

# Martins Brook Floodway Operation & Maintenance Plan North Reading, MA



October, 2014



**GREEN INTERNATIONAL AFFILIATES, INC.**  
**CIVIL AND STRUCTURAL ENGINEERS WESTFORD, MA**

**Martins Brook  
Floodway Operation and Maintenance Plan  
North Reading, MA**

Table of Contents

- 1.0 Purpose
- 2.0 Martins Pond Association
- 3.0 Watershed Description
- 4.0 Martins Pond Flooding History
- 5.0 Stream Channel Inspection and Maintenance Guidelines
- 6.0 Water level Monitoring
- 7.0 Permitting
- 8.0 Emergency Action Plan
- 9.0 Mitigation Effort

Figure 1 Water level Monitoring Station at Route 62

Attachments Memorandums of Understanding to Town of Wilmington,  
Town of Andover and MA DCR

## 1.0 Purpose

Pursuant to the public meeting held with the Martins Pond Association (MPA) on February 26, 2013 and a subsequent meeting with the Town of North Reading on March 8, 2013, Green International Affiliates, Inc. (Green) was retained by the Town to develop this Martins Brook Floodway Operation and Maintenance (MBF-O&M) Plan. After much study relative to the replacement of the Route 62 culvert in Wilmington, it was determined that there is not a cost-effective solution that will lower flood elevations in Martins Pond without causing a slight increase in flood elevations on downstream properties in Wilmington. Furthermore, while the Route 62 culvert controls flood elevations in Martins Pond during large flood events (such as the 100-year, or 1% chance flood), it was also determined that for smaller flood events, the culvert on Benevento's property controls flood elevations up to a certain level in Martins Pond. The MPA has also observed that keeping the channel clear of vegetation and debris helps alleviate flooding conditions in Martins Pond.

The purpose of the MBF-O&M Plan is to establish guidelines and procedures for inspecting and maintaining the Martins Brook stream channel and ensuring that the existing channel capacity is not compromised by debris, excessive vegetation growth, obstructions, unregulated filling and/or construction activities. It is anticipated that the MBF-O&M Plan will be appended to the Town's Hazard Mitigation Plan and will be used in conjunction with the Martins Pond Beaver Management Manual. (<http://www.martinspond.org/environment/issues/beavers/beavers.htm>)

The MBF-O&M Plan contains both proactive and reactive steps. Proactive steps include routine culvert and channel inspection, vegetation and debris removal; installation of a trash rack upstream of Route 62; coordination with Wilmington for removal of the stop logs in the weir at Route 62; and the recommended installation of a water level monitoring station equipped with telemetry at the Route 62 culvert. At a minimum, seasonal stop log removal should occur between September and May with approval from the Wilmington Conservation Commission. As of June, 2014, Wilmington has removed the stop logs from the weir at Route 62 and intends to leave them out indefinitely, with the exception of drought periods.

Reactive steps in the plan include emergency response when water levels indicate blockages have occurred from debris (or beavers) and/or reporting of violations to regulatory agencies when channel encroachments are found. Memorandums of Understanding (MOU's) have been developed for the Town of Andover, the Town of Wilmington, and the Commonwealth of Massachusetts Department of Conservation and Recreation (DCR) relative to their respective roles in helping to reduce flood damage in the Martins Brook floodplain. DCR has several dams located in for the Harold Parker State Forest in Andover, which is part of the Martins Brook Watershed.

## **2.0 Martins Pond Association**

The Martins Pond Association (MPA) was formed in 1992 and has served as the stewards of the Martins Pond watershed for the past 20 years. There are approximately 100 homes located around the pond. The MPA has the following long-term goals:

- Protect the delicate environmental balance of Martins Pond through careful, long-term management and education.
- Establish the MPA as a politically and economically viable group.
- Enhance the recreational and social value of Martins Pond and its facilities.

