8.0 ADDITIONAL CONSIDERATIONS FOR MASTER PLAN DEVELOPMENT

8.1 Historical and Archaeological Assessment

The company Archaeological and Historical Services, Inc. (AHS) was retained to complete a historical and archaeological assessment of the study area in the context of the goals cited in this document. A copy of the report (dated October 2011) is included in Appendix I.

Two National Register-listed historic properties are within the project area. These are the bridge on Town Bridge Road and the Collinsville Historic District. The bridge will not be affected by any recommendations of the master plan, but four possible actions have the potential to affect contributing components of the Collinsville Historic District: the raising of the water level by installing flashboards or other structures on the dam, creation of a fish passage, construction of a river access from Bridge Street, and creation of a trail bridge across the river. These actions could affect the dam, gate structure, forebay, former hydroelectric plant, and New Hartford Branch railroad bridge piers and abutments. Assuming the actions are undertaken with federal or state funding, consultation with the State Historic Preservation Officer (SHPO) will be required once specific design plans are ready in order to minimize or avoid adverse effects on these components of the Collinsville Historic District.

Recommendations of the master plan also have the potential to affect Pre-Contact period (Native American) archaeological resources. Rivers such as the Farmington are known to have been important food and transportation resources, and the likelihood of there being significant Pre-Contact archaeological sites in undisturbed soils along the river's edge is high. Actions that could have an impact on unrecognized archaeological sites include the improvements at the Town Garage site, parking improvements on Town Bridge Road, sediment removal, and inundation resulting from raising the water surface elevation of the impoundment.

The AHS report includes a series of historical maps (Figures 5 through 9 in the report) that depict the presence of islands in the impoundment and their evolving characteristics over time. These graphics provide verification of the comments from some members of the public that islands and sandbars have always been present in the Upper Collinsville Mill Pond. Nevertheless, increased water depths appear to be desired in proximity to some of the islands.

Pages 7, 8, and 9 of the AHS report provide a detailed discussion of the potential impacts associated with Town Bridge Road parking improvements, the use of the 45 Bridge Street parcel, use of the old railroad abutments for a walkway, reuse of the Town Garage, sediment removal, and raising the water surface elevation. Of these, the Town Bridge Road parking improvements and the reuse of the Town Garage would likely require limited subsurface investigations and coordination with SHPO.

The conclusion of AHS relative to sediment removal having a low potential for disturbance is consistent with the understanding of the sediment discussed in this document. Specifically, the sediment involved with the Upstream Channel Sediment Removal alternative is aligned along the centerline of the channel in a narrow part of the impoundment, where wide former riverbanks are not present. The Mid-Channel and Expanded Mid-Channel Sediment Removal alternatives target broad deep pockets of sand that have been eroded, reworked, and re-deposited over time. The presence of undisturbed artifacts in these two areas is unlikely.

Other recommendations of this master plan would have minimal potential impacts to cultural resources. For example, recommendations involving signage, traffic calming, vegetation management or removal, and the like would not disturb soils to the extent that impacts could occur.

8.2 Fish Habitat Enhancements

As explained in Section 2.0, the company ERC was retained to provide an independent evaluation of fisheries resources and recommendations for the master plan.

According to ERC, numerous studies have shown that habitat heterogeneity resulting from instream structure (boulders, rocky outcrops, woody debris), beds of aquatic vegetation, undercut backs, and overhanging terrestrial vegetation is essential for healthy fish populations. Such features create fish spawning and nursery habitat, provide shelter from predators and high river flows, and provide substrate for attached algae and aquatic macroinvertebrates. Overall aquatic ecosystem productivity is increased by these habitat features. Insectivorous and omnivorous fish benefit from the increased abundance of epiphytic algae and macroinvertebrates while piscivores benefit from higher numbers and concentration of small fish (Angermeier and Karr, 1984; Gannon et al., 1985; Barwick and Kwak, 2004; Hartman and Titus, 2010).

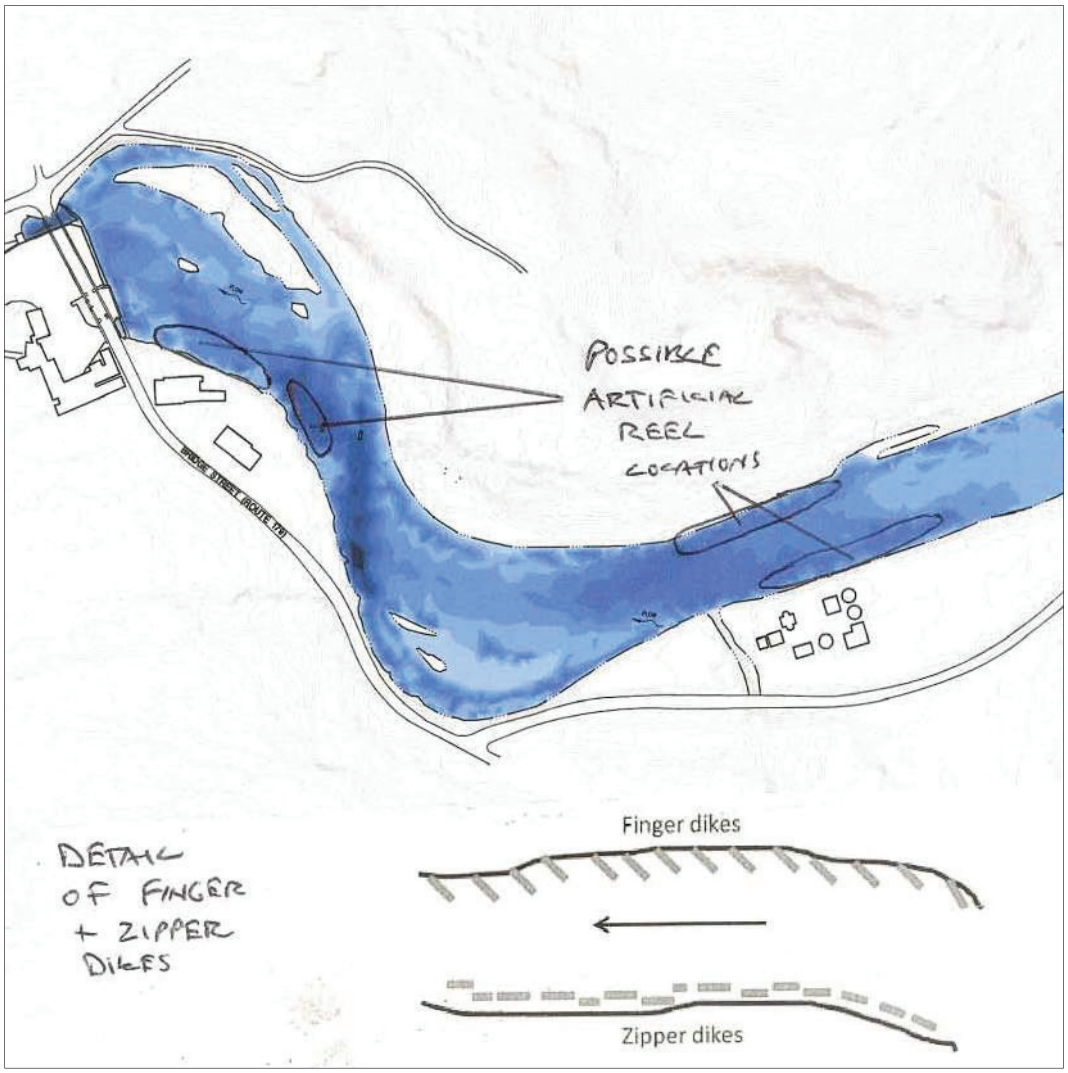
The Upper Collinsville Mill Pond currently has some areas of good fish habitat. Habitat features of note include rocky shallow water areas adjacent to the island and rocky outcrops that extend into the river in the upper portion of the impoundment. Shallow soft sediment areas associated with the islands at the bend in the river near Center Street and on the west side of the river near the dam also provide some fish habitat and are likely utilized as nesting areas by bass and sunfish.

Fish productivity in the Upper Collinsville Mill Pond could be enhanced by the installation of one or more artificial fish habitat structures. Artificial fish habitat structures, often referred as “artificial reefs,” increase habitat heterogeneity and have been shown to benefit fish populations in rivers, impoundments, and lakes. These structures may also enhance recreational fishing by concentrating game species (Boulding and Bonar, 2004). Artificial habitat structures in freshwater environments have been made of wood (Houser, 2007), tires (Moring and Nicholson, 1994), plastic

(Rogers and Begersen, 1999), rock (Binkowski, 1985; Creque et al., 2006; Hartman and Titus, 2010), and other materials (Bassett, 1994; Boulding and Bonar, 2004).

For the Upper Collinsville Mill Pond, ERC recommends that riprap dikes or rubble piles be used as artificial habitat structures. Riprap has a much greater longevity and resistance to high river flow and ice scour than wood or plastic structures. Riprap dikes have been shown to be particularly valuable as habitat for black bass (Micropterus spp.), sunfish (Lepomis spp.), rock bass (Ambloplites rupestris), and yellow perch (Perca flavescens) (Creque et al., 2006; Hartmann and Titus, 2010; H. Brundage, ERC, Inc., unpublished data). Riprap dikes have also been shown to increase the density and diversity of larvae of some fish, particularly minnows (Cyprinidae) (Niles and Hartman, 2011). Riprap provides cover and velocity shelters for these and other fish species.

The following graphic depicts potential locations of reef structures; three of these locations have been carried forward to the master plan:



The reef adjacent to the WPCF and Town Garage was not included in the master plan because of the high level of interest in developing a boat ramp and beach access in this area.

The dikes can be oriented perpendicular to flow and extend from the shoreline into the impoundment (finger dikes) or can be parallel to shore (zipper dikes). Rubble piles are typically circular in shape and entirely submerged. A typical dike suitable for the Upper Collinsville Mill Pond would be 30 to 40 feet in length, five to eight feet in width, and four to six feet in height. Rubble piles would be approximately 20 feet in diameter and four to six feet in height. Dikes and rubble piles would be constructed of granite or limestone rock of various sizes, ranging from approximately 0.5 to > 3 feet in diameter. The submerged dikes or rubble piles should have a minimum depth of at least one foot to avoid creating obstacles for canoeists and kayakers and a maximum depth of approximately 10 feet. Given the range of depths in the impoundment, this should not be problematic.

