

**UPPER COLLINSVILLE MILL POND MASTER PLAN
COLLINSVILLE, CONNECTICUT**

November 23, 2011



Prepared for:

Town of Canton
4 Market Street
Collinsville, Connecticut 06022



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

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EXECUTIVE SUMMARY

The Farmington River supports a wide range of water-dependent uses within its drainage basin including hydroelectric power generation, fish and wildlife habitat, public water supply, waste assimilation, recreational fishing, swimming, boating, tourism, and scenic resources. As a result of court settlements involving violations of clean water laws and environmental damage to the Farmington River, a total of \$758,905 in grants was announced in 2009 for a variety of projects in the Farmington River watershed. These projects are administered by the Connecticut Department of Energy and Environmental Protection (DEEP). Many of the projects share the goal of preserving and enhancing these water-dependent uses.

A grant of \$100,000 was awarded to the Town of Canton to develop a master plan for the Upper Collinsville Mill Pond. The master plan characterizes the recreational, aesthetic, economic, historical, and ecological value of the Upper Collinsville Mill Pond and evaluates alternatives for the removal and disposal of sediments from the impoundment to restore depths in shallow areas to the extent necessary to enhance recreation and aesthetics. The study area includes the river impoundment from Bridge Street to Town Bridge Road, and land areas within 500 feet of the edge of high water.

The master plan also addresses preservation and enhancement of the Upper Collinsville Mill Pond area for boating access, hiking on trails, swimming, fishing, Americans With Disabilities Act (ADA) compliance, canoeing, and kayaking. These issues have also been explored in the context of the reestablishment of the dam for hydroelectric power generation, and this plan considers whether potential reestablishment of hydroelectric power generation may affect the objectives of the potential sediment removal. The plan addresses land use issues such as potential reuse of the former Connecticut Department of Transportation salt storage area and Town Garage site and use of the Farmington River Trail.

Adequate river flow is essential for water-dependent 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. The Farmington River basin has a long history of floods, resulting in an extensive program to minimize damage. The management of low flows and flood flows has helped shape the conditions that are evident in the Upper Collinsville Mill Pond.

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 in the Upper Collinsville Mill Pond.

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. Depths are greatest in the raceway beneath the western end of the Bridge Street bridge; in the area adjacent to Collinsville Canoe and 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. 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.

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. With the loss of the flashboards, 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.

The wetland vegetative cover types present within the study area are Palustrine Open Water, Palustrine Emergent Marsh, Palustrine Scrub Shrub, and Palustrine Forested. 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. The DEEP's Natural Diversity Database includes records of a state threatened species in the vicinity of the Upper Collinsville Mill Pond, the bald eagle; and two species of special concern, Wood turtle and Eastern Box turtle.

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, longnose dace, blacknose dace, white sucker, and tessellated darter.

Six zoning districts are located within or intersect with the study area. The Farmington River and the Upper Collinsville Mill Pond are also within the Farmington River Protection Overlay zoning district. The study area includes six Assessor maps and hundreds of parcels. 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.

The water in the Upper Collinsville Mill Pond is considered of sufficient quality for recreational uses, consistent with its Class B water quality standard. The Farmington River supports an extensive variety of passive and active recreational activities extending over the full length of the river. Recreational observations were conducted within the study area 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. Biking, walking, jogging, dog walking, swimming, fishing, sunbathing, canoeing, kayaking, other forms of paddling, and canoe/kayak lessons were observed.

A survey of recreational users in the study area was conducted using the Survey Monkey web site. Walking and biking were 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.

Responses about motorized boats, dredging, and raising the water surface elevation were noted. 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. 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.”

The master plan evaluated two general methods of increasing water depths: raising the normal pool water surface elevation and removing sediment through dredging or conventional excavation. 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.

A sediment sampling program was developed to characterize the quality of the sediment in the bottom of the Upper Collinsville Mill Pond. Borings were concentrated in the areas of greatest interest for sediment characterization. All materials with the exception of one boring consisted of 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. The analytical results of the sediment samples suggest that if the upper few feet of sediment is removed from the impoundment that this material could be designated for beneficial reuse in

accordance with draft DEEP regulations. The removal of sediment from the impoundment has the potential to expose previously inaccessible sediment to sediment-dwelling organisms. However, because of the uniform quality, the expected net toxicity change based upon a post-dredging pond bottom is negligible.

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.

An alternative to sediment removal is to increase the water surface elevation to 289 feet. 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.

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. 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.

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.

Overall 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. However, the reefs would not offset the loss of riffles upstream if the water surface were raised.

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 State Historical Preservation Officer 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 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.

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. 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.

The master plan maps and this document include a variety of recommendations to address the inter-related recreational, aesthetic, economic, historical, and ecological issues facing the Upper Collinsville Mill Pond. 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. Recommendations are grouped 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 upstream sediment removal and/or middle channel sediment removal as conceptually sketched in the master plan.

- ❑ Recommendations for Site A (45 Bridge Street) – Develop public access and a designated fishing area, provide signage including DEEP rules and regulations for fishing, provide benches in fishing stations for river views, provide port-o-lets and decorative enclosures, establish low native shrubs and flowering shade trees, provide a bicycle rack, and provide trash receptacles. An ambitious recommendation for the adjacent parcel at 39 Bridge Street is to create a pedestrian bridge extending over the water on the old railroad bridge abutments and a walkway connection from the fishing area at 45 Bridge Street to this bridge.
- ❑ Recommendations for Site B (Town Garage) – Relocate the Town Garage facilities and develop public access on the parcel; construct an access driveway off River Road and parking for vehicles with boats on car tops; provide appropriate site signage at the driveway; establish evergreens, trees, and/or shrub screening at the northern property line; affix privacy slats to the chain link fence along the southern parcel line with the water pollution control facility; establish shade trees throughout the parcel; provide a picnic area; 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 existing beach, taking care to avoid encroachment of private property; 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; and provide ADA-compliant access throughout.
- ❑ 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; and 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, and 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 Upper Collinsville 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; and 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, and 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; and establish evergreen vegetation screening around the water pollution control facility.

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. Adverse environmental impacts associated with sediment removal and many of the individual recommendations are largely minimal, temporary, or related to construction. Only the alternative of raising the water surface elevation three feet will have long-term adverse environmental impacts. On the other hand, some of the recommendations could have positive environmental impacts, such as installing the artificial fish habitat structures.

Cost estimates for individual recommendations are included in this document. 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 mapping 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.

1.0 INTRODUCTION

1.1 Background Information

The Collins Company operated the Upper Collinsville Mill Pond from the early 1800s until 1966. The level of the Upper Mill Pond was controlled with 36-inch high flashboards at the dam, and the dam was used first to operate a saw mill and later to power factory equipment. The Department of Energy & Environmental Protection (DEEP) is the current owner of the Upper Collinsville Dam and has been the owner since approximately 1967. For several years, the Town of Canton has been considering the possibility of reestablishing a run-of-the-river hydroelectric power generating facility. The dam, pond, and factory are keystone features of Collinsville, and the impoundment is a resource of great significance to the town of Canton and surrounding communities.

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 minimal wetland fringe. Over the years, sediment has been deposited upstream of the dam and extends at least part of the distance from the dam to Town Bridge Road. Prior estimated volumes have been on the order of one million cubic yards. Very shallow areas have developed in the pond. Shallow depths are visible on aerial photographs, including the two images on this page. Much of the sediment is believed to be from the 1938 failure of the Greenswood Dam in New Hartford and from the flood of 1955.

The pond is accessible from public property along Route 179 and from the public rails-to-trails paved pathway that follows portions of the pond's east bank as well as town recreation fields. The left bank (east side) includes a large retail paddle sports center known as Collinsville Canoe & Kayak, a boat launch, a public park, and the popular Farmington River Trail. Public access and recreational use of the pond is significant. The



View of raceway



View of Town Bridge Road bridge

impoundment is used through the spring, summer, and early fall for kayaking. A kayak launch is located along the eastern side of the pond. Swimming and fishing are other important uses of the pond, and walking and hiking along the shoreline and in the nearby vicinity are also popular.

Sediment deposits are creating seasonally exposed bars and islands as well as causing shallow water that reportedly interferes with paddle sports. It has been the public's perception that the area of sandbars and shallow water is one of the most changed parts of the impoundment.



1.2 Purpose of Master Plan

Islands and sandbars near Bridge Street

As a result of court settlements involving violations of clean water laws and environmental damage to the Farmington River, a total of \$758,905 in grants was announced in 2009 for a variety of projects in the Farmington River watershed. The projects range from stream bank stabilization and eradication of invasive plant species along the river in Simsbury to the design of fish passage structures at dams as well as development of land use ordinances in the watershed to incorporate practices such as low impact development. Funds are being administered by the Connecticut DEEP.

A grant of \$100,000 was awarded to the Town of Canton to develop the "Upper Collinsville Mill Pond Master Plan." According to the award announcement, the 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." The master plan scope is constrained to a "study area." The study area includes the impoundment from Bridge Street to Town Bridge Road, and land areas within 500 feet of the edge of high water. Refer to Figure 1-1.