The MPA is a volunteer association and has many active participants. The MPA also includes the Martins Pond Reclamation Study Committee, which is appointed by the Board of Selectmen. Floodplain Management and the reduction of flood damage and impacts has been one of the principal environmental concerns of the MPA over the past 10-15 years.

## **3.0 Watershed Description**

Martins Brook is part of the Ipswich River watershed. The brook itself begins at the outlet of Martins Pond in North Reading. Martins Pond is fed by the Skug River, which originates in Andover. Martins Brook flows southwest from North Reading through Wilmington and then returns back into North Reading before it joins the Ipswich River. The Ipswich River flows east, primarily along the southern corporate limits of North Reading.

Flood profiles for Martins Brook are provided in the effective Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) for the Town of North Reading and indicate that the culvert at Route 62 in Wilmington is a constraining hydraulic feature along Martins Brook, causing a significant jump in water surface elevations between the downstream and upstream ends of the culvert during a 100-year flood.

The existing culvert at Route 62 is constructed of field stone and contains a center pier on the downstream side. Roadway widening occurred on the north side of the Salem Street where a new extension of the culvert was constructed. The opening on the upstream side of the culvert is approximately 11.1' wide x 6.8' high. On the downstream side of the culvert, the openings are approximately 3' wide x 5.8' high and 4.4' wide x 4' high. The hydraulic opening of the stone box culverts is 35 square feet at the downstream face. In addition, there is a weir located just downstream of the culvert that controls the normal water surface of the brook upstream of Route 62.

Since the upstream opening is larger than the downstream opening, a “funnel effect” is created, causing increased stream velocities at the downstream face. In addition, the configuration and width of the openings frequently causes debris to collect at the upstream side, resulting in obstructed flow and further reduction of hydraulic capacity.

Upstream of the Route 62 culvert, two other hydraulic controls exist between Route 62 and the outlet of Martins Pond at Burroughs Road. One of these structures is an existing abandoned railroad embankment that is located just upstream of Route 62 and the other is a culvert located within the Benevento Sand and Stone property. The Benevento culvert is overtopped during larger flood events, but restricts flow during smaller floods.

Residences adjacent to Martins Pond annually experience basement flooding resulting from a combination of high groundwater and surface flooding.

Peak flood discharges at select locations taken from the FEMA FIS are shown below.

**Peak Discharges from the FEMA Flood Insurance Study**

<b><u>Martins Brook</u></b> <b>Location</b>	<b><u>Drainage Area</u></b> <b>(sq. mi.)</b>	<b>10-yr</b> <b>(cfs)</b>	<b>50-yr</b> <b>(cfs)</b>	<b>100-yr</b> <b>(cfs)</b>	<b>500-yr</b> <b>(cfs)</b>
At confluence with Ipswich River	14.9	622	1081	1261	1609
Upstream of confluence with Rapier Brook	13.8	316	562	657	855
Downstream of Salem Street (Rte 62)	12.2	169	284	295	313
At Burroughs Road	7.2	134	450	531	689
Outlet of Martins Pond					

#### **4.0 Flooding History**

Flood events occur every few years in Martins Pond that impact a number of homes located near the pond. When flooding occurs in Martins Pond that is greater than a 10-year event, flood waters overtop both Burroughs Road at the outlet structure of the pond and Lakeshore Boulevard in the vicinity of the Town's water pumping station (Lakeside Pumping Station, a critical facility) and inundates the pump station site, causing flood damage and preventing access for work vehicles and safe egress from the Pond area for residents. When this occurs, the only alternate route for many residents utilizes Poplar Terrace. Poplar Terrace is a local road with sight line issues caused by a severe crest vertical curve.

During floods greater than a 10-year event, Burroughs Road becomes impassible, isolating more than 200 homes located along the west side of Martins Pond. An emergency access (i.e. Rahnden Terrace Emergency Gate) is now in place to allow emergency vehicles to access the west side of the pond from State Route 125 and to allow residents to leave and return to their homes. Water levels in Martins Pond can take a week or more to recede.