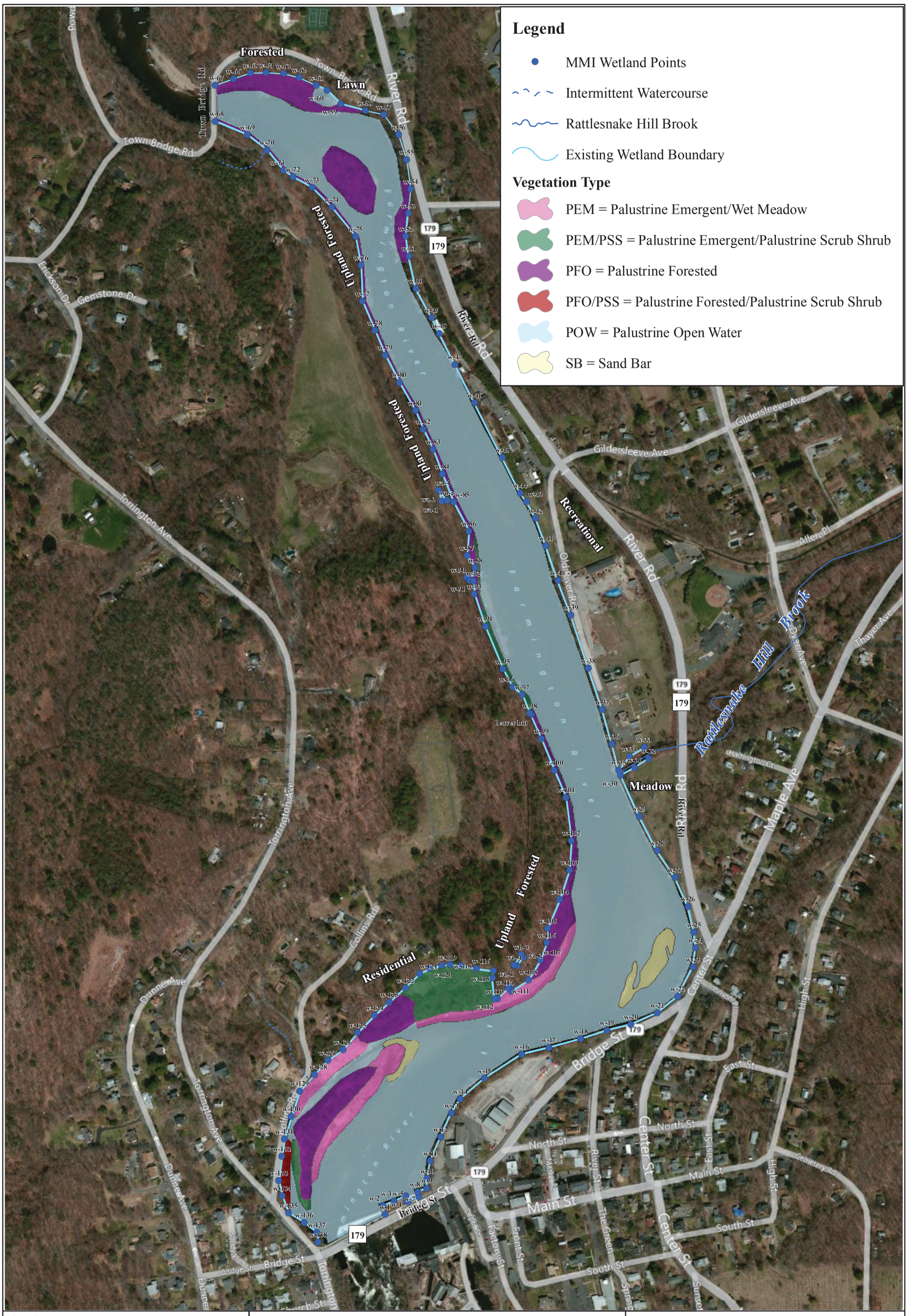
8.3 Wetland and Fish Habitat Considerations

The Pre-Feasibility Study by GZA included a comprehensive discussion regarding the potential environmental impacts to wetlands and wildlife of raising the water surface elevation three feet. As noted by GZA, "Three channel bars would likely be flooded. These bars provide safe resting sites for waterfowl and the shallows around the bars provide spawning sites for warm-water fish species, and perhaps suitable living substrate for freshwater mussels and other benthic invertebrate fauna."

Additionally, GZA noted the following:

> *"Prior assessments focused primarily on a net loss basis for wetland impacts, meaning the impacts were quantified mainly by way of assessing the change in inundation area assumed to be calculated based upon surface elevations of area surrounding the impoundment. The analysis contested that upland areas would be inundated and would become wetland areas, thereby offsetting currently vegetated zones that could be impacted by a deeper water inundation. In actuality, the special habitat attributes currently provided to the flora and fauna known or expected to inhabit the site could be impacted by the inundation in more subtle ways."*

The wetland vegetation evaluation conducted for this master plan has provided an opportunity to more closely examine potential impacts of raising the water surface elevation. Table 8-1 presents a breakdown of how wetland types would change immediately following an increase in the water surface elevation of three feet. Figures 8-1 and 8-2 depict the wetland types.



SOURCE:
2007-2009 aerial base from Microsoft Virtual Earth via ESRI subscription service
Wetland and vegetation mapping delineated by MMI Wetland Scientist on May 24, 2011

Funding provided by the Farmington River Enhancement Grants administered by the Connecticut Department of Environmental Protection

Figure 8-1: Existing Vegetation Cover Types

Upper Collinsville Mill Pond Master Plan

Location: Village of Collinsville
Canton, CT

Map By: SJB
MMI#: 1752-13
MXD: P:\Fig_8-1.mxd
Date: July 21, 2011
Revised: November 3, 2011
Scale: 1 inch = 400 feet

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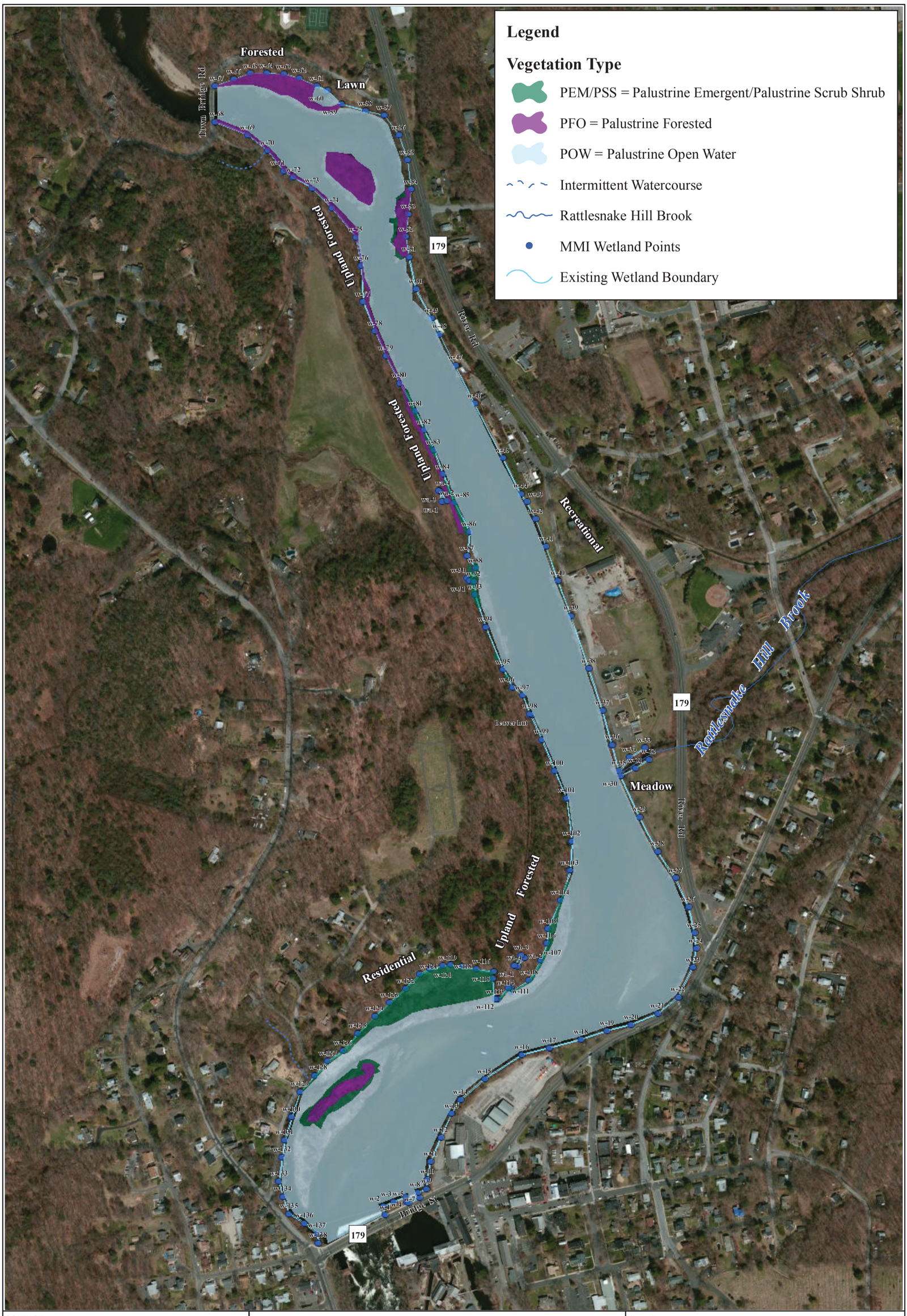

SOURCE:
2007-2009 aerial base from Microsoft Virtual Earth via ESRI subscription service
Wetland and vegetation mapping delineated by MMI Wetland Scientist on May 24, 2011

Funding provided by the Farmington River Enhancement Grants administered by the Connecticut Department of Environmental Protection

Figure 8-2: New Vegetation Cover Types

Upper Collinsville Mill Pond Master Plan

Location: Canton, CT

Map By: SMG
MMI#: 1752-13
MXD: P:\Fig_8-2.mxd
Date: October 20, 2011
Revised: November 3, 2011
Scale: 1 inch = 400 feet

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TABLE 8-1
Conversion of Wetland Types

Wetland Type	Existing Area (acres)	New Area (acres)
SB	0.99	0
PFO/PSS	0.32	0
PEM/PSS	2.43	3.70
PFO	7.22	3.32
PEM	2.77	0
POW	45.34	52.6
Total	59.07	59.62

SB = Sandbars
PFO/PSS = Palustrine Forested/Palustrine Scrub Shrub
PEM/PSS = Palustrine Emergent/Palustrine Scrub Shrub
PFO = Palustrine Forested
PEM = Palustrine Emergent
POW = Palustrine Open Water

Sandbars, Palustrine Forested/Palustrine Scrub Shrub, Palustrine Forested, and Palustrine Emergent/Wet Meadow areas would be lost. Palustrine Emergent/Palustrine Scrub Shrub and open water areas would increase in size. However, a total net loss of wetlands would occur in connection with the raising of the water surface elevation three feet.

Over time, it is likely that new wetland areas will develop because ground water proximal to the impoundment will rise, saturating previously drier areas. However, this conversion will take time and will likely be successful only where developed areas do not abut the impoundment, such as the west side.

Perhaps more significant is the potential loss of the deep riffle habitat on the northeast side of the island near Town Bridge Road and the very shallow (sometimes dry) riffle on the west side of this island. As GZA noted, "the CTDEP expressed concern regarding the inundation of shallow riffle or gravel bar areas at the northern limits of the existing impoundment and perhaps rendering these areas unsuitable for salmonid spawning." It is believed that these areas were subject to backwater conditions on a seasonal basis as recently as 2003 when flashboards were installed. ERC notes that abundant riffle habitats are available in the Farmington River upstream of the Upper Collinsville Mill Pond and in close proximity, which would help mitigate for the inundation of the riffles at the island. However, ERC further notes that the loss of these riffle habitats would not be mitigated by the reef structures that are recommended as part of the master plan as they serve fish communities differently.

8.4 ADA Compliance

The current ADA-compliant design standards are contained in the manual *2010 ADA Standards for Accessible Design* (Department of Justice, September 15, 2010). Because the current existing access points for water-based recreation at the Upper Collinsville Mill Pond have evolved over time rather than having been intentionally designed and constructed, none of the water access is considered ADA compliant. This is not the case for the trail system as components of the trail system have been designed to incorporate features that facilitate usage by individuals with disabilities.

Future improvements to the study area will afford an opportunity to increase ADA compliance and allow increased access for individuals with disabilities. Most notably, creation of a town-owned boat ramp and beach at the Town Garage site will include provisions for disabled persons to access the water. Enhanced access at the 45 Bridge Street site near the dam will provide fishing access to disabled persons.

Opportunities for increased ADA compliance in many areas of existing access will not be possible. For example, the configuration of access points like the Town Bridge Road trails to the cobble beach and Flaherty's Rock would not enable ADA accessibility.