The purpose of the master plan is to evaluate existing and potential impoundment uses, its continuing community ties, and sediment management options in the study area. The master plan characterizes the recreational, aesthetic, economic, historical, and ecological value of the Upper Collinsville Mill Pond and evaluates alternatives for the removal and disposal of sediments from the impoundment to restore depths in shallow areas to the extent necessary to enhance recreation and aesthetics.



Legend
 Study Area

SOURCE:
 Basemap:
 Bing Maps Hybrid Datalayer (c) 2010
 Microsoft Corporation and its data suppliers

Figure 1-1: Study Area

LOCATION:
 Village of Collinsville
 Canton, CT

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



**Upper Collinsville Mill
 Pond Master Plan**

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Map By: SMG
MMI#: 1752-13
MXD: P:\Fig_1-1.mxd
Date: October 20, 2011
Scale: 1 inch = 700 feet

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The master plan also addresses methods of restoration as well as preservation and enhancement of the Upper Collinsville Mill Pond area for boating access, hiking on trails, swimming, fishing, Americans With Disabilities Act (ADA) compliance, canoeing, and kayaking. These issues have also been explored in the context of the reestablishment of the dam for hydroelectric power generation, and this plan considers whether potential reestablishment of hydroelectric power generation may affect the objectives of the potential sediment removal. The plan also addresses emerging land use issues such as potential reuse of the former Connecticut Department of Transportation (CT DOT) salt storage area, extension of the Farmington River Trail, and the current study on expanding potential wild and scenic river designations.

2.0 FARMINGTON RIVER

2.1 Drainage Basin

The Farmington River has a total length of 81 miles, including the West Branch and main stem of the river. Its source begins in Massachusetts, where it travels 16 miles to the Connecticut state line. In Connecticut, the river flows down 65 miles, finally discharging into the Connecticut River. A 14-mile segment of the West Branch and main stem of the river is designated as Wild and Scenic. The segment begins below the Goodwin Dam and Hydroelectric Project in Hartland, Connecticut and extends to the town line of New Hartford and Canton.

The Farmington River watershed covers an area of 609 square miles up to its confluence with the Connecticut River. A total of 33 municipalities are located within the watershed, 23 of which are located in Connecticut. Watershed characteristics include multiple tributaries, rolling hills, water supply systems, and extensive aquifer systems. The West Branch of the river flows through Otis and Tolland, Massachusetts and Colebrook, Connecticut. The East Branch of the river begins in Massachusetts as well. Its source tributaries include Hubbard Brook, Pond Brook, and Valley Brook.

The main stem of the Farmington River begins at the confluence of the West Branch and East Branch, below the Barkhamsted Reservoir and Lake McDonough. From New Hartford to Burlington, the river flows through rapids and an area of rising cliffs. The Upper Collinsville Mill Pond is located toward the downstream end of this section of the river. In Farmington, the river enters an area of shallow slopes downstream of Unionville, where the water is warmer and slower moving. This section, referred to as the “bathtub,” extends along the floodplains in the towns of Farmington, Avon, and Simsbury and is characterized by wide stratified drift deposits. At Tariffville Gorge, the river turns east, where it meanders through lowlands, finally meeting the Connecticut River.

The Farmington River watershed provides vital functions that include water resources, recreational use, and power supply. The watershed’s water resources provide drinking water to residents in watershed towns and in the Greater Hartford area. About 25% of the land in the watershed is held by water utilities. A summary of the major water storage reservoirs along the Farmington River is presented in Table 2-1.

**TABLE 2-1
Major Storage Reservoirs Along the Farmington River**

Reservoir	Location	Size	Current Use
Colebrook Reservoir	West Branch	32.1 BG	Boating and fishing; Maintained by U.S. Army Corps of Engineers although CTDEEP and Metropolitan District Commission (MDC) influence its operation
West Branch Reservoir	West Branch	3.0 BG	Maintained by MDC
Barkhamsted Reservoir	East Branch	30.3 BG 2,276 acres	Drinking water, no recreation; maintained by MDC
Lake McDonough	East Branch	2.9 BG	Recreational use; maintained by MDC
Nepaug Reservoir	Tributary of the Main Stem	9.5 BG 81 acres	Drinking water; maintained by MDC

MDC = Metropolitan District Commission
BG = Billion Gallons

2.2 Instream Flow Study

Water resource conflicts in the Farmington River basin have been the subject of much study with regard to resolving water use and allocation conflicts. An Instream Flow Study of the West Branch and Main Stem of the Farmington River was conducted from 1989 to 1992. The goal of the study was to determine the river flows needed to maintain adequate fish habitat and recreational and scenic resources. Additionally, the study assessed whether flow conditions in the West Branch allow for water withdrawals, particularly under varying rainfall scenarios.

The Instream Flow Study determined the optimum and minimum stream flow rates required for supporting multiple uses of the river. Subsequently, the Upper Farmington River Management Plan was issued in 1993, and portions of the river were designated as a federal Wild and Scenic River in 1995. The Metropolitan District, Connecticut DEEP, Farmington River Watershed Association, and National Park Service were involved in this process together, along with local municipalities.

The Instream Flow Study and related studies concluded that in addition to the authorized withdrawals from the East Branch Farmington River and Nepaug River the West Branch Reservoirs and the Still River could provide ample water for downstream users while allowing use of 20 million gallons per day (mgd) from the West Branch for public water supply under all but the 99% exceedance drought. This study assumed 100% allocation of the East Branch Farmington River and Nepaug River for water supply and, therefore, negligible contribution to instream flows.

2.3 Flow Management Plan

The existing and historic flow rates in the Farmington River support 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 a key diversion issue.

The Farmington River flow rates are regulated by the U.S. Army Corps of Engineers (Colebrook Reservoir) and the Metropolitan District's West Branch Reservoirs in accordance with formal operating agreements. The Colebrook and West Branch Reservoirs are used to store water runoff and to augment the natural summer flows. This helps support fisheries and recreation. Secondary flow regulation is provided at flood control reservoirs, which are used primarily for reducing peak flow rates. Under present conditions, flow management in the West Branch is dictated by the following factors:

- ❑ 50 cubic feet per second (cfs) minimum flow established under state statute
- ❑ Riparian agreements between the Metropolitan District Commission (MDC) and the Farmington River Power Company
- ❑ Agreement with the allied Connecticut towns
- ❑ U.S. Army Corps of Engineers flood control requirements
- ❑ Fall fisheries augmentation flow
- ❑ Flood encroachment/American shad minimum flow
- ❑ Regulatory requirements of the Federal Energy Regulatory Commission (FERC) for the hydroelectric facilities at Colebrook and Goodwin Dams

The flow rates in the West Branch and to a lesser degree in the main stem are also influenced by the operation of the Otis Reservoir in Massachusetts. There are no minimum low flow discharges required from the Barkhamsted Reservoir or the Nepaug Reservoir. These waters are fully allocated for potable water supply.

The Farmington Wild and Scenic River process included the preparation of a detailed study of the river's flow rates and the influence of those flow rates on fisheries and recreational activities. The results have been approved by the Farmington River Study Committee, which included representatives from the nine towns along the two segments, the Commonwealth of Massachusetts, the State of Connecticut, MDC, the Farmington River Watershed Association (FRWA), and the U.S. Department of the Interior. Staff assistance and funding for the project were provided by the National Park Service (NPS).

The adopted study and management plan found that:

“The flow regime that has existed since the Goodwin and Colebrook dams were established provides sufficient flows to maintain water quality and the resources that make the segment eligible for Wild and Scenic River designation.” (Upper Farmington River Management Plan, 1993)

The MDC's agreement with the riparian owner allows for a reduction or suspension of water delivery in times of drought. Compensation is provided by the Metropolitan District for the value of lost hydroelectric power production. In a severe drought such as

the 99% exceedance year, the Metropolitan District would likely reduce or suspend riparian owner releases in order to provide for the more critical needs of water supply.

Additionally, Connecticut General Statute 22a-378 (water supply emergency) established that under a declaration of water supply emergency the Commissioner of the DEEP shall have the power to divert such quantities of water as necessary to ease emergency conditions. Such diversion may result in reduced or curtailed water releases for recreation (Instream Flow Study, 1992). Again, these conditions apply to the West Branch Farmington River from which no water is withdrawn for potable water supply.

The management plan concluded that all flow-dependent resource needs could be met, even if there were water withdrawals of up to 20 mgd from the West Branch. The results of the water allocation study demonstrated that during wet (< 50% exceedance drought) and normal water years there appears to be sufficient flow to satisfy all resource uses.