There have been several major floods since 1938 in the Town of North Reading. Major floods occurred in July 1938, March 1948, May 1954, January 1958, October 1962, and March 1968. There have also been more recent floods in October, 1996; June, 1998; March, 2001; May, 2006; April, 2007 and March, 2010.

Based on information obtained from the MPA's web site, the May flood of 2006 was the worst flood on record and caused flooding in the Martins Pond neighborhood such that several families had to be evacuated from their homes. Some people suffered thousands of dollars in damage to first floor living space, loss of mechanical/heating equipment, and loss of basement furnishings. During the 2006 flood, Burroughs Road was impassable, along with the intersection of Lakeside Boulevard and Burroughs Road, and also the section of Lakeside Boulevard near the Town's Pumping Station.

The water levels reached an elevation of 79.2 feet (NGVD 1929). The water elevation receded slowly, about 4 inches per day, due in part to the constriction of flow at the Route 62 culvert in Wilmington. Four days after the pond crested at 79.2 feet, water in Martins Pond had only dropped 1.12 feet. After one week, the pond was still flooded. The culvert located on Benvento's property was inspected by MPA members, who reported an 18-inch drop in water surface through the culvert. In addition, flood waters should have been overtopping the gravel roadway based on the effective FEMA flood elevation, but filling of the roadway prevented this from happening and the road was acting as a dam and holding water back. The crest of 79.2 feet represents a flood of 4.7 feet over the normal pond elevation of approximately 74.5 feet.

## 5.0 Stream Channel Inspection and Maintenance Guidelines

The MPA, in conjunction with the Town of North Reading DPW, will be the principal entity to perform inspections of Martins Brook as outlined below. Any conditions that could increase flood elevations, such as debris in the stream, debris in culverts, beaver dams, illegal filling, and/or excessive vegetation growth shall be reported to the North Reading Town Engineer. Depending on the particular condition, the Town Engineer will determine the next steps and agencies to contact.

Channel Inspection and Maintenance Guidelines for Martins Brook are as follows:

- Perform monthly inspections of the channel at the following locations (at a minimum):
  - Route 28 (Skug River)
  - Burroughs Road
  - Benevento's culvert
  - Route 62 and railroad trestle abutments
  - West Side Water Treatment Plant Bridge
  - Route 28
- Perform inspections as early as possible before forecasted storm events that will exceed 2 inches of rain
- Perform inspections after storm events that exceed 2 inches of rain
- Perform inspections when water level monitoring indicates there is a blockage or obstruction of some type.
- Coordinate with the North Reading DPW for the removal of debris or obstructions, including stop logs. DPW will coordinate with the appropriate party (i.e. North Reading or Wilmington Conservation Commission(s), Wilmington DPW, MA DEP, etc.
- Inspect entire stream by canoe or kayak at least once per year. The Town Engineer, or his agent (trapper) will also inspect Martins Brook twice a year; once in the Spring and once in the Fall if water levels permit.
- Repair any eroded areas and re-plant with suitable seed or plant material(s).
- Control beaver cutting, browse damage, burrowing, and other damage by wildlife per the Martins Pond Beaver Management Manual.
- Coordinate with the North Reading Conservation Commissions and Department of Public Works (DPW) for channel clearing, hydro-raking and vegetation removal. For work in Wilmington, the North Reading DPW will coordinate with the Wilmington Conservation Commission and DPW.

## 6.0 Water level Monitoring

Installation of automated water level monitoring stations will help ensure that obstructions or illegal activities that could negatively impact flooding conditions in the watershed are detected early and can be resolved before large floods occur in order to minimize damage and increase response time. An automated water level monitoring station is being proposed at the Route 62 culvert in Wilmington. A website will be set up that will allow the water levels at this key location to be continuously monitored. When flood waters reach the levels listed in Section 8.0 below, email alerts will be automatically sent to designated officials at the to the North Reading DPW, Police Department, Fire Department, the MPA, and all residents located in the Martins Brook Special Flood Hazard Area (SFHA) who choose to participate in the notification program, alerting them of potential flooding.