8.5 Summary of Community Impacts

One of the primary concerns of land owners in the study area as well as many residents of the Town of Canton is that enhanced public access will significantly increase the number of users of the Upper Collinsville Mill Pond. These concerns were voiced at both public meetings and within the written comments in the recreational users' survey. The public believes that recreational is important and appropriate, but that the number of kayaks, canoes, swimmers, and trail users is already sufficient for the capacity of the area.

This plan also recognizes that private properties at the northern and southern ends of the study area are already supporting heavy recreational usage, such as the boat ramp and Collinsville Canoe and Kayak parking lot and the private land along Town Bridge Road. Meanwhile, town-owned properties along the east side of the impoundment are underutilized relative to recreational usage. For the above reasons, the emphasis of this master plan is on creating safety valves by providing enhanced public access at two publicly-owned sites: the 45 Bridge Street parcel (fishing, pedestrian uses) and the Town Garage site (parking and water access, among others).

Based on the substantial public outreach conducted for this study, the study area already supports a large number of local and out-of-town users. Recall from Section 2.8 that "over 40 canoeing and kayaking groups from seven states regularly use the river for group outings, and scores of individual boaters from around the Northeast use the river on their own. Satan's Kingdom, a steep-sided gorge with Class III white water, is the most heavily used stretch of the study segment, with over 2,000 tubers estimated on a peak use day" (Wild and Scenic River Study, 1995). While these are significant figures,

these groups and individuals are already using the entire Farmington River, and not all of them are found at the Upper Collinsville Mill Pond. The number of recreational users in the study area users is believed to be relatively fixed.

When this issue was raised during the second public information meeting, Mr. James MacBroom of Milone & MacBroom, Inc. provided a concise discussion to explain the balancing and distribution of public access and usage. He explained that the Upper Collinsville Mill Pond has likely reached a natural limit on the number of users that can and will be supported, such that relocating some of them from private properties on Town Bridge Road and Bridge Street to the Town Garage site would probably not cause a net increase. Mr. MacBroom used himself as an example of an experienced canoer; when he brings his canoe somewhere for paddling, he already has several destinations that he favors that are geared toward his experience level. The Upper Collinsville Mill Pond is not one of these destinations. The availability of a new boat launch and parking lot on the Town Garage site would not change his selection of a destination.

A similar example could be drawn for enhanced fishing access at the 45 Bridge Street parcel. Fishing is already occurring immediately adjacent to the parcel from the dam, the bridge, and other areas adjacent to the Collins Company buildings. It is also occurring upstream along the banks of the impoundment. Meanwhile, a very large number of individuals favor fishing the rapid sections upstream and downstream of Collinsville. The act of increasing fishing access at 45 Bridge Street will take some pressures off the use of the dam, bridge, and the nearby banks of the impoundment. However, it will not cause people fishing the rapid sections upstream and downstream of Collinsville to relocate their efforts to 45 Bridge Street.

In summary, the emphasis of this master plan is to offer publicly-owned access to the Upper Collinsville Mill Pond shoreline and water so the private property access in the study area will be relaxed. This is believed to be a very positive impact to the community and private property owners throughout the study area. However, it will not harm businesses such as Collinsville Canoe and Kayak, as the new areas of access will not offer the specific services provided by the businesses in Collinsville.

Community impacts from construction related to sediment removal and other recommendations of the master plan will be temporary. Although sediment removal is unsightly and can lead to truck traffic and noise whether accomplished through excavation or hydraulic dredging, the nuisance lasts only as long as the duration of the sediment removal project. After sediment removal is complete, the impact to the community will be positive, as depths will be increased in selected areas that are used by the public.

Community impacts from raising the water surface elevation of the Upper Collinsville Mill Pond will be somewhat variable depending on the location within the study area. For the most part, the community impact will be positive, as many individuals expressed their fondness for the depths that occurred when the flashboards were seasonally

installed. Furthermore, a negligible area of private land will be inundated, with the exception of the wetlands located in the southwest portion of the study area. Thus, usable land will not be lost.

Moderate community impacts from raising the water surface elevation are possible upstream of Flaherty's Rock where riffles are found along the island. This flowing part of the river possesses recreational value to paddlers, waders, and some swimmers. For example, day camp children were observed floating down this section of the river.

8.6 Summary of Environmental Impacts

The master plan recommendation with the most significant overall environmental impact would be raising the water surface elevation. Individual impacts have been noted throughout this document and can be grouped into two main categories:

- Inundation of wetlands with a net loss of 6.7 acres immediately upon raising the water surface, including islands and emergent marshes that are used by birds and wildlife. New wetlands may develop over time at the periphery of the impoundment, but would not be as extensive as the current wetlands. A lack of suitable and available land area adjacent to the impoundment would preclude creation of new wetlands as mitigation for lost wetlands.

- Inundation and loss of riffle characteristics on both sides of the island near Town Bridge Road, with loss of a deep riffle on the east side and loss of a shallow to dry riffle on the west side. The riffle impacts would cause a corresponding loss of fisheries habitats that would not be replaced in kind with the artificial reef structures for enhanced fisheries habitats in the impoundment.

To the extent that these environmental impacts are undesirable by the public at large, they also may cause negative community impacts to be weighed against the positive impacts described in Section 8.5.

Like the community impacts, the environmental impacts associated with sediment removal are mainly temporary. The water control associated with conventional sediment removal has a significant impact on impoundment water surfaces and river flow patterns, but is reversible. During the drawdown process, aquatic organisms have time to relocate to deeper waters, and fish will remain in the flowing portions of the river channel. The seasonal time constraints imposed by regulatory agencies are often protective of upland and aquatic species, as well.

Hydraulic dredging causes a much lower impact to the impoundment because the water surface and flow patterns are not disrupted. However, the abrupt nature of hydraulic dredging provides less time for aquatic organisms to relocate during the project, and they may be caught in the initial path of dredging. The seasonal time constraints imposed by regulatory agencies may be protective of aquatic species.

After a sediment removal project, adverse impacts to the environment will dissipate and the functions and values of the impoundment will be restored. As noted in Section 7.3, the post-dredging sediment surface will have similar or identical quality as the current sediment surface on the bottom of the impoundment. Aquatic organisms will repopulate the areas where sediment was removed. In the case of one of the alternatives (the Expanded Middle sediment removal alternative), sandbars and the less-vegetated island located near the Bridge Street/River Road intersection would be removed. This would cause a loss of habitat for wildlife and birds that favor very sandy, shallow waters and islands. The adjacent island would not be removed, and as such it could help accommodate the lost functions and values.

All of the other recommendations of this master plan will have minimal adverse environmental impacts or very temporary adverse environmental impacts that can be mitigated. The regulatory processes described in Section 9.0 will vet the environmental concerns and help identify and secure the controls needed to minimize impacts.

9.0 REGULATORY REQUIREMENTS

Numerous federal, state, and Town of Canton approvals will be necessary for implementing the individual recommendations of the master plan. The following sections describe the various programs and jurisdictional issues. The table in Appendix J identifies the specific approvals needed for each recommendation of the master plan.

9.1 Federal Emergency Management Agency

Section 2.9 of this plan described the relationship of the floodway and floodplain to the Farmington River and the Upper Collinsville Mill Pond. FEMA requires that a Conditional Letter of Map Revision (CLOMR) be issued for any project that results in any increase of the water surface elevation in the regulatory floodway during a base flood event or an increase of one foot (or greater) in the water surface elevation in the Special Flood Hazard Area during a base flood event. The construction of structures or placement of fill in a floodplain or floodway will tend to cause an increase in floodwater elevation.

Thus, implementation of some of the recommendations of the master plan may require that the Town of Canton commission a hydraulic study and apply for a CLOMR from FEMA. A hydraulic study typically includes simulation of water surface elevations caused by proposed projects using the model that was developed for the Flood Insurance Study (FIS) prepared by FEMA. In cases where the FIS model is not available, a new model is developed and calibrated for making predictions about impacts to the base flood elevation. Ideally, elements of the project are designed to mitigate for any potential impacts, such that the net impact to the water surface elevation is zero. Mitigation is usually compensatory in nature, with excavation in the floodplain or floodway to balance the proposed structure or fill material.

9.2 U.S. Army Corps of Engineers

The threshold for a permit from the U.S. Army Corps of Engineers (and hence, the DEEP's 401 Water Quality Certificate described below) is 5,000 square feet of wetland disturbance. The U.S. Army Corps of Engineers permit process is further divided into the Programmatic General Permit (PGP) and the Individual Permit. Individual Permits are typically reserved for significant activities whereas General Permits are reserved for lesser activities.

Either the removal of sediment or a permanent increase of the water surface elevation would likely require an Individual Permit from the U.S. Army Corps of Engineers. With reference to Table 8-1, the shifts in wetland types would exceed 5,000 square feet. Coverage under Category 1 of the PGP is precluded because a different section of the river (outside the study area) is under review for the Wild and Scenic designation and because impacts from sediment removal or raising the water surface would exceed 5,000

square feet. Coverage under Category 2 of the PGP is likely precluded because impacts would exceed one acre.

Implementation of individual recommendations from the master plan may or may not require an Individual Permit or a Category 2 PGP depending on the associated impact to wetlands. However, Category 1 of the PGP is precluded because the downstream section of the river is under review for Wild and Scenic designation.

The existence of the upstream Wild and Scenic designation does not cause any additional regulatory approvals for projects in the Upper Collinsville Mill Pond study area. Designation as Wild and Scenic neither prohibits development nor gives the federal government control over private property. Instead, protection of the river is provided through stewardship programs and through local, State, and federal regulations such as the PGP described above. However, the Wild and Scenic Act prohibits federal support for actions such as the construction of dams or other instream activities that would harm the river's free-flowing condition, water quality, or outstanding resource values. Because the Upper Collinsville Mill Pond is already impounded by a dam and is not located in a Wild and Scenic section of the river, the Wild and Scenic Act would not likely preclude the recommendations of this master plan.

9.3 Connecticut Department of Energy & Environmental Protection

401 Water Quality Certificate

The DEEP Inland Water Resources Division (IWRD) would require issuance of a 401 Water Quality Certificate in connection with the Corp's review and issuance of an Individual Permit. Typically, an applicant such as the Town of Canton would apply for all of the IWRD permits simultaneously. The others include the Water Diversion, Flood Management Certificate, and Dam Construction.

Water Diversion Permit

The Water Diversion Permit was authorized by the Water Diversion Policy Act of 1982 and necessitates a permit for consumptive water diversions (which is not applicable here) and nonconsumptive water diversions. In the past, any action that would change the cross-sectional area of a watercourse or impoundment with a watershed area exceeding 100 acres was subject to the provisions of the Water Diversion Policy Act. Recently, the DEEP has indicated that hydraulic dredging may not always necessitate the Water Diversion Permit because water control is not necessary. However, conventional excavation of sediment would require a Water Diversion Permit as significant water control (drawdown and channelizing of the river) would be required during the project.

Implementation of individual recommendations from the master plan would not likely require a Water Diversion Permit. Even in-water recommendations such as construction of a new boat ramp should be allowable without this permit.

Flood Management Certificate (FMC)

Any state agency proposing an activity within or affecting a floodplain or that impacts natural or man-made storm drainage facilities must submit a FMC application. Such activities include (a) any structure, obstruction, or encroachment proposed for emplacement within a floodplain area; (b) any proposal for site development that increases peak runoff rates; (c) any grant or loan that affects land use, land use planning, or the disposal of state properties in floodplains; or (d) any program regulating flood flows within the floodplain. Because the Upper Collinsville Mill Pond and its dam are owned by the state, it is possible that the DEEP may require the FMC. Coupled with the strong possibility that any sediment removal or increase in water surface elevation could require state funding in the form of a grant or loan, the FMC would likely be required for some of the recommendations of the master plan.