Under dry conditions (90% exceedance drought), there appears to be sufficient flow to support all studied resource uses including a 20 mgd withdrawal for water supply above and beyond the East Branch and Nepaug River uses. However, under certain scenarios, the remaining surplus is small. During 99% exceedance droughts, there is insufficient water available in the system to accommodate the desired flow scenario for maintenance of fisheries resources, recreation, and water supply, which is based on a riparian agreement that is in effect on the West Branch between MDC and the Stanley Works.

The Management Plan further concluded the following:

“Given those considerations, the instream flow study indicates that some use of West Branch water for water supply could be compatible with protection of the river’s instream resources and, therefore, with Wild and Scenic River designation. Based on the assumptions utilized in the Instream Flow Study, during wetter-than-normal, normal, and dry years, there appears to be sufficient water to provide for all resource needs and uses, including a potential water supply withdrawal of up to 7.3 billion gallons per year. Under severe drought conditions, there appears to be sufficient water to provide for all resource needs and uses and withdrawals of up to 7.3 billion gallons per year, if a near-optimum fisheries scenario is applied.” (Upper Farmington River Management Plan, 1993.)

2.4 Instream Flow Conditions

Hydrologic data on the Farmington River is collected by the United States Geological Survey (USGS) at seven locations throughout the watershed. Gauging stations on the main stem are located at Tariffville and Unionville (just downstream of the Upper Collinsville Mill Pond).

USGS gauge data for the Farmington River at Unionville demonstrate that the lowest daily mean flow ever recorded (64 cfs) occurred on September 26, 2002, as summarized in Table 2-2.

**TABLE 2-2
Farmington River Flow Rates (1978-2004)**

Statistic or Flow	Flow (cfs)	Year
Annual Mean	655	1978-2004
Lowest Annual Mean	287	1985
Lowest Daily Mean	64	2002
Lowest Instantaneous	61	2002

Source: USGS annual reports

The recorded instantaneous low flow, also for that day, is 61 cfs. Note that both of these flows exceed the upstream minimum release of 50 cfs.

A complete tabulation of flow duration statistics for the river at the Unionville gauging station is provided below.

**TABLE 2-3
Instream Flow Statistics for Unionville Gauging Station
for Period of Record**

Flow Duration	Actual Unionville Instream Flow	Flow Duration	Actual Unionville Instream Flow
1%	3,340	55%	451
2%	2,660	60%	417
5%	1,870	65%	388
10%	1,350	70%	358
15%	1,090	75%	331
20%	917	80%	301
25%	793	85%	270
30%	704	90%	219
35%	630	95%	173
40%	573	98%	140
45%	528	99%	124
50%	488		

Average monthly flows for a recent 10-year period are provided in Table 2-4. Mean flows for a wet year and a dry year are also listed. Note that mean monthly flows vary significantly from a wet year to a dry year for most months.

**TABLE 2-4
Mean Monthly Flows for Unionville Gauging Station, 1999-2009**

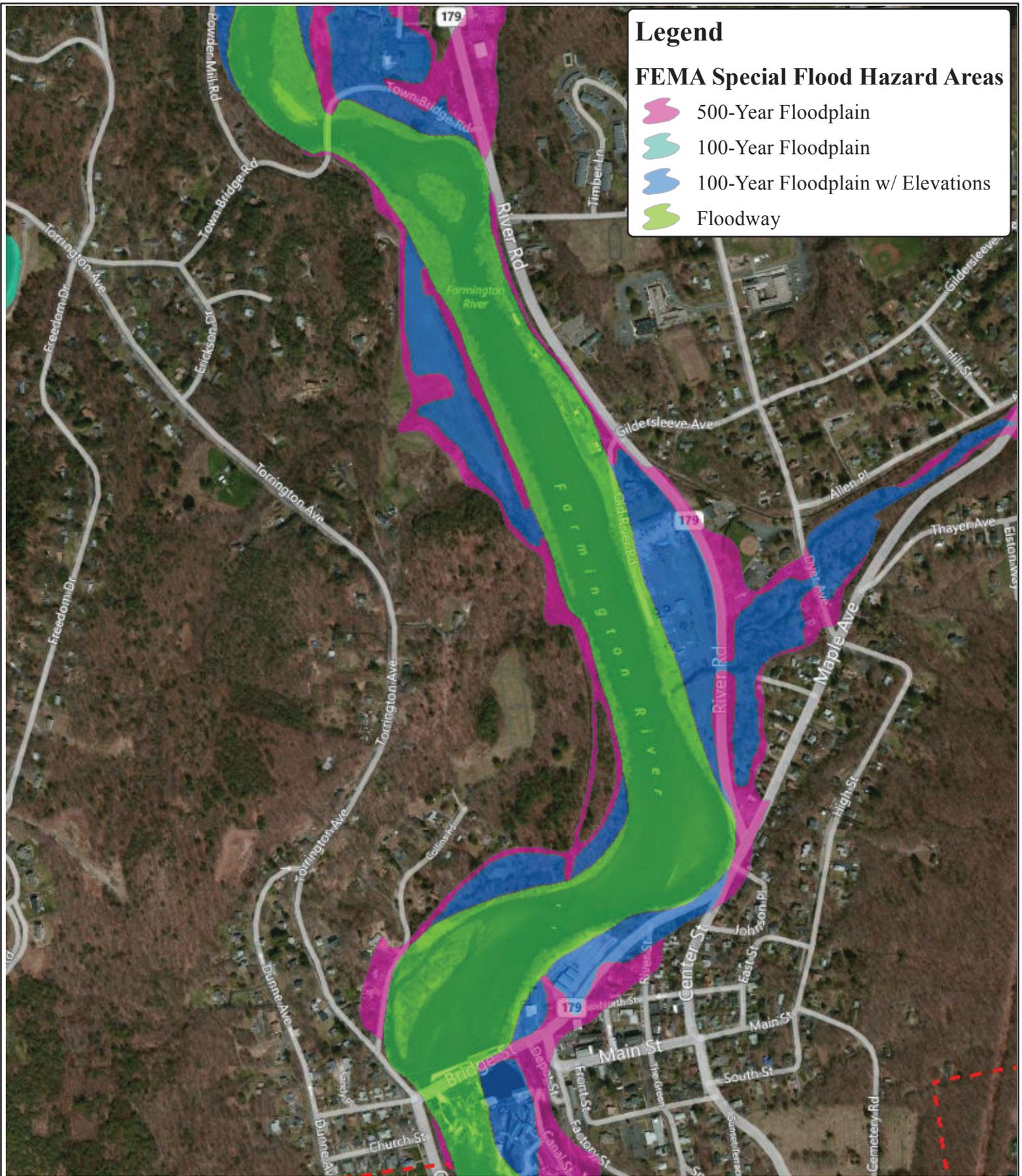
Month	Average Monthly 1999-2009	2008 (“Wet”)	2002 (“Dry”)
January	823	616	151
February	637	1,433	210
March	934	2,085	339
April	1,210	1,096	376
May	704	643	571
June	809	619	597
July	499	589	290
August	458	658	158
September	429	790	106
October	616	504	242
November	694	768	572
December	839	1,586	605

2.5 Flood Management

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, Unionville, Farmington, and Simsbury.

The State of Connecticut and U.S. Army Corps of Engineers responded to historic flooding by constructing a series of flood control improvements. The main focus has been on flood storage reservoirs created by dams, including the Sucker Brook Dam and Mad River Dam in the Still River (tributary to West Branch Farmington River) and the large Colebrook Dam. The latter dam and reservoir are located on the West Branch of the Farmington River just upstream of the MDC’s Goodwin Dam and West Branch Reservoir.

Figure 2-1 presents the Special Flood Hazard Areas (SFHAs) and regulatory floodway along the Farmington River and the Upper Collinsville Mill Pond. The SFHA is commonly known as the 100-year floodplain and is the area covered by the base flood. The base flood is the flood that has a 1% chance of occurrence in any year. The regulatory floodway is the portion of the SFHA that is needed for conveyance of floodwaters. The regulatory floodway is typically assigned by the Federal Emergency Management Agency (FEMA) by determining the portion of the river where floodwaters would rise a certain predetermined amount (such as one foot) if the fringes in the floodplain were filled.



Legend

FEMA Special Flood Hazard Areas

- 500-Year Floodplain
- 100-Year Floodplain
- 100-Year Floodplain w/ Elevations
- Floodway

SOURCE:
 Basemap:
 Bing Maps Hybrid Datalayer (c) 2010
 Microsoft Corporation and its data suppliers

FEMA Special Flood Hazard Areas Datalayer
 9/26/2008

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



Figure 2-1: FEMA Zones

LOCATION:
 Village of Collinsville
 Canton, CT

**Upper Collinsville Mill
 Pond Master Plan**



Map By: SMG
MMI#: 1752-13
MXD: P:\FEMA.mxd
Date: October 20, 2011
Scale: 1 inch = 700 feet


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Portions of the study area in the floodway include primarily the banks of the impoundment. Areas outside the floodway but inside the SFHA include the Town Bridge Road area, the Town Garage, Water Pollution Control Facility (WPCF), and the property associated with the Collinsville Canoe & Kayak store.

