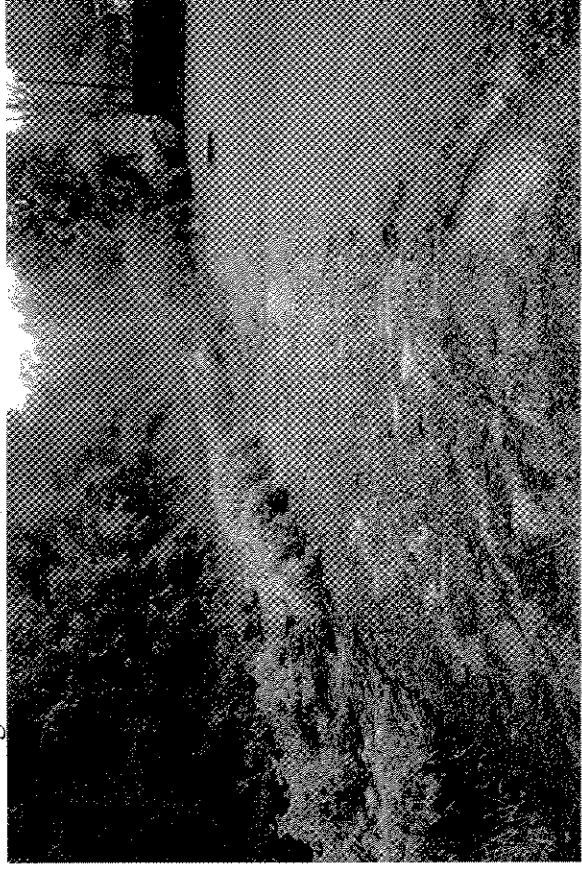
Bolivar FRP
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7. Looking U/S from the Davis St Bridge. Remove sediment bars.
Cut vegetation in the channel.



8. Looking D/S from the Davis St. Bridge. Remove sediment bars.
Cut the vegetation in the channel.



9. Access ramp at Davis St. Bridge. Cut vegetation on left bank.



10. Looking D/S from the D/S drop structure. Cut vegetation.