In making a decision to approve or reject a state agency's flood management certification, the DEEP must consider whether the proposed activity is consistent with state standards and criteria for preventing flood hazards to human life, health, or property and with the provisions of the National Flood Insurance Program (NFIP) and municipal floodplain regulations. It must also ensure that it does not adversely affect fish populations or fish passage and does not promote intensive use and development of flood prone areas. Pursuit of a CLOMR (described above) typically facilitates the issuance of a FMC.

Implementation of individual recommendations from the master plan may or may not require the FMC, depending on the nature of the proposed activity. However, it should be noted that even small projects involving construction will trigger the FMC if the state is involved through ownership or funding.

Dam Construction

The IWRD requires a dam construction permit for most activities involving dams. Any of the alternatives described in the Pre-Feasibility Study and this Master Plan (flashboards, stoplogs, rubber dam, or crest gate) would require a significant review by the DEEP under this permit program. Installation of a fish ladder would likewise trigger the Dam Construction permit. However, implementation of individual recommendations from the master plan would not likely be covered unless the dam were involved.

Stream Channel Encroachment Lines (SCEL)

Stream channel encroachment lines have not been established for this section of the Farmington River. Therefore, SCEL permitting is not necessary.

Construction Stormwater General Permit Registration

This general permit applies to all discharges of stormwater and dewatering wastewater from construction activities that result in the disturbance of one or more total acres of land area. Depending on the nature of the project and the area of disturbance, development and submittal of a stormwater pollution prevention plan may be required as well. Implementation of individual recommendations from the master plan may trigger the provisions of this general permit. For example, conversion of the Town Garage site to a parking area with boat ramp and beach access would require the general permit whereas wayfinding signage would not.

Wastewater Discharge Permit

The Water Permitting and Enforcement Division of the DEEP may regulate hydraulic dredging. Specifically, there is a potential need for a permit associated with the return (discharge) of excess water back to the Upper Collinsville Mill Pond during dewatering. In some instances, the DEEP can provide input to the local permitting process provided that minimal chemical additions are made to aid in the dewatering of sediments. The DEEP could then recommend that the local permit include monitoring of water quality parameters including chemical analysis of the known constituents of concern in the sediment as well as potential analysis of residual concentrations of chemicals added during dewatering.

As an alternative to providing input to the local permitting process, DEEP could issue a Temporary Authorization (TA) to allow for the water discharge. This option would be employed if significant chemical additions were anticipated. A TA permit is applicable to activities of 30 days duration or less although one 30-day extension is allowed provided the extension is requested prior to the expiration of the original TA. Discharge water quality monitoring requirements would likely be similar to the conditions associated with the local permit process described above. For hydraulic dredging dewatering durations exceeding 60 days, which would be possible depending on the sediment removal alternative selected by the town, a water discharge permit would need to be obtained instead of a TA.

Sediment Disposal or Reuse

Section 7.3 of this document described the regulatory process related to the fate of sediment removed from the impoundment. The analytical results of the sediment samples suggest that if the upper four feet of sediment is removed from the impoundment that this material could be designated for beneficial reuse in accordance with draft CT DEEP regulations. The removed material would likely meet the definition of "conditional fill" and, as such, would be deemed suitable for "use, reuse, or recycling as fill, including as structural fill, or as a grading material…." Given the draft status of the regulatory provisions, it is expected that the approval by the Commissioner of the DEEP

will be required for any potential reuse of dredged sediment; however, at this time, it appears that little or no restrictions would apply to its reuse.

9.4 Connecticut Environmental Policy Act

The purpose of the Connecticut Environmental Policy Act (CEPA) is to ensure that a proposed project is evaluated to determine if it will have significant impacts on the physical, biological, social, or economic environments. This evaluation is typically documented in an Environmental Impact Evaluation (EIE).

The Connecticut Office of Policy and Management (OPM) prepares and updates guidance documents along with other state agencies to help project proponents determine whether a CEPA evaluation is needed. The following is taken from the current Generic Environmental Characterization Document (ECD) revised and effective to October 5, 2010:

> I. Typical Actions For Which Environmental Impact Evaluations Shall Always Be Prepared. Such actions may include, but are not limited to, instances where the State is obligating the following types of development through State funding or agreements:
>
> a. Construction of new sewage treatment plants;
> b. Construction of hazardous waste disposal facilities;
> c. Construction of low-level radioactive waste disposal facilities; and
> d. Construction of coal-fired heating plants.
>
> II. Typical Actions Whose Degree of Impact Is Indeterminate, But Could Have Significant Environmental Impacts. When any of the following actions are proposed, including, but not limited to, instances where the State is obligating the following types of development through State funding or agreements, the sponsoring agency shall conduct an early public scoping process in accordance with Section 22a-1b(b) of the Connecticut General Statutes (CGS). The sponsoring agency shall take into consideration comments received and shall prepare a written memorandum that documents its findings and subsequent determination of the proposed action's environmental significance using the criteria set forth in Section 22a-1a-3 of the Regulations of Connecticut State Agencies. Said memorandum shall be posted in the Environmental Monitor, unless the sponsoring agency determines that an environmental impact evaluation shall be prepared pursuant to CGS Section 22a-1b(c).
>
> a. Construction of, addition to, or major alteration involving a change in use of a State leased, licensed, or owned facility involving 100,000 sq. ft. or greater of floor space if the facility is located in a Regional Center or Neighborhood Conservation Area, or 25,000 sq. ft. or greater of floor space if the facility is located outside of such areas as defined by the locational guide map of the

Conservation and Development Policies Plan for Connecticut. A facility is defined as one or more concurrently planned or envisioned structures on a site, the sum total of which would equal or exceed the applicable figure for the project location;
b. Construction of new paved roads or lane additions to existing roads where the State's cost of such which would equal or exceed one million dollars ($1,000,000) using current industry cost estimates;
c. Construction of new parking lots, garages, or additions thereto, that provide for an increase in capacity of 200 vehicles or more;
d. Construction of new, or changes to, dams on watercourses resulting in a permanent change in water level of more than four (4) inches;
e. Capacity expansion of sewage treatment plants, hazardous waste or low level radioactive disposal facilities and coal fired heating plants;
f. Demolition or major alteration of any facility (i.e., building or structure) or site listed or eligible to be listed on the National or State Registers of Historic Places as determined by the State Historic Preservation Office; and
g. Any other action that may significantly affect the environment in an adverse manner. The significance of a likely consequence of an action should be assessed by the sponsoring agency and/or the participating agency, as the case may be, in connection with its setting, its probability of occurring, its duration, its irreversibility, its controllability, its geographic scope, its magnitude, and regulatory requirements.

III. Any and all joint federal/state actions for which environmental assessments or environmental impact statements are prepared pursuant to the National Environmental Policy Act (NEPA), as amended, shall be recognized as meeting the Connecticut Environmental Policy Act (CEPA) requirements provided that such NEPA documents meet, and are circulated in accordance with, the CEPA document-equivalent requirements.

IV. Actions which do not warrant a review pursuant to CEPA. Notwithstanding the provisions of II.f. above, the following actions have been shown by past agency experience to have impacts which are determinate, sufficiently limited in scope or covered under specific state or federal requirements other than CEPA or NEPA, and include a determination by the State Historic Preservation Office, whenever appropriate, that there is either No Effect or No Adverse Effect to historic, architectural or archaeological resources.

a. Maintenance, repairs, or renovations of facilities;
b. Demolition of facilities;
c. Environmental remediation at facilities or property;
d. Energy conservation measures; and
e. Licenses for non facility-related purposes.

Sections II(d) and II(f) in the ECD (underlined for emphasis, above) imply that some of the components of the master plan *could* trigger a CEPA evaluation and preparation of an EIE. At a minimum, the project proponent would need to comply with the requirements of Section II, such as public scoping.

The DEEP maintains its own ECD with many of the same provisions of the OPM's ECD, plus some additional requirements for CEPA evaluations. The DEEP guidance provides the following:

> I. Typical agency actions for which environmental impact evaluations shall always be prepared: None.
>
> II. Typical agency actions whose degree of impact is indeterminate but which could have significant environmental impacts. For each of these actions an environmental assessment shall be undertaken to determine whether an environmental impact evaluation or a finding of no significant impact shall be prepared.
>
> 1. Construction of beach and shore erosion control projects (no federal funding).
> 2. Construction of flood control projects except projects which essentially consist of drainage improvements (no federal funding).
> <u>3. Construction of a new State-owned dam or repair or alteration of an existing dam that results in a permanent increase or decrease in water level greater than 4 inches.</u>
> 4. Sewage construction projects financed through the Clean Water Fund involving the construction of new sewage treatment plants or expansion of the hydraulic capacity at existing plants.
> 5. Sewage construction projects financed through the Clean Water Fund, that are not sponsored by another state agency, involving the extension of existing or new sewer lines into a previously unsewered area for which: A.) pipe sizing allows for or anticipates significant future growth or B.) environmentally sensitive areas will be traversed or potentially impacted.
> 6. Capital improvement grants for long-term provision of potable water for which: A.) pipe sizing allows for or anticipates significant future growth or B.) environmentally sensitive areas will be traversed or potentially impacted.
> <u>7. Construction of new boat launching facilities, or enlargements of existing launching facilities exceeding 25 vehicles or 50% of existing vehicle capacity, whichever is greater.</u>
> 8. Construction of shooting ranges.
> 9. Any development on DEP lands which results in an increase in the instant capacity of the facility by 200 vehicles.
> 10. Controlled burns in excess of 20 acres on DEP lands.
> 11. Harvesting of commercial forest products in a developed state park resulting in a total harvest in excess of 100,000 board-feet.

12. Grants for the construction of solid waste volume reduction facilities that are not covered by a general permit.
13. Construction of, addition to, or major alteration involving a change in use of a State leased, purchased or owned facility involving 25,000 square feet or more of floor space. A facility is defined as one or more concurrently planned or envisioned structures on a site, the sum total of which will equal or exceed 25,000 square feet.
14. Construction of new paved roads or major lane additions to existing roads which exceed $500,000 in capital costs.
15. Demolition or major alteration of any building, structure, or site listed on the State Register of Historic Places unless certification is obtained from the State Historical Commission that either there will be no significant adverse historical impact or no feasible and prudent alternative exists to the proposed action.
16. Any other action not listed above which may significantly affect the environment in an adverse manner. The significance of a likely consequence should be assessed by the agency in connection with its setting, its probability of occurring, its duration, its irreversibility, its controllability, its geographic scope and its magnitude.

Actions that have no environmental impact and for which environmental assessments are not required, except as noted in #15 above, include repairs and renovations of state facilities, replacement of a structure's architectural features, interior construction and/or renovations, additions and/or renovations to lighting, fire alarms, heating/cooling and mechanical systems, roof repairs, chimney repairs, etc.

III. Any joint federal/state action for which an environmental impact document is prepared pursuant to the National Environmental Policy Act and for which DEP is the cognizant or sponsoring state agency shall be recognized as meeting CEPA requirements provided that such environmental impact document is circulated in accordance with CEPA regulations.

Sections II(3) and II(7) in the ECD (underlined for emphasis, above) imply that some of the components of the master plan *could* trigger a CEPA evaluation and preparation of an EIE. At a minimum, the project proponent would need to comply with the requirements of Section II, including preparation of an "environmental assessment" (EA) to determine if the full CEPA evaluation and EIE would be needed.

Finally, the Connecticut Department of Public Health (DPH) also maintains an ECD. Section II(D) of the DPH's guidance specifies that "Construction of new State-owned dams or dam changes resulting in a permanent change in water level" is an action whose degree of impact is indeterminate but that could have significant environmental impacts, requiring an EA. The significance of the DPH guidance is that any change to a state-owned dam is covered if the water level is changed whereas the DEEP guidance specifies that the change must exceed four inches.