A detail of a typical water level monitoring station is included in Appendix A. The station would be leased for an annual cost of approximately \$6,000 the first year and approximately \$3,300 for the second and subsequent years. The monitoring station will be secured to the headwall on the upstream side of Route 62 and will not impact any resource area. A Request for determination of Applicability will be filed with the Wilmington Conservation Commission and a negative determination is anticipated. Also, an agreement will be secured with the Town of Wilmington for the placement of the station on the Route 62 headwall.

Existing staff gages at Route 62 and Burroughs Road should be repaired/replaced and maintained.

## 7.0 Permitting

Any future work required to maintain the channel of Martins Brook could be subject to a number of permits. The potential permits that could be required for work in the channel, depending on the extent and scope are discussed below. It should be noted that the removal of beavers and beaver dams are not subject to these permits and are covered under the Town's Beaver management manual mentioned in Section 1.0. Also, the East Middlesex Mosquito Control Project is allowed to perform certain channel maintenance tasks without being subject to the permits discussed below.

**Massachusetts Wetlands Protection Act (WPA):** There are several types of wetland resource areas located along Martin's Brook in both North Reading and Wilmington that fall under the jurisdiction of the Massachusetts Wetlands Protection Act. Any future maintenance work to clear the channel may temporarily impact Land Under Water, Inland Bank, Bordering Land Subject to Flooding (BLSF), Riverfront, and Bordering Vegetated Wetland (BVW) areas.

A Notice of Intent or a Request for Determination of Applicability may be required with the local Conservation Commission depending on the extent of the proposed activity. In addition,



proposed activities will need to be evaluated relative to jurisdiction under the Natural Heritage and Endangered Species Program (NHESP). Lastly, the vicinity of the proposed activity to a certified or known potential vernal pool may also need to be considered.

Wilmington has a Town Wetlands Enforcement Bylaw, but it only covers the Town's ability to compel adherence to 310 CMR 10. Wilmington does have a "Wetlands Policy" that, among other requirements, calls for a 12-foot wide "no-disturb zone" around the edges of wetlands. North Reading also has a local Wetlands By-Law.

***Massachusetts Dept. of Environmental Protection (DEP) Chapter 91 Waterways***

***License/Permit:*** The scope of this MBFO&M Plan does not cover dredging. If it is determined that dredging, a specific plan would need to be developed and permitted through the local Conservation Commission and the state. Depending on the scope of the project, the work may fall under Waterways jurisdiction and require DEP review. A Chapter 91 review can be coordinated with the Notice of Intent process. Ordinarily the Chapter 91 process requires review by DEP and public notification; if sufficient public interest is generated by the public notice, DEP must call a hearing to present the proposed work and receive public comment.

***U.S. Army Corps of Engineers Section 404 Wetlands Permit:*** The work covered under this MBFO&M Plan is not anticipated to fall under the jurisdiction of the U.S. Army Corps of Engineers General Permit for Massachusetts, because of the limited amount of disturbance to Waters of the U.S. However, any proposed work beyond the scope of this plan may require federal review similar to the state review described in the preceding paragraph.