The most recent flooding condition occurred during and immediately after the passing of Tropical Storm Irene on August 27-28, 2011. Although severe flooding did not occur to the extent that structures or property were damaged in the study area, many low-lying areas in the study area were inundated.



Overbank conditions at Old River Road after T.S. Irene

2.6 Water Quality

The Connecticut DEEP has adopted water quality classifications and goals for all surface waters and ground water within the state of Connecticut. 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.



Flooding after T.S. Irene

The Upper Farmington River Plan addresses the relationship between flow rates and water quality, as quoted here:

“The flow regime that has existed since the Goodwin and Colebrook dams were established provides sufficient flows to maintain water quality and the resources that make the segment eligible for Wild and Scenic River designation. This plan does not propose, nor does Wild and Scenic River designation require, changes in the existing flow regime.”

A review of existing water quality data supports the conclusion that withdrawals for public water supply have not impaired water quality. Milone & MacBroom, Inc. (MMI) conducted a review of 20 years of available USGS and DEEP water quality data for the Farmington River at Unionville (USGS water quality stations 01188090 and 01188085),

just downstream of Collinsville. This review indicates that water quality trends in the river have improved. Decreasing trends were observed for fecal coliform and dissolved cadmium, copper, and zinc concentrations. Dissolved oxygen concentrations have remained high while phosphorus levels have remained low. Slight increasing trends were observed for chloride concentrations and turbidity levels. Overall, the findings indicate that while industrial and domestic point source pollution treatment has improved, road salt use and nonpoint source pollution may still have adverse water quality impacts.

As part of the National Water-Quality Assessment (NAWQA) Program, the USGS published *Trends in Surface Water Quality in Connecticut, 1989-1998*, a report summarizing water quality trends for numerous basins in the state. The findings for the Farmington River at Unionville, summarized below, generally concur with MMI's review of 20 years of USGS water quality data. The few exceptions include conclusions regarding water quality trends for dissolved metal and bacteria concentrations. Upon close examination of the data, it appears that major improvements with respect to these parameters occurred in the first half of the 1980s. The improvements during this time are likely attributed to increased wastewater treatment. Since the NAWQA trends study focuses on data from 1989-1998, it does not capture these earlier changes.

TABLE 2-5
Summary of Water Quality Trends as Reported by USGS

Parameter	Farmington River at Unionville
Specific conductance	No significant trend
Turbidity	No significant trend
DO	Downward Trend
DO as % saturation	No significant trend
pH	No significant trend
Alkalinity	No significant trend
Chloride	Upward trend
Sulfate	Downward trend
Silica	No significant trend
Dissolved solids	No significant trend
Total nitrogen	No significant trend
Total organic nitrogen	Insufficient data
Ammonia + organic N	No significant trend
Dissolved NO ₃ + NO ₂ N	Insufficient data
Dissolved NH ₃ N	Insufficient data
Total phosphorus	Insufficient data
Organic carbon	No significant trend
Dissolved aluminum	Insufficient data
Dissolved copper	Insufficient data
Dissolved lead	Insufficient data
Dissolved zinc	Insufficient data
Fecal coliform	No significant trend
Enterococcus bacteria	No significant trend

Source: USGS, *Trends in Surface Water Quality in Connecticut, 1989-1998*

The water quality findings for the Farmington River at Unionville indicate that wastewater treatment and the reduction of point source pollution have resulted in water quality improvements. Increases in chloride concentrations and persistent turbidity, however, are indicative of the effects of land use changes, such as increased urbanization. Continued water quality improvements in the Farmington River may coincide with changes in land use practices and effective stormwater management. However, the minimal river flows needed to support good water quality will continue to occur as part of the basin's instream flow management.

2.7 Wastewater Treatment and Waste Assimilation

The Farmington River is dependent on runoff, base flow, and tributary flows to help dilute treated wastewater effluent. The river receives wastewater discharges from numerous public and private sources. The principal discharges are from municipal sewage treatment plants located in New Hartford, Canton (the facility in the study area), Farmington, Simsbury, and Windsor. Additionally, there are sewage treatment plants on Farmington River tributaries including the Winsted plant on the Still River and the Bristol and Plainville plants on the Pequabuck River. The high level of wastewater treatment enables the Farmington River to maintain a relatively high water quality that helps support extensive recreational activity. Only the New Hartford and Winsted plants are upstream of the Upper Collinsville Mill Pond. The Canton facility is adjacent to the impoundment.

Based on the findings from the Farmington River Instream Flow Study, the river has adequate capacity to assimilate wastewater under minimum flow conditions. Furthermore, the Farmington Wild and Scenic Study commented on Goodwin Dam flow needs for wastewater assimilation as follows:

“Based on the results of the DEP’s waste load allocation studies for the Farmington, the minimum flow of 50 cfs mandated by State statute was assumed to be adequate to meet the standards for Class B water quality classification.”

The 1988 DEEP waste load allocation report stated the following:

1. Flow levels under the worst case scenario are adequate to assimilate existing discharges without any violations of Class B standards, i.e., the minimum required release of 50 cfs is sufficient to maintain Class B levels with existing discharges.
2. At extreme low flows, even the maximum proposed discharges from both the Farmington and Simsbury sewage treatment plants would not violate the Class B dissolved oxygen standard if they maintained normal secondary treatment.
3. In order to meet the stricter water quality standards for ammonia required for Atlantic salmon, the Farmington sewage treatment plant will have to provide advanced (tertiary) treatment.

4. The use of chlorine for disinfection of the increased Farmington sewage treatment plant discharge could violate standards and, therefore, another technique such as ultraviolet light or dechlorination equipment will be necessary.

Subsequent to the 1988 DEEP waste load allocation report, the Farmington treatment plant modifications were made. The water quality data provided earlier supports the conclusions that the river has been assimilating wastewaters.

Based on discussions with the DEEP, lower phosphorus discharge limits are anticipated in the future. The Environmental Protection Agency (EPA), which jointly issues National Pollutant Discharge Elimination System (NPDES) permits with the Massachusetts Department of Environmental Protection in Massachusetts, has been issuing permits in that state with phosphorous limits of 0.2 mg/l or lower in areas where nutrients have impaired the watershed. The Town of Canton's existing wastewater treatment plant is not designed to remove phosphorous. Phosphorous removal generally involves biologically removing the phosphorous and/or chemically precipitating and then removing the phosphorous. In both cases, the phosphorous is removed from the treatment process as sludge.

The cost of implementing phosphorous removal will ultimately depend on the permit limits established by the DEEP. At a minimum, the water pollution control facility may require a significant renovation/retrofit project. If the cost of the renovation and retrofit is significant, it may be advantageous for the town to consider constructing a new facility.

2.8 Recreation Overview

The Farmington River supports an extensive variety of passive and active recreational activities extending over the full length of the river. From the East Branch to Unionville, the river has a swift current and rocky substrate. The designated Wild and Scenic River segment and downstream areas comprise the most heavily stocked trout stream in the state and is the most intensely fished section of the entire river. Each kilometer of the study segment receives an estimated 1,000 fishing days annually. Use increases to more than 1,600 angler days per kilometer in the 3.6-mile long Trout Management Area (TMA) in Barkhamsted. In total, these figures translate into an estimate of more than 25,000 fishing days per year in the segment as a whole.

The river offers high quality fly fishing with a relatively high catch rate, particularly in the TMA. Most fishing within the segment is seasonal, with roughly 60% of the activity occurring in the spring although catch and release fishing is allowed year round in the TMA. Controlled releases of low temperature water from the West Branch Reservoirs allow for summer and fall stocking throughout the segment, supporting an extended season. The Farmington River's late-season fishing is particularly valuable because many other trout streams in the region are no longer fishable (Wild and Scenic River Study, 1995).

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).

The combination of recreational attributes in the river led to the designation as a regionally unique recreational resource (Wild and Scenic River Study, 1995). Additionally, because of managed releases from the Goodwin Dam that extend the recreation season beyond what would be available naturally, the Farmington River is one of only two rivers in Connecticut that offers white water canoeing, kayaking, and tubing throughout the summer, when these activities are most popular (Wild and Scenic River Study, 1995).

The lower segments of the river from Farmington to Tariffville provide different types of opportunities, including flat water canoeing, bass fishing, use of sculls, and golfing on the meadows.

A detailed discussion of recreation in the study area is included in Sections 5.4 and 6.1.

2.9 Review of Hydropower Study

The Town of Canton retained GZA GeoEnvironmental, Inc. to complete a feasibility study of repowering the Collinsville dams for hydroelectric power generation. The report "Pre-Feasibility Study for Re-Powering the Upper and Lower Collinsville Dam Along the Farmington River" (the "Pre-Feasibility Study") was completed in May 2011. 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. The study also evaluated ways of utilizing the power locally or on a broader scale and presented a detailed discussion of environmental, historical, and regulatory issues associated with restoring hydropower.