Given the complexities of the CEPA process and the various potential triggers, the Town of Canton should pursue master plan recommendations strategically. For example, if a new boat ramp and a dam modification will both trigger an EIE, the town should conduct only one single EIE to evaluate both at the same time, along with any other important recommendations of the master plan. The alternative would be to prepare separate EIEs every time a recommendation is implemented, which could prove time consuming and costly.

9.5 Connecticut Department of Transportation

Because Bridge Street and River Road are sections of State Route 179, the Connecticut Department of Transportation will have jurisdiction for certain activities involving signage, modification of the road surface, and provision of a driveway to the Town Garage property in connection with reuse of the parcel. These approvals are generally handled through encroachment permits.

9.6 Town of Canton

Inland Wetlands and Watercourses

The municipal Inland Wetlands Agency is charged with issuing permits for compliance with the Inland Wetlands and Watercourses Act. Nearly all of the recommendations of the master plan would require some level of Canton Inland Wetlands Agency involvement whether a formal permit is required or not. The town's best course of action is to approach the agency for a jurisdictional determination when planning to implement most of the recommendations of the master plan. Exceptions would include projects outside the agency's review area of 100 feet as measured laterally from wetlands and watercourses.

Zoning Commission

Zoning Commission review and permitting may be necessary for some of the recommendations of the master plan. Examples of projects that may require permits include modifications to the Town Garage site to accommodate parking, a boat ramp, and beach access; modifications to the 45 Bridge Street site to enhance public access and fishing; sediment excavation and removal from the impoundment; and hydraulic dredging (due to the significant space required for dewatering on land).

The Farmington River Protection Overlay District ("FRPO District") is a protected corridor of water and land along the entire length of the Farmington River within the Town of Canton consisting of the River and certain shoreline areas. Given the additional protections afforded by this overlay, a Certificate of Zoning Compliance, Special Exception application, Site Development Plan or other permit is needed for any site alterations, re-grading, filling or clearing of vegetation in the overlay zone. A number of

as-of-right uses are listed in the zoning regulations, but these must not contradict the general provision that prevents unauthorized site alterations, re-grading, filling or clearing of vegetation in the overlay zone.

In reviewing an application for Special Exception within the FRPO District, the applicant shall submit a Site Plan and provide documentation that conditions of the overlay regulations apply and that the proposal is designed to minimize disturbance within the FRPO District. In all cases, clear cutting of trees and shrubs is prohibited.

Planning Commission

The Planning Commission reviews and makes recommendations for municipal improvements such as streets, parks, playgrounds, schools, land acquisition, and utility extensions. As such, many of the recommendations would be subject to Planning Commission review and approval, although it is recognized that the commission does not utilize a permit process for such approvals.

Design Review Team

The Design Review Team (DRT) reviews site development applications submitted or proposed to be submitted to the Zoning process. The DRT works to positively impact the future development of the community from a perspective of aesthetics and design considerations. Many recommendations are made through the DRT review process to enhance and/or preserve the character of the town. Design Review provides a mechanism for designs to be developed with Town input prior to the submission of a final site design by an applicant. The DRT collaborates with applicants using the standards and guidance represented in Section 69 of the Canton Zoning Regulations.

Collinsville Historic District Commission

Approval for several recommendations of the master plan may be needed from the Collinsville Historic District Commission due to the historic nature of the existing structures.

10.0 FINDINGS AND RECOMMENDATIONS

10.1 Findings

1. The Farmington River supports a wide range of water-dependent uses including public water supply, waste assimilation, hydroelectric power generation, fish and wildlife habitat, recreational fishing, swimming, boating, tourism, and scenic resources. Adequate river flow is essential for all of these activities and is closely regulated by the U.S. Army Corps of Engineers and the Metropolitan District's West Branch Reservoirs in accordance with formal operating agreements.

2. The Farmington River basin has a long history of devastating floods, resulting in an extensive program to minimize damage. Major floods in this century occurred in November 1927, March 1936, September 1938, December 1948, August 1955, October 1955, and August 1969. The August 1955 event in particular severely damaged sections of Collinsville. The State of Connecticut and U.S. Army Corps of Engineers responded to historic flooding by constructing a series of flood control improvements that are still in place today.

3. Water quality of the Farmington River is designated Class B. The designation supports the following uses: habitat for fish and other aquatic species, wildlife, recreation, and agricultural and industrial supply. The water in the Upper Collinsville Mill Pond is considered of sufficient quality for recreational uses.

4. The Farmington River supports an extensive variety of passive and active recreational activities extending over the full length of the river. The designated Wild and Scenic River segment and downstream area together comprise the most heavily stocked trout stream in the state and the most intensely fished section of the entire river. Satan's Kingdom, a steep-sided gorge with Class III white water, is the most heavily used stretch of the study segment. The substantial combination of recreational attributes in the river led to the designation as a regionally unique recreational resource.

5. The Upper Collinsville Mill Pond is an impoundment formed by the Upper Collinsville Dam. Both the dam and the impoundment are owned by the State of Connecticut. The Upper Collinsville Mill Pond extends from Route 179 upstream approximately to Town Bridge Road. It is a shallow water pond and generally has low, steep banks with a limited wetland fringe on the east bank.

6. The Town of Canton commissioned a feasibility study of repowering the Collinsville dams for hydroelectric power generation. The study included an analysis of the potential methods of restoring hydropower generation to one or both of the upper and lower dams and the costs associated with restoring hydropower generation. Any option for restoring hydropower generation to the Upper Collinsville Dam would necessitate raising the water surface elevation three feet.

7. Bathymetric survey of the Upper Collinsville Mill Pond was conducted during the month of May 2011. During the survey, the water surface elevation was measured at 286.02 feet above sea level (NAVD 88) in the main part of the impoundment downstream of the island and riffles near Town Bridge Road. The deepest elevation of the bottom of the impoundment was measured at 275 feet, indicating maximum depths of 11 feet. Conversely, large areas of the impoundment have a depth of two feet or less, especially around the islands.

8. Depths are greatest in the raceway beneath the western end of the Bridge Street bridge; in the area adjacent to Collinsville Canoe & Kayak, extending upstream to the group of islands at the Bridge Street/River Road intersection; across from the mouth of Rattlesnake Brook; east of the island near Town Bridge Road and extending slightly downstream past the outcrops on the east bank; and upstream of the island near Town Bridge Road, extending to the Town Bridge Road bridge.

9. Depths are most shallow at the upstream end of the island located along Collins Road; around the group of islands at the Bridge Street/River Road intersection; and adjacent to the nursery. The portion of the channel on the west side of the island near Town Bridge Road is largely exposed from May through the summer and early fall, with little to no flow through the area.

10. Submerged bedrock outcrops are present near the upstream end of the nursery at Flaherty's Rock, adjacent to Collinsville Canoe & Kayak, and adjacent to the small public area on the north side of Bridge Street. Bathymetry is influenced by the bedrock in these areas and is therefore variable.

11. As recently as 2003, the water level of the impoundment was raised each spring by installing temporary wood flashboards or panels along the top of the dam. The level was reportedly raised three feet in this manner to an elevation of 289 feet. This would have caused the maximum depth to be approximately 14 feet, and the large areas of water with negligible depths at the present time would have been at least three feet deep.

12. The wetland vegetative cover types present within the study area are Palustrine Open Water (POW), Palustrine Emergent Marsh (PEM), Palustrine Scrub Shrub (PSS), and Palustrine Forested (PFO). The principal functions and values of the wetland system around the impoundment are flood flow alteration, shoreline stabilization, wildlife habitat, nutrient and toxicant removal, fishery habitat, production export, and visual/aesthetic quality.

13. The Farmington River's diverse aquatic habitats and high water quality support 37 native and introduced species of fish. The reproduction of brown, brook, and rainbow trout has been the focus of fisheries management in the Farmington River. Fisheries management has also focused upon the reintroduction of Atlantic salmon to the Connecticut section of the Farmington River. Three DEEP surveys at the upstream

end of the impoundment yielded 2,627 specimens of 17 species of fish. The most abundant species were Atlantic salmon (36.0%), longnose dace (24.7%), blacknose dace (24.5%), white sucker (6.9%), and tessellated darter (4.3%). A total of 236 specimens of nine species were collected below the Lower Collinsville Dam. The most common species in this sample were American eel (42.0%), longnose dace (18.6%), Atlantic salmon (13.1%), tessellated darter (11.4%), brown trout (10.6%), and smallmouth bass (2.5%).

14. The DEEP's Natural Diversity Database includes records of a state threatened species, the bald eagle (Haliaeetus leucocephalus), and two species of special concern, Wood turtle (Glyptemys insculpta) and Eastern Box turtle (Terrapene carolina), in the vicinity of the Upper Collinsville Mill Pond.

15. Six zoning districts and one overlay zone are located within or intersect with the study area. These are the Special Business (SB) zone, Light Industry (LI) zone, the Residential ½ Acre zone (AR1), the Business (B1) zone, the Industrial Heritage zone (IH-I) corresponding to the old Collins Company buildings and associated land, and the small Heavy Industry (HI) zone. The Farmington River and the Upper Collinsville Mill Pond are within the Farmington River Protection Overlay zoning district.

16. The study area includes six Assessor maps and hundreds of parcels due to the small parcel sizes in the Collinsville village center. Private residential properties and a cemetery dominate the west side of the river in the study area, whereas a combination of private residential, Town-owned, and commercial properties lie along the east side of the river.

17. An Environmental Data Resources, Inc. database documents the various municipal and CT DOT land uses in the study area on the east side of the Upper Collinsville Mill Pond, including the town's salt storage facility, WPCF, and town garage; and the CT DOT maintenance garage. The commercial and industrial land uses listed in EDR records and the DEEP's inventory are the Collinsville Company and Riverside Gulf. These records are not direct evidence of potential environmental conditions, but they indicate that future use of some properties may necessitate more detailed environmental assessments.

18. Recreational observations were conducted on March 20, April 30, July 7, July 17, and October 15, 2011. With only a few exceptions, public access in the study area and public access to the Upper Collinsville Mill Pond are largely occurring without any formal access identified or any procedures in place.

19. With the loss of the flashboards circa 2003, boating in the Upper Collinsville Mill Pond has been informally restricted to non-motorized watercraft such as canoes and kayaks. Motorboats and jet skis are no longer found utilizing the impoundment

mainly due to the decreased water depths and the potential to encounter either sandbars or submerged outcrops.

20. The Farmington River greenway trail is a significant corridor of public access in the study area. The trail is a designated public accessway. People were observed walking, jogging, bicycling, walking dogs, and rollerblading on the trail. Parking access to the trail is available at the Town Garage parking lot and in areas south of Collinsville. However, parking access at the Town Garage parking lot is not clearly designated.

21. A survey of recreational users in the study area was conducted using Survey Monkey. The survey was open from May 13, 2011 through July 1, 2011. Walking and biking are by far the most commonly reported land-based activities for people who visit the impoundment whereas kayaking was the most common water-based activity. Existing parking and trails were the most commonly reported needs that were being met. However, these two things (plus a public boat launch) were also reported as "most important to develop." A perception of poor water quality appears to be the most common reported problem. However lack of access, poor access points, and lack of restrooms were the next-highest cited problems. Some survey respondents were concerned that too many people are using the resource and that improvements would invite more people. An equal number of people enjoy the area in its current state and do not believe that any "improvements" are necessary.