## **8.0 Emergency Action Plan**

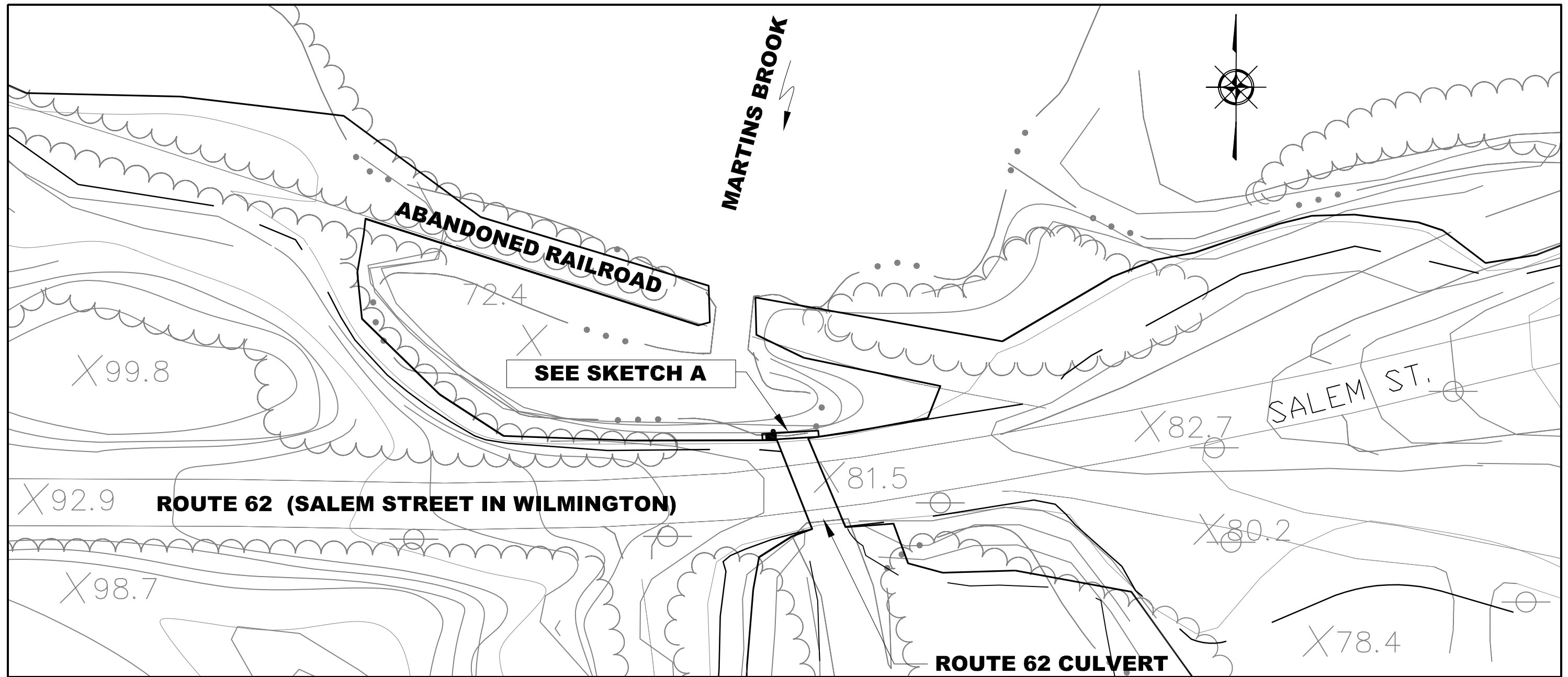
When water levels reach 76.5 feet (NGVD) at the Route 62 culvert, the new water level monitoring station will send out automatic email alerts to all stakeholders in Wilmington and North Reading. The MPA will manually monitor Burroughs Road and send out alerts when water elevations exceed 76.0 feet (NGVD). Depending on forecasts, residents in low lying areas may be advised to evacuate before Burroughs Road is overtopped.

Residents located in the SFHA should ensure that their heating and electrical systems are located above the 100-year flood elevation if at all possible, especially electrical panels. Prior to evacuating homes, residents should shut off the main power to their residences, assuming the electrical panel is accessible and can be reached safely. It should be noted that sump pumps are not designed to keep up with inundation from flooding and pumping water out of basements too quickly can cause foundations to fail if the difference in hydrostatic pressure outside of the foundation wall compared to that inside the basement becomes too great.