Any option for restoring hydropower generation to the Upper Collinsville Dam would necessitate raising the water surface elevation three feet. Thus, environmental, historical, and regulatory issues associated with restoring hydropower at the upper dam are similar to those that would be anticipated as a result of pursuing increased water depths for enhanced recreation. Section 7.0 of this document will describe methods of modifying the dam to increase the water surface elevation. For consistency, the methods discussed herein and the associated costs are the same as those presented in the Pre-Feasibility Study.

3.0 IMPOUNDMENT CHARACTERISTICS

3.1 Bathymetry and Depths

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. This is generally consistent with the reported elevation of the dam in the Pre-Feasibility Study. Section 3.2.2 of the Pre-Feasibility Study includes a schematic of the spillway (dated 1942) with an elevation of 286.2 feet.

Thousands of data points were collected by the MMI survey crew, spanning the distance from the dam to slightly upstream of Town Bridge Road. Refer to appended Figure I for a depiction of impoundment water depths.

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. In general, the bathymetric profile can be characterized as follows:

- ❑ 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.
- ❑ 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.
- ❑ Intermediate depths are found elsewhere.
- ❑ 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.
- ❑ 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.

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. The USGS topographic map dated 1951 indicates a water surface elevation of 289 feet.

The Light Detection and Ranging [LiDAR] topography available around the impoundment was used to estimate the edge of water under scenarios with the flashboards installed and the corresponding water surface at an elevation of approximately 289 feet. For the most part, this simulated edge of water is coincident with the boundaries of the wetlands around the impoundment, which were delineated for this study as described below in Section 4.0. This is not surprising given that the land between the wetland boundary and the current edge of water was seasonally inundated until use of the flashboards was discontinued. Note that the USGS topographic map for this area denotes a water surface elevation of 289 for the impoundment.

At the current water surface elevation of 286, the backwater of the impoundment does not extend upstream of the island near Town Bridge Road. In other words, there is a low water surface gradient extending from the upstream end of the island to the downstream end of the island. The expression of this gradient is a moderately deep riffle present on the east side of the island.



View of riffle near Town Bridge Road facing downstream

When standing on the dry riffle on the west side of the island, one can see that the water surface on the downstream side is roughly half a foot lower than it is on the upstream side. With the flashboards installed, the gradient in this area was evidently submerged, and the backwater of the impoundment would have extended upstream beyond the Town Bridge Road bridge.



View of dry riffle

Although beyond the scope of the bathymetric survey, it is possible to qualitatively estimate how the water surface elevation changes in response to varying river discharge rates. Consider the following observations:

**TABLE 3-1
Gauged Discharges and Water Surface Elevations**

Date	Discharge at the Unionville Gauging Station*	Water Surface Elevation	Observations at Bridge Street/River Road Islands
April 30, 2011	1,040 cfs	>286 feet	Two islands are very small; the easternmost is barely exposed.
May 11, 2011	430 cfs	286 feet	Two islands are larger.
May 24, 2011	1,100 cfs	>286 feet	Two islands are very small; the easternmost is barely exposed.
July 6, 2011	460 cfs	286 feet	Two islands are larger.
July 17, 2011	350 cfs	<286 feet	Two islands are quite large, but the third patch of sand is <i>not yet exposed</i> .
July 21, 2011	320 cfs	<286 feet	Two islands are quite large, and a third patch of sand is <i>exposed</i> .
August 28, 2011	>30,000 cfs	>292 feet	Flooding conditions; islands are submerged.

**All discharge data are considered preliminary by USGS until formally reviewed and published.*

From July 6 to July 17, 2011, the water surface decreased several inches as the discharge decreased from approximately 460 cfs to 350 cfs. From July 17 to July 21, the decrease from 350 cfs to 320 cfs caused a sufficient decrease in water surface elevation such that the third island became exposed near the Bridge Street/River Road intersection.

Other manifestations of changing river discharge rates from spring through summer include small “beach” areas and bedrock outcrops becoming exposed and changing flow characteristics at the riffle in the vicinity of the island near Town Bridge Road.



Emerging sandbars



Emerging beach near boat launch and trail



Dry riffle at island near Town Bridge Road

3.2 Shoreline Survey and Reconnaissance

During the bathymetric survey, structures and outfalls along the shoreline were recorded and elevations were determined. In addition, reconnaissance-level inspections of the shoreline of the impoundment were conducted on several occasions in spring and summer 2011 as the water surface decreased in connection with relatively lower river flows. Observations related to wetlands and vegetation are included in the wetland evaluation report in Appendix A, which is described below in Section 4.1 of this report.

East Side of Farmington River

At the upstream end of the study area, a large cobble beach is located upstream of Town Bridge Road and a small sandy beach is located downstream of Town Bridge Road near the abutment. The shoreline is vegetated and generally in a natural state on the south side of Town Bridge Road except at its eastern extent at #55 Town Bridge Road where the riverbank is mowed and maintained as a lawn.

Armoring along the bank does not appear until the outer bend of the riffle adjacent to River Road, where riprap has been placed on the slope between the road and the river. A significant span of outcrops occurs immediately downstream of the riprap, protruding from the water and extending partway up the slope to River Road. The popular recreational area known as Flaherty's Rock is located here.

A span of rocky vegetated riverbank is located between Flaherty's Rock and Riverside Nursery. Much of the riverbank along Riverside Nursery alternates between sections of intact and crumbled concrete walls. The water is adjacent to the wall and a beach is not present.

Various pipes and culverts are present in the wall sections, including (from north to south) a 15-inch corrugated metal pipe, a 15-inch reinforced concrete pipe, an eight-inch PVC pipe, a one-inch PVC pipe, a three-inch plastic pipe, two 30-inch corrugated plastic pipes, and two six-inch cast iron pipes. The one-inch and three-inch pipes appear to be intakes, whereas the others appear to be stormwater outfalls or irrigation return pipes.



Walls along Riverside Nursery



Pipes in the wall along Riverside Nursery

The southern end of the nursery's property abuts the private residential land at 52 and 53 Old River Road owned at the present time by the Redfords. The riverbank in front of this residence consists of a few failed wall sections and other debris. According to Mr. Redford, the wall was erected in the 1920s after the property suffered erosion.

Two town-owned parcels are located south of the terminus of Old River Road. These are the town garage and WPCF (#50 River Road) and a mostly vacant property (#2 River Road) where a gazebo has been recently constructed. The two parcels are separated by Rattlesnake Brook. A small gravel beach area is located adjacent to the town garage site, but for the most part the riverbank is relatively vegetated downstream to the mouth of Rattlesnake Brook. A 15-inch reinforced concrete pipe (believed to be the WPCF outfall) and a capped 15-inch cast iron pipe are located in this area.



Asphalt patches along town-owned property

Downstream of Rattlesnake Brook, vegetation is comparatively sparse and a few patches of asphalt were observed on the slope between the Farmington River trail and the impoundment.



Stormwater outfall near trail

The Farmington River trail is located immediately adjacent to the impoundment along the bend of the river near the River Road/Bridge Street intersection. The riverbank below and downhill from the trail is vegetated and steep. Six stormwater outfalls and stream culvert outlets are located in this span. From upstream to downstream, these are a 24-inch reinforced concrete pipe, an 18-inch reinforced concrete pipe, two 15-inch reinforced concrete pipes, an 18-inch reinforced concrete pipe, a 24-inch reinforced concrete pipe.

The small park located adjacent to the boat ramp at 39 Bridge Street is separated from the impoundment by a five to six-foot high vertical rock wall. During high water, the base of the wall is below the water level. During dry periods, a narrow beach emerges at the base of the wall. Streams outlet through this area via a 24-inch cast iron pipe and an 18-inch reinforced concrete pipe.



Rock wall and narrow beach along small park



Rock wall along small park

The #39 Bridge Street property includes the following from west to east: the 41 Bridge Street businesses, Collinsville Canoe & Kayak, and the paved boat ramp. A combination of reinforced and natural riverbank sections is located along this property. The #45 Bridge Street parcel is undeveloped with the exception of an asphalt parking lot and driveway. A combination of reinforced and natural riverbank sections is located along this property as well. A 12-inch smooth lined corrugated plastic pipe and an 18-inch corrugated metal pipe have outlets in the area where the 39 and 45 Bridge Street properties meet.

West Side of Farmington River

From Town Bridge Road to the cemetery land, most of the west side of the river is forested with mainly natural banks and few areas of reinforcement. Outcrops are found in several areas. Further downstream, limited shoreline protection along the west side of the impoundment consists of a loose rock armor that has been in place for many years. It was present as far back as 1850 in front of the Sam Collins mansion. The cemetery is now present on this property.



Photo of Sam Collins Mansion courtesy of Canton and Collinsville (2001, Miller)



Current view of loose rock shoreline protection

From the cemetery land downstream the large island on the west side of the river, the riverbank is vegetated and lacks any walls or reinforcement. Sections of a concrete retaining wall are present between the west edge of the impoundment and Collins Road in the southwest portion of the study area.