22. Unsolicited responses about motorized boats, dredging, and raising the water surface elevation were tallied because of their importance in the town. A greater number of people favored the prohibition of motorized boats than the allowance of motorized boats. A greater number of people favored dredging over not dredging, and a greater number of people favored an increase in the water surface elevation over not increasing the elevation.

23. Two respondents probably encapsulated the survey themes best when they wrote the following: "I'm all for improving the recreational use of the river to regain what we lost when the state discontinued the use of the flashboards, but I'm opposed to disturbing the quiet natural nature of the river;" and "We love the natural resources in Collinsville and support any thoughtful enhancement of access that would respect the natural beauty and history of the area providing a variety of opportunities to different segments of the population."

24. There are generally two methods of increasing water depths: raising the normal pool water surface elevation and removing sediment through dredging or conventional excavation. Although an increase in the water surface elevation has been evaluated to facilitate hydropower development, it could be accomplished separately if hydropower is ultimately not pursued by the Town of Canton.

25. Although the most commonly discussed method for increasing the water surface elevation is to replace the flashboards that were used as recently as 2003, there are three additional methods of raising the water surface. Stoplogs can be installed, a rubber bladder dam can be installed in the dam to allow for greater control over the timing and duration of raised water surfaces, or a crest gate can be installed in the dam to allow for control over the timing and duration of raised water surfaces that is similar to that allowed with a bladder dam.

26. Two general methods of sediment removal are available. These are hydraulic dredging and conventional excavation. In some cases, both methods are used for removing sediment from impoundments.

27. A sediment sampling program was developed to characterize the quality of the sediment in the bottom of the Upper Collinsville Mill Pond. Nine borings were completed on September 21 and 22, 2011. Borings were concentrated in the areas of greatest interest for sediment characterization. In other words, areas that were not likely to be considered for dredging, sediment removal, or other activities were not targeted for sampling and were not drilled.

28. All materials (with the exception of one boring) consisted of coarse sand, gravel, and cobbles. The materials from the remaining boring included fine-grained material and contained organic matter related to the decomposition of aquatic vegetation. A total of 12 samples were submitted for laboratory analysis. Of those, two samples were submitted strictly for analysis of interest to benthic concerns. The other 10 samples were submitted for evaluation of dredging disposal options as well as benthic concerns.

29. The analytical results of the sediment samples suggest that if the upper four feet of sediment is removed from the impoundment that this material could be designated for beneficial reuse in accordance with draft CT DEEP regulations. The removed material would likely meet the definition of "conditional fill" and, as such, would be deemed suitable for "use, reuse, or recycling as fill, including as structural fill, or as a grading material…."

30. The removal of sediment from the impoundment has the potential to expose previously inaccessible sediment to sediment-dwelling organisms. Based on toxicity calculations, all sediment within the impoundment (including currently-exposed sediment) could be expected to exhibit some degree of toxicity to sediment-dwelling organisms. However, because of the uniform quality, the expected net toxicity change based upon a post-dredging scenario is negligible.

31. Five sediment removal alternatives were considered ranging from the null alternative to a maximum dredging footprint. These are (a) null/do nothing; (b) removal of sediment from all areas where depth is less than five feet, excluding islands and not further upstream than the diagonal ledge outcrop between Riverside Nursery and

Flaherty's Rock; (c) creation of a deeper channel from the Town Garage parcel extending upstream along the nursery to the diagonal ledge outcrop; (d) creation of a deep, wide channel between the islands/sandbars and the west side of the river; and (e) creation of a deep, wide channel between the islands/sandbars and the west side of the river but also removing large areas of the sandbars. Sediment quantities would range from 10,000 cubic yards to 82,000 cubic yards.

32. An alternative to sediment removal is to increase the water surface elevation to 289 feet. The effect of raising the water surface is to uniformly create deeper water in all areas whereas the sediment removal concepts would result in only selective deepening of the Upper Collinsville Mill Pond. Raising the water surface elevation would also increase the area of the impoundment, inundating land higher than elevation 286 feet but lower than elevation 289 feet.

33. At least six acres of wetlands would be inundated if the water surface were raised three feet. Sandbars, Palustrine Forested/Palustrine Scrub Shrub, Palustrine Forested, and Palustrine Emergent/Wet Meadow areas would be lost. Palustrine Emergent/Palustrine Scrub Shrub and open water areas would increase in size. However, a total net loss of wetlands would occur in connection with the raising of the water surface elevation three feet. Over time, it is likely that new wetland areas will develop because ground water proximal to the impoundment will rise, saturating previously drier areas. However, this conversion will take time and will likely be successful only where developed areas do not abut the impoundment, such as the west side.

34. The Upper Collinsville Mill Pond has some areas of good fish habitat. Fish productivity could be enhanced by the installation of one or more artificial fish habitat structures. Artificial fish habitat structures, often referred as "artificial reefs," increase habitat heterogeneity and have been shown to benefit fish populations in rivers, impoundments, and lakes.

35. Perhaps more significant is the potential loss of the deep riffle habitat on the northeast side of the island near Town Bridge Road and the very shallow (sometimes dry) riffle on the west side of this island if the water surface were raised three feet. It is believed that these areas were subject to backwater conditions on a seasonal basis as recently as 2003 when flashboards were installed. The loss of these riffle habitats would not be mitigated by the reef structures that are recommended as part of the master plan as they serve fish communities differently.

36. Two National Register-listed historic properties are within the project area. These are the bridge on Town Bridge Road and the Collinsville Historic District. The bridge will not be affected by any recommendations of the master plan, but four possible actions have the potential to affect contributing components of the Collinsville Historic District: the raising of the water level by installing flashboards or other structures on the dam, creation of a fish passage, construction of a river access from

Bridge Street, and creation of a trail bridge halfway into the river. These actions could affect the dam, gate structure, forebay, former hydroelectric plant, and New Hartford Branch railroad bridge piers and abutments. Assuming the actions are undertaken with federal or state funding, consultation with the SHPO will be required once specific design plans are ready in order to minimize or avoid adverse effects on these components of the Collinsville Historic District.

37. Recommendations of the master plan also have the potential to affect Pre-Contact period (Native American) archaeological resources. Rivers such as the Farmington are known to have been important food and transportation resources, and the likelihood of there being significant Pre-Contact archaeological sites in undisturbed soils along the river's edge is high. Actions that could have an impact on unrecognized archaeological sites include the park improvements at the Town Garage site, parking improvements on Town Bridge Road, sediment removal, and inundation resulting from raising the water surface elevation of the impoundment.

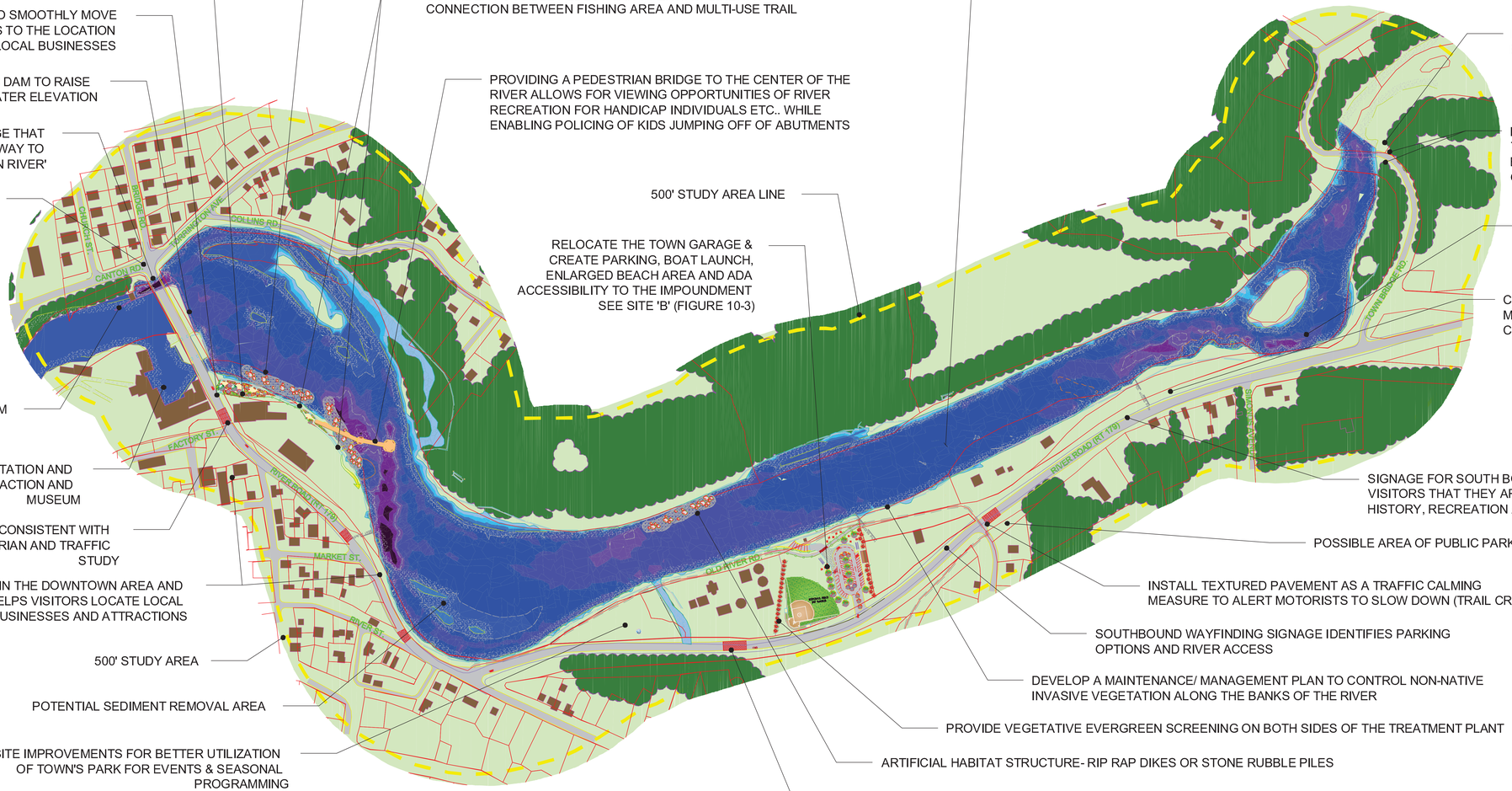
38. Because the current existing access points for water-based recreation at the Upper Collinsville Mill Pond have evolved over time rather than having been intentionally designed and constructed, none of the water access is considered ADA compliant. This is not the case for the trail system as components of the trail system have been designed to incorporate features that facilitate usage by individuals with disabilities. Future improvements to the study area will afford an opportunity to increase ADA compliance and allow increased access for individuals with disabilities.

39. Opportunities for increased ADA compliance in many areas of existing access will not be possible. For example, the configuration of access points like the Town Bridge Road trails to the cobble beach and Flaherty's Rock would not enable ADA accessibility.

40. Numerous federal, state, and Town of Canton approvals will be necessary for implementing the individual recommendations of the master plan. These include environmental approvals at all regulatory levels, as well as design and planning-based approvals at the local level.

10.2 Recommendations

A master plan sheet depicting the entire study area was developed in accordance with the findings described in this document. Refer to Figure 10-1. Two focus drawings (Sites A and B) have been prepared to identify opportunities on the 45 Bridge Street site and the Town Garage site, respectively, in more detail. Refer to Figures 10-2 and 10-3. Site B for the Town Garage property is further broken down into two concepts known as Concept 1 and Concept 2.