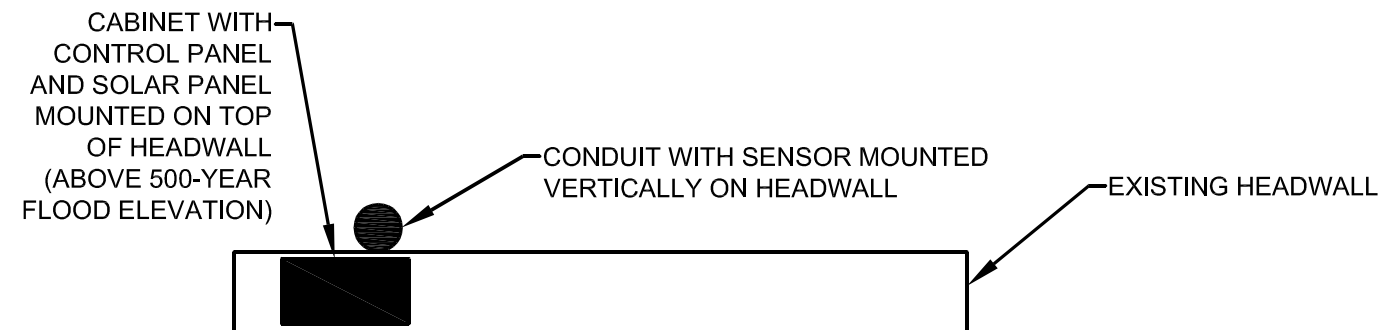
## **9.0 Mitigation Efforts**

As the costs for flood damage continues to rise in the U.S., especially as a result of Hurricane Katrina and Super Storm Sandy, the National Flood Insurance Program (NFIP) is currently \$28 Billion in debt. One of the reasons for this large deficit is that structures having a high risk of flood damage have been able to buy flood insurance at a subsidized rate for many years. In order to keep the NFIP solvent, Congress enacted Biggert-Waters in 2012 (BW-12) to increase the cost of policies in high risk areas. Some of the BW-12 requirements were relaxed under the Homeowner's Flood Insurance Affordability Act of 2014, but there is a shift in policy that will eventually eliminate the subsidies for policies on structures that have a high probability of flooding so that rates are more reflective of actual risk.

Therefore, home owners located within the Special Flood Hazard Area of Martins Pond should consider having an elevation certificate performed to determine if the lowest floor of their home is higher than the base flood elevation (i.e. the 100-year or 1% chance flood elevation). If not, homeowners may want to consider elevating their structure or modifying their basement into a flow-through crawl space to prevent excessive flood insurance premiums in the future and also to reduce the pain, cost, and health risks associated with flood inundation.



**SKETCH A**



PROPOSED WATER LEVEL MONITORING STATION MARTINS BROOK AT ROUTE 62 CULVERT	
TOWNS OF NORTH READING/WILMINGTON, MA	
GREEN INTERNATIONAL AFFILIATES, INC. <i>Civil and Structural Engineers</i> 239 LITTLETON ROAD SUITE 3, WESTFORD, MASSACHUSETTS	FIGURE 1

## **Attachments**

**Memorandums of Understanding  
to  
Town of Wilmington,  
Town of Andover and  
MA DCR**

## MEMORANDUM OF UNDERSTANDING

**TO:** The Town of Wilmington, MA  
**FROM:** The Town of North Reading, MA  
**RE:** Martins Brook – Floodway Operation and Maintenance Plan  
**DATE:** October, 2014

Please be advised that due to the history of flooding in the Martins Pond/Brook watershed and the potential risk of future flooding, the Town of North Reading has developed the Martins Brook Floodway Operation and Maintenance Plan in order to ensure that the Martins Brook is able to convey flood waters from Martins Pond to the Ipswich River without impedance. The Town of North Reading is providing this Memorandum of Understanding, along with a copy of our plan, and respectfully requesting that the Town of Wilmington monitor any current or proposed activities within the Martins Brook watershed taking into consideration the potential impact to homes and businesses located in the Martins Brook Floodplain. The Town of North Reading is seeking Wilmington's cooperation in this matter based on the following:

- Martins Brook flows through the Town of North Reading into the Town of Wilmington and then back into North Reading and is a significant flooding source in both towns with a long history of causing damage to homes and businesses in both communities during flood events.
- Martins Brook is a tributary to the Ipswich River, which is severely stressed from development in the watershed such that it has experienced reduced base flow during warm, dry periods and increased flood elevations (in excess of the effective FEMA 100-year flood elevations) on numerous occasions over the past two decades.
- The Town of North Reading and the Martins Pond Association have worked diligently for over a decade to minimize flood damage to homes located around Martins Pond, including the implementation of flood hazard mitigation plans.
- The Town of Wilmington has cooperated fully in maintaining and clearing the culvert under Route 62, which is a major hydraulic control point along the brook and controls flood elevations in Martins Ponds during large flood events (floods greater than a 10-year event).
- Through extensive study, it has been determined that the hydraulic opening of the Route 62 culvert cannot be increased to reduce flood elevations in Martins Pond without resulting in some rise in flood elevations downstream of Route 62 in Wilmington.
- The Town of North Reading has permitted (through the Wilmington Conservation Commission) and installed fencing to mitigate beaver activity inside the Route 62 culvert and the Town of North Reading provides periodic cleaning and repair of the device and will continue to do so.
- An existing "gentlemen's" agreement between the two Towns regarding beaver trapping is as follows:
  - Costs to trap beavers affecting water levels in Wilmington have been borne by the Town of North Reading and necessary permits to trap beavers and breach dams have been obtained by the Town of North Reading DPW through its Conservation Commission and Board of Health.
  - Costs to trap beavers affecting water levels in North Reading have been borne by the Town of Wilmington and necessary permits to trap beavers and breach dams have been obtained by the Town of Wilmington DPW through its Conservation Commission and Board of Health.

- Previously, stoplogs were installed in the weir located just downstream of the Route 62 culvert by the Town of Wilmington to impound water for water supply purposes. Currently, these stoplogs are removed and will remain so under normal circumstances, and will only be replaced if drought conditions dictate the need to replace them.
- It is in the best interest of both Towns to ensure that flooding conditions in Martins Brook are not exacerbated by: new development that does not mitigate stormwater impacts; filling or illegal activity in and along the floodplain that impedes flood flow and/or causes erosion; the growth and/or decay of excess vegetation beyond that which is required for a healthy river ecosystem; and the accumulation of excessive sediment in the stream channel, especially from roadway maintenance operations.

Based on the above, the Town of North Reading encourages the Town of Wilmington to adopt a “No Adverse Impact” (NAI) stormwater policy, consistent with the Association of State Floodplain Managers NAI Policy, that considers the impacts of runoff flow rates and volumes from activities that occur or are being proposed within the watershed. We are already confident that the Town of Wilmington will diligently enforce all local and state wetlands, floodplain and stormwater management regulations.

Thank you for your anticipated cooperation in this matter.

## MEMORANDUM OF UNDERSTANDING

**TO:** The Town of Andover, MA  
**FROM:** The Town of North Reading, MA  
**RE:** Martins Brook – Floodway Operation and Maintenance Plan  
**DATE:** October, 2014

Please be advised that due to the history of flooding in the Martins Pond/Brook watershed and the potential risk of future flooding, the Town of North Reading has developed the Martins Brook Floodway Operation and Maintenance Plan in order to ensure that the Martins Brook is able to convey flood waters from Martins Pond to the Ipswich River without impedance. The Town of North Reading is providing this Memorandum of Understanding, along with a copy of our plan, and respectfully requesting that the Town of Andover monitor any current or proposed activities within the Martins Brook watershed taking into consideration the potential impact to homes and businesses located in the Martins Brook Floodplain. The Town of North Reading is seeking Andover's cooperation in this matter based on the following:

- Martins Brook and Martins Pond are significant flooding sources in the Town of North Reading, MA with a long history of causing damage to homes and businesses in the community during flood events.
- Martins Brook is a tributary to the Ipswich River, which is severely stressed from development in the watershed such that it has experienced reduced base flow during warm, dry periods and increased flood elevations (in excess of the effective FEMA 100-year flood elevations) on numerous occasions over the past two decades.
- The Town of North Reading and the Martins Pond Association have worked diligently for over a decade to minimize flood damage to homes located around Martins Pond, including the implementation of flood hazard mitigation plans.
- Martins Pond is fed by the Skug River, which originates and in the Town of Andover and passes through the Harold Parker State Forest, the state forest being a significant natural resource located with the Town of Andover.
- It is in the best interest of both Towns to ensure that new development in both communities does not create adverse stormwater impacts; increase flooding; result in filling or illegal activity in and along the floodplain that impedes flood flow and/or causes erosion; exacerbates the growth and/or decay of excess vegetation beyond that which is required for a healthy river ecosystem; and results in the accumulation of excessive sediment in the stream channel, especially from roadway maintenance operations.

Based on the above, the Town of North Reading encourages the Town of Andover to adopt a "No Adverse Impact" (NAI) stormwater policy, consistent with the Association of State Floodplain Managers NAI Policy that considers the impacts of runoff flow rates and volumes from activities that occur or are being proposed within the watershed. We are confident that the Town of Andover will continue to diligently enforce all local and state wetlands, floodplain and stormwater management regulations.

Thank you for your anticipated cooperation in this matter.

## MEMORANDUM OF UNDERSTANDING

**TO:** The Massachusetts Department of Conservation and Recreation (DCR)  
**FROM:** The Town of North Reading, MA  
**RE:** Martins Brook – Floodway Operation and Maintenance Plan  
**DATE:** October, 2014

Please be advised that due to the history of flooding in the Martins Pond/Brook watershed and the potential risk of future flooding, the Town of North Reading has developed the Martins Brook Floodway Operation and Maintenance Plan in order to ensure that the Martins Brook is able to convey flood waters from Martins Pond to the Ipswich River without impedance. The Town of North Reading is providing this Memorandum of Understanding, along with a copy of our plan, and respectfully requesting that DCR monitor within the Harold Parker State Forest for potential impact to homes and businesses located in the Martins Brook Floodplain. The Town of North Reading is seeking DCR's cooperation in this matter based on the following:

- Martins Brook and Martins Pond are significant flooding sources in the Town of North Reading, MA with a long history of causing damage to homes and businesses in the community during flood events.
- Martins Brook is a tributary to the Ipswich River, which is severely stressed from development in the watershed such that it has experienced reduced base flow during warm, dry periods and increased flood elevations (in excess of the effective FEMA 100-year flood elevations) on numerous occasions over the past two decades.
- The Town of North Reading and the Martins Pond Association have worked diligently for over a decade to minimize flood damage to homes located around Martins Pond, including the implementation of flood hazard mitigation plans.
- Martins Pond is fed by the Skug River, which originates and in the Town of Andover and passes through the Harold Parker State Forest, the state forest being a significant natural resource located in the Town of Andover.
- Harold Parker State Forest is in the Skug River watershed and contains a number of ponds with controlled outlets (dams), which if operated improperly (or fail), will exacerbate flooding in North Reading.
- It is in the best interest of the Town of North Reading and the Commonwealth of Massachusetts to minimize flood damage to the maximum extent practicable, especially through coordinated operational efforts that do not required large capital expenditures.

Based on the above, the Town of North Reading encourages DCR to adopt a "No Adverse Impact" (NAI) stormwater policy, consistent with the Association of State Floodplain Managers NAI Policy, that considers the impacts of runoff flow rates and volumes from activities that occur or are being proposed within the watershed. We are already confident that DCR will diligently enforce all state wetlands, floodplain and stormwater management regulations.

Thank you for your anticipated cooperation in this matter.