Area of walls and slopes along Torrington Ave



Area of walls and slopes along Torrington Ave

Areas of active erosion were not observed during the period of the study, which included the high flows associated with Tropical Storm Irene. Likewise, areas of sediment deposition were not observed, other than the shallow areas of islands and sandbars described in Section 3.1. With the near-stable water level caused by the lack of seasonal flashboards, it is likely that the impoundment is reaching equilibrium relative to erosion and deposition.

4.0 BIOLOGICAL RESOURCES

4.1 Wetland Resources

On May 24, 2011 a professional wetland scientist and certified soil scientist with MMI completed a wetland delineation and ecological evaluation of the wetlands and uplands associated with the Upper Collinsville Mill Pond. Refer to the report “Wetland Delineation and Ecological Evaluation” in Appendix A. The report describes wetland and upland soil types, vegetative cover types, the wetland delineation, and wetland functions and values. Wetlands were delineated per State of Connecticut criteria and meet the definition of State and Federal wetlands.

The wetland vegetative cover types present within the study area are:

- Palustrine Open Water (POW)
- Palustrine Emergent Marsh (PEM)
- Palustrine Scrub Shrub (PSS)
- 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. Refer to the report in Appendix A for more information.



View of lower section of impoundment from west side

4.2 Fish Habitat

The Farmington River’s diverse aquatic habitats and high water quality support 37 native and introduced species of fish (Farmington Wild and Scenic River Study, 1995). 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. Recreational fishing is very popular in the Farmington River, particularly the fishing of stocked trout. Catch and release fishing is allowed year round in the West Branch Farmington River and is extremely popular during the spring season.

Aside from being “the most heavily stocked stream in Connecticut,” the Farmington River is “one of the few remaining unpolluted trout streams in southern New England” (Farmington Wild and Scenic River Study, 1995). Approximately 28,000 trout are stocked annually in the Connecticut portion of the Farmington River, and the Massachusetts segment is filled with an additional 9,400 trout.

The Farmington River system in Connecticut also provides some of the most critical habitat in southern New England for the restoration of anadromous fish, particularly Atlantic salmon (Farmington Wild and Scenic River Study, 1995). Of the entire 11,250-square-mile watershed of the Connecticut River, the Farmington River provides 9% of the salmon nursery habitat. Long-term research and restoration programs have been made possible for the Farmington River's hatcheries and fish passageways as a result of the efforts of numerous private and government organizations.

Since 1976, juvenile salmon have been released in the Farmington River. Some adult salmon are captured near the mouth of the river in Windsor and then transported to holding ponds along the West Branch for spawning and hatching. Fry and smolts are released into the tributaries and lower sections of the river for downstream migration. The high survival and growth rates hint that the Farmington River may be capable of supporting natural reproduction. Experts estimate that a natural spawning population of 770 adult salmon can be maintained within the river in conjunction with a yearly sport harvest of 255 salmon. The U.S. Fish and Wildlife Service has approximated that the population of spawning fish could be developed through the release of 100,000 to 300,000 salmon yearly to the river's basin for at least four consecutive years (Farmington Wild and Scenic River Study, 1995).

Fish passage facilities at the main dams are important in regard to the long-term success of the restoration program. A fish ladder has been created at Rainbow Basin, and a downstream passage facility has been established by the Farmington River Power Company.

According to the Upper Farmington River Management Plan, fish passage is critical to the reestablishment of anadromous fish to the Farmington River. Both the Lower Collinsville Dam and Upper Collinsville Dam are devoid of fish passage facilities. The Upper Farmington River Management Plan recommends that fish passage needs should be considered in any future FERC licensing of the Collinsville dams.

Since 1960, cold water has been released from the bottom of the West Branch Reservoir, which consequently creates a favorable habitat for the Atlantic salmon and trout. The release of water in the summer and early fall prolongs the trout and salmon season by creating levels of cold water that are actually higher than those found in nature. Due to this process, the number of fish is preserved and maintained, and it is possible to continue the DEEP's stocking program throughout the summer season.

According to the State of the Farmington River Watershed Report, the effect of the cold water releases is believed to extend as far as the two Collinsville dams. However, the same report also notes that the Upper and Lower Collinsville Dams (along with the former gravel pits in Farmington) create stretches of slack water providing habitat for warm-water fish more typically found in lakes and ponds. As a result, more diversity of fish species exists through these river segments. Warm-water species such as yellow

perch, calico bass, largemouth and rock bass, and pickerel can be found in these locations.

The firm Environmental Research and Consulting (ERC) of Pennsylvania was retained to conduct an independent evaluation of fisheries data and recommend methods of enhancing fish habitat in the study area. ERC reports that the Farmington River supports a diverse fish community comprised of cold-, cool-, and warm-water species. ERC further verified that brown, brook, and rainbow trout populations in the Farmington River have been actively managed and supplemented by stocking since the 1920s, and the river now supports one of the best trout fisheries in the Northeast. A program to restore anadromous fish (fish that spawn in fresh water but spend most of their life in the ocean) to the Farmington River was initiated in 1976 when a fishway around the Rainbow Dam in Windsor was opened (FRWA, 2003). The anadromous fish restoration program initially focused on Atlantic salmon and included stocking of hatchery-reared fry. Over 1.2 million Atlantic salmon fry are stocked into the Farmington River annually, with most of the fish released upstream of the Upper Collinsville Dam (DEP, 2008). More recently, the restoration program has been expanded to include anadromous American shad, blueback herring, alewife, and sea lamprey as well as catadromous (spawn in salt water but spend most of their life in fresh water) American eel. Upstream fish migration in the Farmington River is currently impeded by the Lower Collinsville Dam, which does not have fish passage facilities.

Mr. Neal Hagstrom of the DEEP Inland Fisheries Division was contacted by ERC in an attempt to obtain fish sampling data for the Upper Collinsville Mill Pond. Mr. Hagstrom stated that the DEEP has “not sampled the impoundment itself” but had data from three electrofishing surveys immediately upstream of the impoundment (June 2008, September 2008, and June 2009) and one survey downstream of the Lower Collinsville Dam (below the Burlington Brook confluence, June 2009). Mr. Hagstrom’s comments notwithstanding, the fish surveys conducted at Town Bridge Road are within the upstream extent of the study area. Table 4-1 presents a summary of the fish survey data.

The three 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%).

TABLE 4-1
Summary of Fish Surveys

Location	Upper End of Study Area								Downstream	
	Town Bridge Road								Below Burlington Brook	
Date	6/3/2008		9/8/2008		6/5/2009		Total		6/5/2009	
Species	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Sea lamprey, <i>Petromyzon marinus</i>	0	0.00	0	0.00	0	0.00	0	0.00	1	0.42
American eel, <i>Anguilla rostrata</i>	0	0.00	7	0.95	0	0.00	7	0.27	99	41.95
Rainbow trout, <i>Oncorhynchus mykiss</i>	0	0.00	2	0.27	0	0.00	2	0.08	0	0.00
Atlantic salmon, <i>Salmo salar</i>	872	55.02	66	8.99	8	2.60	946	36.01	31	13.14
Brown trout, <i>Salmo trutta</i>	0	0.00	3	0.41	7	2.27	10	0.38	25	10.59
Brook trout, <i>Salvelinus fontinalis</i>	19	1.20	0	0.00	1	0.32	20	0.76	0	0.00
Common shiner, <i>Luxilus cornutus</i>	22	1.39	0	0.00	2	0.65	24	0.91	0	0.00
Spottail shiner, <i>Notropis hudsonius</i>	0	0.00	0	0.00	1	0.32	1	0.04	0	0.00
Blacknose dace, <i>Rhinichthys atratulus</i>	380	23.97	116	15.80	148	48.05	644	24.51	0	0.00
Longnose dace, <i>Rhinichthys cataractae</i>	210	13.25	380	51.77	59	19.16	649	24.70	44	18.64
Creek chub, <i>Semotilus atromaculatus</i>	8	0.50	0	0.00	14	4.55	22	0.84	0	0.00
Fallfish, <i>Semotilus corporalis</i>	0	0.00	0	0.00	1	0.32	1	0.04	2	0.85
White sucker, <i>Catostomus commersoni</i>	38	2.40	92	12.53	52	16.88	182	6.93	1	0.42
Rock bass, <i>Ambloplites rupestris</i>	1	0.06	0	0.00	0	0.00	1	0.04	0	0.00
Pumpkinseed, <i>Lepomis gibbosus</i>	0	0.00	0	0.00	1	0.32	1	0.04	0	0.00
Bluegill, <i>Lepomis macrochirus</i>	0	0.00	0	0.00	2	0.65	2	0.08	0	0.00
Smallmouth bass, <i>Micropterus dolomieu</i>	0	0.00	0	0.00	0	0.00	0	0.00	6	2.54
Tessellated darter, <i>Etheostoma olmstedi</i>	35	2.21	68	9.26	11	3.57	114	4.34	27	11.44
Yellow perch, <i>Perca flavescens</i>	0	0.00	0	0.00	1	0.32	1	0.04	0	0.00
Total specimens	1,585		734		308		2,627		236	
Total species	9		8		14		17		9	