CONSIDER ACQUIRING THE RIGHTS TO SLIVER OF LAND TO BECOME DESIGNATED FISHING AREA ALONG POND - PROVIDE SIGNAGE INCLUDING DEEP RULES AND REGULATIONS REGARDING FISHING IN CT RIVERS - SEE SITE 'A' (FIGURE 10-2)

WAYFINDING SIGNAGE HELPS TO SMOOTHLY MOVE TRAFFIC BY ALERTING MOTORISTS AS TO THE LOCATION OF PARKING, RIVER ACCESS AND LOCAL BUSINESSES

CONSIDER ADDING FLASH BOARDS TO DAM TO RAISE WATER ELEVATION

UPON ARRIVAL CONSIDER SIGNAGE THAT DESIGNATES CANTON AS THE 'GATEWAY TO THE UPPER FARMINGTON RIVER'

IMPROVE PORTAGE AROUND DAM FOR THOSE WITH KAYAKS AND CANOES

CONSIDER FISH PASSAGE AROUND DAM

PRESERVE THE HYDRO-ELECTRIC STATION AND CONVERT INTO A TOURIST ATTRACTION AND MUSEUM

BEGIN TRAFFIC CALMING MEASURES - CONSISTENT WITH RECOMMENDATIONS OF PEDESTRIAN AND TRAFFIC STUDY

WAYFINDING SIGNAGE IN THE DOWNTOWN AREA AND ALONG THE TRAIL HELPS VISITORS LOCATE LOCAL BUSINESSES AND ATTRACTIONS

500' STUDY AREA

POTENTIAL SEDIMENT REMOVAL AREA

DESIGN SITE IMPROVEMENTS FOR BETTER UTILIZATION OF TOWN'S PARK FOR EVENTS & SEASONAL PROGRAMMING

ARTIFICIAL HABITAT STRUCTURE- RIP RAP DIKES OR STONE RUBBLE PILES

CONSIDER POSSIBLE PEDESTRIAN WALKWAY/ BIKEWAY CONNECTION BETWEEN FISHING AREA AND MULTI-USE TRAIL

PROVIDING A PEDESTRIAN BRIDGE TO THE CENTER OF THE RIVER ALLOWS FOR VIEWING OPPORTUNITIES OF RIVER RECREATION FOR HANDICAP INDIVIDUALS ETC.. WHILE ENABLING POLICING OF KIDS JUMPING OFF OF ABUTMENTS

500' STUDY AREA LINE

RELOCATE THE TOWN GARAGE & CREATE PARKING, BOAT LAUNCH, ENLARGED BEACH AREA AND ADA ACCESSIBILITY TO THE IMPOUNDMENT SEE SITE 'B' (FIGURE 10-3)

POTENTIAL MID-CHANNEL SEDIMENT REMOVAL

INVESTIGATE POSSIBLE BEACH ACCESS IMPROVEMENTS

RE- ORGANIZE / FORMALIZE PARKING ALONG TOWN BRIDGE ROAD TO PREVENT FURTHER EROSION. CONSIDER PERVIOUS ASPHALT OR GRAVEL PARKING AREAS WITH SIGNAGE

RIFFLE PROVIDES IDEAL FISH HABITAT - SEDIMENT REMOVAL DESIGN TO LIMIT DISTURBANCE

CONSIDER REMOVING TALL VEGETATION ON MDC LAND TO OPEN UP VIEWS OF THE RIVER. COORDINATE WITH MDC.

SIGNAGE FOR SOUTH BOUND VEHICLES ALERT VISITORS THAT THEY ARE ENTERING COLLINSVILLE (A PLACE OF HISTORY, RECREATION AND BUSINESSES)

POSSIBLE AREA OF PUBLIC PARKING

INSTALL TEXTURED PAVEMENT AS A TRAFFIC CALMING MEASURE TO ALERT MOTORISTS TO SLOW DOWN (TRAIL CROSSING)

SOUTHBOUND WAYFINDING SIGNAGE IDENTIFIES PARKING OPTIONS AND RIVER ACCESS

DEVELOP A MAINTENANCE/ MANAGEMENT PLAN TO CONTROL NON-NATIVE INVASIVE VEGETATION ALONG THE BANKS OF THE RIVER

PROVIDE VEGETATIVE EVERGREEN SCREENING ON BOTH SIDES OF THE TREATMENT PLANT

ARTIFICIAL HABITAT STRUCTURE- RIP RAP DIKES OR STONE RUBBLE PILES

TEXTURED PAVEMENT AS A TRAFFIC CALMING MEASURE ALERTS MOTORISTS TO SLOW DOWN

MASTER PLAN (Figure 10-1)

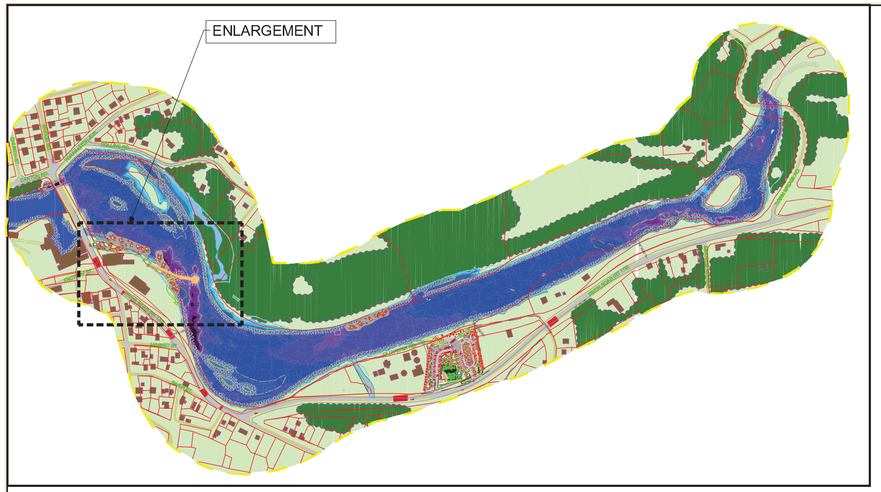
UPPER COLLINSVILLE MILL POND

COLLINSVILLE, CONNECTICUT NOVEMBER 2011

Funding provided by the Farmington River Enhancement Grants, administered by the Connecticut Department of Energy and Environmental Protection.

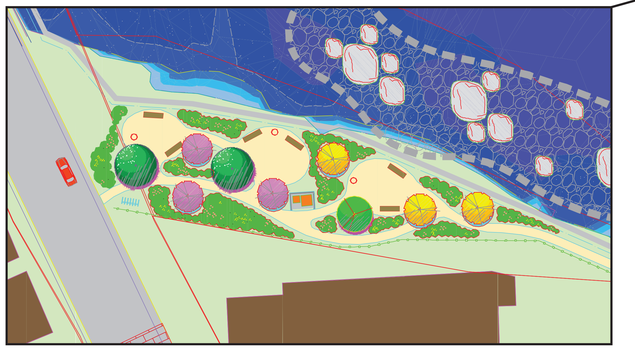
MILONE & MACBROOM®

0 200' 400' 600' 800' NORTH

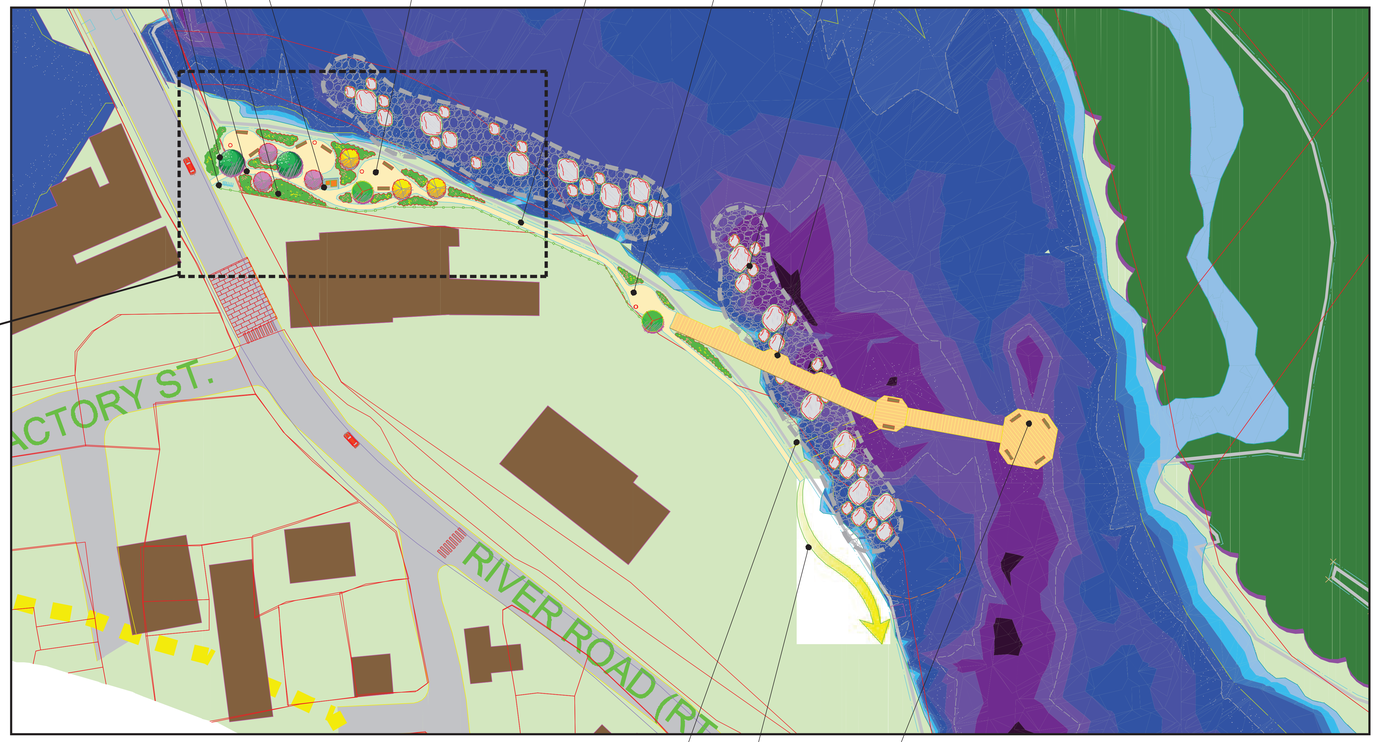


CONTEXT MAP

SCALE: NTS



SCALE: 1"=30'



SCALE: 1"=50'

SITE A (Figure 10-2)

UPPER COLLINSVILLE MILL POND

COLLINSVILLE, CONNECTICUT NOVEMBER 2011

Funding provided by the Farmington River Enhancement Grants, administered by the Connecticut Department of Energy and Environmental Protection.

MILONE & MACBROOM®

0 1" 2" 3" 4"

NORTH

GRAVEL PULL OFF FOR KAYAK/ CANOE UNLOADING

INCREASE SIZE OF EXISTING BEACH

TEXTURED PAVEMENT CROSSING (TYP.)

EXISTING STRUCTURE TO REMAIN

CANOE/ KAYAK RACKS

HANDICAP ACCESSIBLE BOAT RAMP
- PERVIOUS CONCRETE
- STONE RETAINING WALLS
- THREE-RAIL WOOD FENCE

NEW RE-ALIGNMENT OF TRAIL PER ASHTO STANDARDS

THREE-RAIL WOOD FENCING

SIGN ALERTS PEOPLE ON TRAIL OF POTENTIAL CANOE/ KAYAK CROSSING

ADD SOLID PANELS OR CHAIN LINK PRIVACY SLATS TO EXISTING CHAIN LINK FENCE

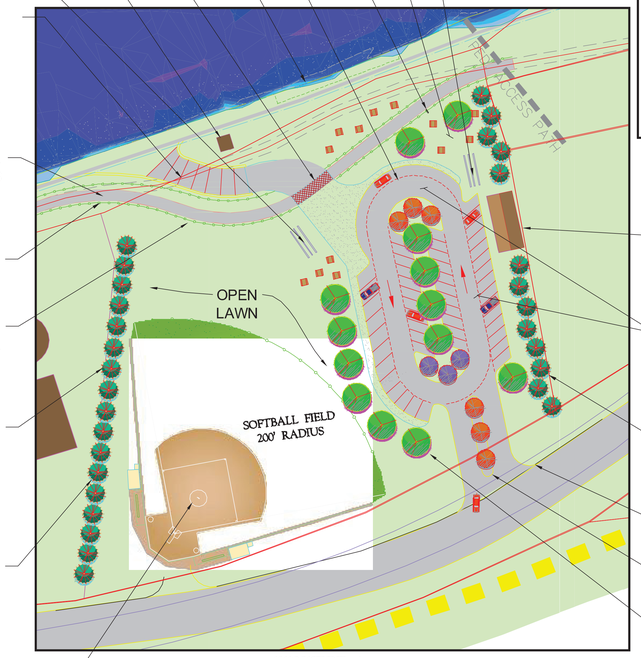
PROVIDE NATIVE EVERGREEN TREES TO SCREEN WASTE WATER TREATMENT PLANT

200' RADIUS SOFTBALL FIELD

SIGNAGE ALERTS BICYCLISTS/WALKERS TO SLOW DOWN "KAYAK CROSSING" (TYP.)

LAWN PICNIC AREA UNDER SHADE TREES

CANOE/ KAYAK RACK



CONCEPT - 1

SCALE: 1" = 50'

CONSIDER PARTIAL BUILDING REUSE FOR FOOD VENDORS, INFO CENTER, LOCKERS, BOAT STORAGE, ETC.

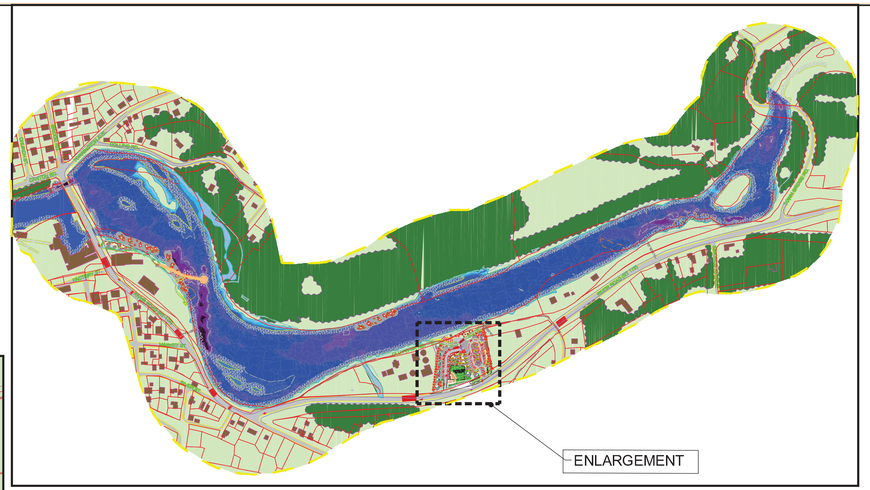
ONE WAY TRAFFIC FLOW PERMEABLE BITUMINOUS ASPHALT WITH NATIVE PEA GRAVEL PARKING DELINEATED WITH FLUSH GRANITE COBBLES (+/-50 PARKING SPACES)

EVERGREEN SCREENING ALONG PROPERTY LINE

NEW CURB CUT ACCESS ONTO ROAD

SITE SIGNAGE

UPRIGHT SHADE TREES



CONTEXT MAP

SCALE: NTS

PERMEABLE CONCRETE-HANDICAP ACCESSIBLE BOAT RAMP

REALIGNMENT OF TRAIL

PERMANENT BATHROOM STRUCTURE OR PORT-O-POTTIES WITH DECORATIVE ENCLOSURE

KAYAK CROSSING SIGNAGE

EXITING STRUCTURE TO REMAIN

BRICK PAVERS CROSSING

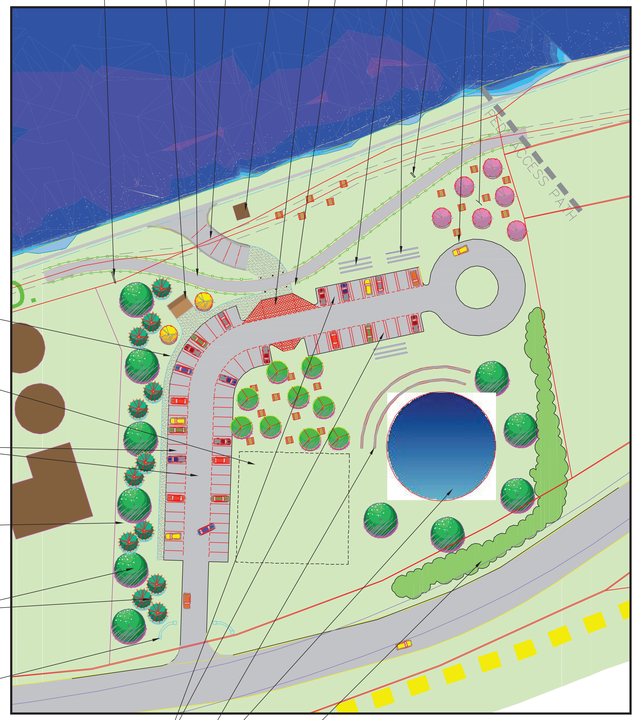
REMOVABLE BOLLARDS AT CROSSING

KAYAK RACKS

KAYAK CROSSING WARNING SIGNAGE (TYP. BOTH SIDES)

KAYAK DROP-OFF AREA

PICNIC AREA UNDER NATIVE FLOWERING TREES



CONCEPT - 2

SCALE: 1" = 50'

GRAVEL WALK

POTENTIAL DOG PARK AREA AND FUTURE PARKING LOT EXPANSION (OVERFLOW PARKING FOR EVENTS)

PERMEABLE BITUMINOUS DRIVE WITH GRAVEL PARKING

INSTALL PRIVACY SLATS ON CHAIN LINK FENCE FOR SCREENING

NATIVE SHADE AND EVERGREEN TREES PROVIDE SCREENING OF WASTE WATER TREATMENT PLANT

SITE SIGNAGE -STONEWALL AND COLUMNS

OVER-SIZED PARKING SPACES FOR VEHICLES CARRYING BOATS

STONE AMPHITHEATER SEATING AND TEMPORARY ICE SKATING RINK (WINTER) AND OPEN LAWN SPACE FOR EVENTS (SUMMER)

REFORESTED HABITAT BUFFER OF SHADE/FLOWERING TREES AND SHRUB PLANTINGS

SITE B (Figure 10-3)

UPPER COLLINSVILLE MILL POND

COLLINSVILLE, CONNECTICUT NOVEMBER 2011

Funding provided by the Farmington River Enhancement Grants, administered by the Connecticut Department of Energy and Environmental Protection.

MILONE & MACBROOM®

0 1" 2" 3" 4"

NORTH

The master plan sheet and its accompanying drawings include a variety of recommendations that address the issues described in Section 1.2 of this document, consistent with the announcement of the environmental damages award that funded the master plan: *The "Upper Collinsville Mill Pond Master Plan" shall include "a feasibility study for removal of sediment from the Upper Collinsville Mill Pond located upstream of the Upper Collins Company Dam on the Farmington River for restoration of recreational, aesthetic, economic, historical and ecological value of this portion of the Farmington River and to provide a master plan for restoration activities."* These recommendations are as follows:

Water Depth Management Recommendations

- ❑ Install flashboards or other structures to raise the water surface elevation of the Upper Collinsville Mill Pond to elevation 289 feet; or
- ❑ Conduct the Upstream sediment removal, Middle sediment, and/or Expanded Middle sediment removal alternatives

Site A Recommendations

- ❑ Develop public access and a designated fishing area on the 45 Bridge Street parcel
  - o Provide signage including CT DEEP rules and regulations for fishing
  - o Designate fishing stations
  - o Provide benches in fishing stations for river view
  - o Provide port-o-lets and decorative enclosures
  - o Establish low native shrubs and flowering shade trees
  - o Provide bicycle racks
  - o Provide trash receptacle
  - o Construct a pedestrian bridge to center of the river on the old bridge abutments
  - o Create a pedestrian walkway connection from the fishing area to the trail and the pedestrian bridge (if constructed)

Site B Recommendations (Concepts 1 and 2)

- ❑ Relocate the Town Garage facilities
- ❑ Develop public access on the parcel
  - o Construct an access driveway off River Road and parking for vehicles with boats on car tops
  - o Provide appropriate site signage at the driveway
  - o Establish evergreens, trees, and/or shrub screening at the northern property line
  - o Affix privacy slats to the chain link fence along the southern parcel line with the water pollution control facility
  - o Establish shade trees throughout the parcel
  - o Provide a picnic area
  - o Consider partial Town Garage building reuse for vending, kayak storage, information dissemination, etc.

- Provide canoe and kayak racks
- Provide signs at boat ramp/trail crossings to increase safety
- Construct a gravel drop-off from the parking area and a permeable paved boat launch with appropriate fencing and retaining walls where needed
- Expand the beach, taking care to avoid encroachment of private property
- Provide ADA-compliant access throughout
- Install a public restroom
- Develop a small amphitheatre that could be used seasonally as a small ice rink
- Create a small dog park
- Create a ball field
- Re-align the Farmington River trail section as needed to accommodate the above

Traffic and Roadway Signage Recommendations

- ❑ Install textured pavement for traffic calming along Bridge Street/River Road
- ❑ Provide signage designating Collinsville as a gateway to the Upper Farmington River
- ❑ Provide wayfinding signage on Bridge Street to alert motorists of parking, river access, businesses
- ❑ Provide signage for southbound motorists on River Road regarding their entrance to Collinsville
- ❑ Provide southbound wayfinding signage on River Road to identify parking options and river access

Town Bridge Road Recommendations

- ❑ Reorganize/formalize parking along Town Bridge Road using pavers or other means of reducing soil erosion without increasing asphalt surfaces
- ❑ Pursue possible beach access improvements at Town Bridge Road when opportunities arise to work with private property owners

Other Access Recommendations

- ❑ Develop and pass an ordinance to regulate watercraft speed to headway speeds only (6 mph within 50 feet of shore)
- ❑ Provide canoe and kayak portage around the dam
- ❑ Provide wayfinding signage downtown and along the Farmington River trail
- ❑ Preserve the hydroelectric station and consider conversion to a small museum
- ❑ Design modifications to increase utilization of the small town park for special events and seasonal programming
- ❑ Consider developing a small area of public parking across from Riverside Nursery where informal parking occurs at the present time

Fish Habitat Recommendations

- ❑ Install fish habitat enhancement structures

- Provide fish passage at dam
- Preserve riffle habitats in the upstream end of the study area

Vegetation Recommendations

- Thin out tall vegetation on the MDC-owned strip of land to enhance views
- Develop a maintenance/management plan to control non-native vegetation along the river
- Establish evergreen vegetation screening around the water pollution control facility

Cost estimates for individual recommendations are included in tabular form in Appendix H. Note that these are planning-level estimates and in many cases, the completion of individual projects together could result in overall project cost savings.

Note that the master plan depicts an increased water surface elevation to 289 feet but does not specifically recommend that depths should be increased by raising the water surface elevation. Instead, the master plan is silent regarding whether increased depths should be accomplished by raising the water surface or removing sediment. If hydropower is restored to the site, then the water surface elevation may be raised and increased depths will result. However, this master plan presents all the options for increasing depths as its implementation cannot be contingent on the restoration of hydropower.

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