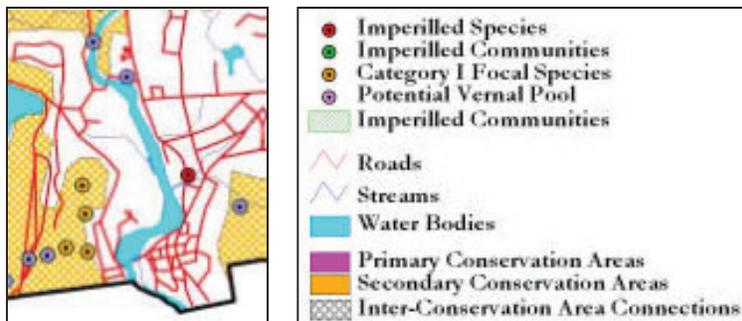
Source: Compiled from CTDEEP spreadsheets (Neal Hagstrom, CTDEEP, personal communication)

Mr. Hagstrom (personal communication with ERC, 2011) was asked his opinion regarding the likely fish species composition in the Upper Collinsville Mill Pond. His response was “Given the tendency for warm water fish to be transported out of the upstream impoundments, I would expect brook trout, brown trout, rainbow trout, largemouth bass, bluegills, pumpkinseed sunfish, redbreast sunfish, fall fish, tessellated darter, white suckers, possibly yellow perch, and of course lots of American eels. I would expect the warm water species to be present in a much higher proportion than in the upstream areas.”

4.3 The Farmington Valley Biodiversity Project

The Farmington Valley Biodiversity Project (FVBP) was an intermunicipal collaboration involving Avon, Canton, East Granby, Farmington, Granby, Simsbury, and Suffield. The primary objectives of the project were to (1) collect and map comprehensive data on the biological resources within the seven-town area; (2) identify and map priority conservation areas for incorporation within each town’s Plan of Conservation and Development to help guide municipal planning and decision making regarding land use; and (3) promote awareness of the region’s unique ecological communities, the importance of biodiversity, threats to biodiversity, and the role that various municipal commissions can take toward the conservation of biodiversity. The project was coordinated by the Metropolitan Conservation Alliance, a program of the Wildlife Conservation Society, and the Farmington River Watershed Association.

Neither primary nor secondary conservation areas are depicted within the study area of the Upper Collinsville Mill Pond. However, a potential vernal pool is depicted near the upstream end of the study area, located between Town Bridge Road and the impoundment as depicted in the graphic below.



This potential vernal pool was observed during the wetland delineation and functions/values assessment and is pictured below. The functions and values of the potential vernal pool are similar to those of the impoundment as a whole and are tabulated in the report in Appendix A.



Wet depression / potential vernal pool

4.4 DEEP Natural Diversity Database

According to correspondence dated April 1, 2011, the DEEP's Natural Diversity Database (NDDDB) 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. Refer to the report "Wetland Delineation and Ecological Evaluation" in Appendix A for copies of the NDDDB correspondence.

According to the correspondence, bald eagles winter along the Farmington River. They regularly use the shoreline trees for perching and feeding from December through March when there is open water during the winter months. The DEEP Wildlife Division recommends that, if possible, all old growth trees at or exceeding 12" diameter at breast height (dbh) should be left standing near the waterside. To avoid affecting wintering eagles, the Wildlife Division recommends avoiding work along the water from December 31 to March 1.

Eastern box turtles require old field and deciduous forest habitats, which can include power lines and logged woodlands. They are often found near small streams and ponds. The adults are completely terrestrial, but the young may be semiaquatic and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Wood turtles require riparian habitats bordered by floodplain, woodland, or meadows. They hibernate in the banks of the river in submerged tree roots. Their summer habitat includes pastures, old fields, woodlands, powerline cuts, and railroad beds bordering or adjacent to streams and rivers. Both of these species are dormant from November 1 to April 1 and have been negatively impacted by the loss of suitable habitat.

If wood or eastern box turtle habitat exists in the vicinity of the Upper Collinsville Mill Pond and will be impacted by an activity, the Wildlife Division recommends that a herpetologist familiar with the habitat requirements of the species conduct surveys between April and September to see if they are present. A report summarizing the results of such surveys should include habitat descriptions, reptile species lists, and a resume providing the herpetologist's qualifications. The results of any investigation should be forwarded to the Wildlife Division and, after evaluation, recommendations for additional surveys may be made.

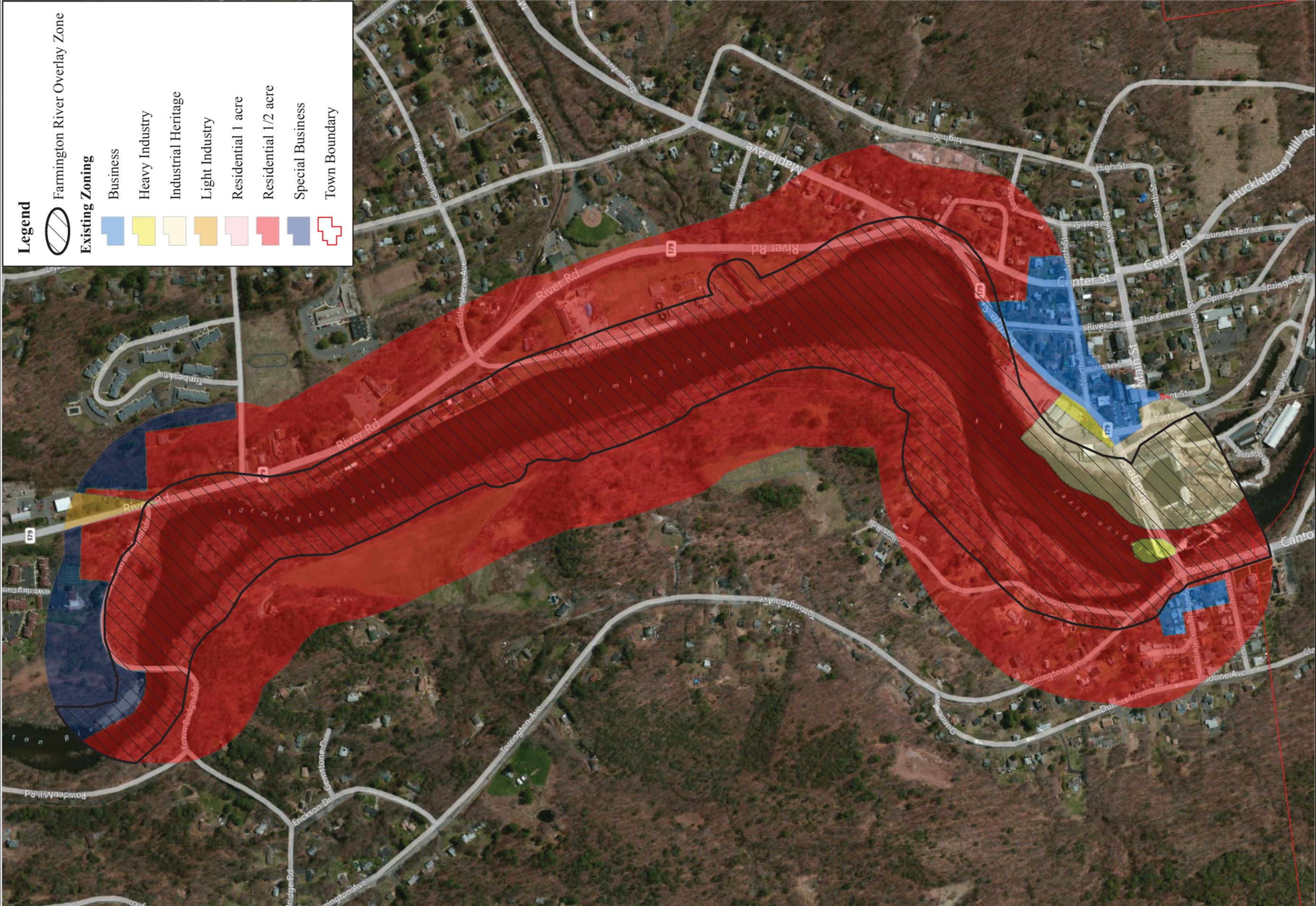
5.0 LAND USE AND PUBLIC ACCESS

5.1 Zoning and Land Use

An understanding of zoning, existing land uses, and proposed land uses is necessary to inform recommendations of this master plan. Six zoning districts and one overlay zone are located within or intersect with the study area. Refer to Figure 5-1 for a zoning map digitized from the Town of Canton zoning map. From upstream to downstream:

- ❑ A portion of the Special Business (SB) zone is located on the north side of Town Bridge Road. This part of the SB zone corresponds to the Rivers Edge Condominiums.
- ❑ A sliver of the Light Industry (LI) zone is located on the east side of River Road north of the Town Bridge Road intersection. Another portion of the SB zone lies on the east side of the LI zone.
- ❑ The Residential ½ Acre zone (AR1) extends from Town Bridge Road to the south along the east and west sides of the impoundment. On the west side, it extends all the way to the Burlington town line. On the east, it extends to Collinsville and wraps around the east and southern parts of the village center. The impoundment is essentially in the AR1 zone.
- ❑ The Business (B1) zone coincides with the village center. Another B1 zone is located near the intersection of Torrington Avenue and Bridge Street.
- ❑ The Industrial Heritage zone (IH-I) corresponds to the old Collins Company buildings and associated land. The IH-I zone is located between the river and the AR1 and B1 zones.
- ❑ A very small Heavy Industry (HI) zone is located on the Upper Collinsville Mill Pond dam. The land area associated with this zone is negligible.
- ❑ The Farmington River and the Upper Collinsville Mill Pond are within the Farmington River Protection Overlay zoning district. For the most part, this zone lies over the AR1 zoning district except where it lies over portions of the SB, B1, IH-I, and HI zones.

Existing land use is not necessarily consistent with zoning. As noted above, the upstream SB zone corresponds to the Rivers Edge Condominiums. The town garage and WPCF are in the AR1 zone as is the cemetery on the west side of the impoundment at the end of Collins Road. On the other hand, businesses are largely located in the two B1 zones, and private residences are located on most of the parcels in the AR1 zones.



Legend

-  Farmington River Overlay Zone
- Existing Zoning**
-  Business
-  Heavy Industry
-  Industrial Heritage
-  Light Industry
-  Residential 1 acre
-  Residential 1/2 acre
-  Special Business
-  Town Boundary

SOURCE:
Town of Canton Zoning Map as amended 2002
2007-2009 Aerial Base from Microsoft Virtual Earth via ESRI
subscription service



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

Figure 5-1: Zoning

**Upper Collinsville Mill Pond
Master Plan**

Location: Village of Collinsville
Canton, CT

Map By: SJB
MMI#: 1752-13
MXD: P:\ zoning.mxd
Date: October 10, 2011
Date: November 15, 2011
Scale: 1 inch = 450 feet

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Proposed land use is depicted in the current Plan of Conservation and Development (2003). Refer to Figure 5-2 for a land use map digitized from the Plan of Conservation and Development. From upstream to downstream:

- ❑ Conservation areas (green) are depicted along both sides of the impoundment from Town Bridge Road to the old railroad abutments (on the west side) and the trail boardwalk (on the east side), inclusive of the town garage and WPCF.
- ❑ A small area of Conservation/Residential is located west of the river on the north side of Town Bridge Road.
- ❑ Institutional land uses (blue) are associated with the Canton police station and a church on the east side of River Road, the cemetery off Collins Road, and the Canton town hall.
- ❑ Residential land uses are shown in red, light red, and pink shades on the map and generally correspond with residential parcels.
- ❑ Business land uses (light blue) correspond to the businesses on the north side of Bridge Street and the Collins Company buildings.

GIS methods were employed to estimate coverage in the 232-acre study area. The area of open water is 45 acres. Approximately 52 acres of land are considered impervious, which is 22% of the total study area and 28% of the total land in the study area.

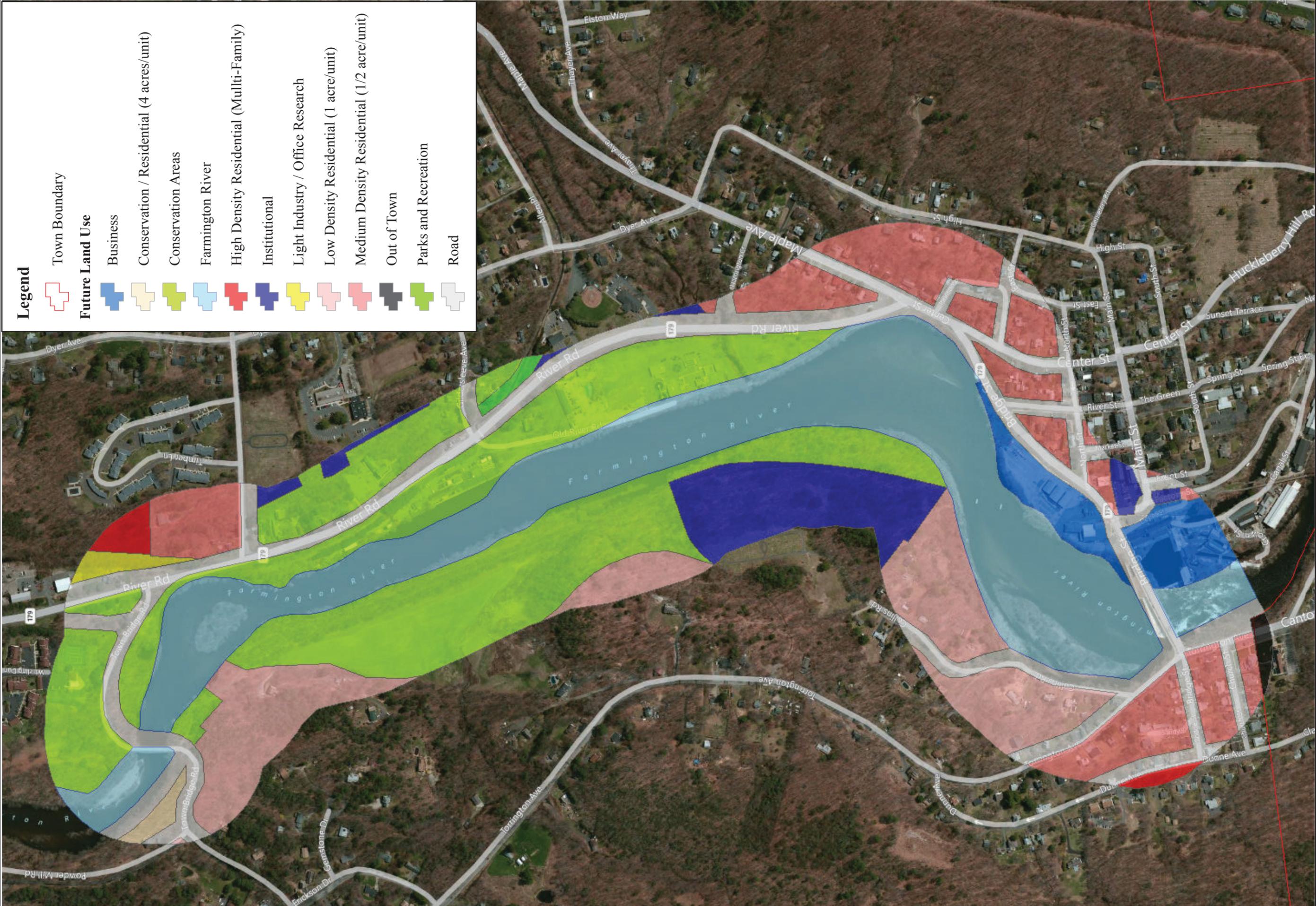
5.2 Parcel Ownership and Use

The Town of Canton utilizes paper mapping for identifying parcels. The study area includes six maps (6-4, 10-2, 10-4, 11-2, 11-4, and 11-6). Hundreds of parcels are located in the study area largely due to the small parcel sizes in the Collinsville village center. This report section focuses on the more substantially sized parcels and those located along the edge of water.

East Side of Farmington River

As noted above, the Rivers Edge Condominiums are located at the upstream end of the study area on the north side of Town Bridge Road and the west side of River Road. The condominiums are separately owned, and common areas are owned by all unit owners.

The two-acre strip of undeveloped land located on the south side of Town Bridge Road (#55 Town Bridge Road) along the river is privately owned. The parcel located at the northwest corner of Town Bridge Road and River Road is privately owned and occupied by a single-family home. The island in this area is state owned.



Legend

Town Boundary

Future Land Use

- Business
- Conservation / Residential (4 acres/unit)
- Conservation Areas
- Farmington River
- High Density Residential (Multi-Family)
- Institutional
- Light Industry / Office Research
- Low Density Residential (1 acre/unit)
- Medium Density Residential (1/2 acre/unit)
- Out of Town
- Parks and Recreation
- Road

SOURCE:

Sept. 2003 Town of Canton Plan of Conservation and Development
2007-2009 Aerial Base from Microsoft Virtual Earth via ESRI
subscription service



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

Figure 5-2: Proposed Future Land Use

**Upper Collinsville Mill Pond
Master Plan**



Location: Village of Collinsville
Canton, CT

Map By: SJB
MMI#: 1752-13
MXD: P:\landuse.mxd
Date: July 18, 2011
Scale: 1 inch = 450 feet

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Parcel boundaries and ownership are complex on the east side of the impoundment. A strip of land owned by the MDC lies over the raw water transmission tunnel that delivers water to the filtration plants in West Hartford and Bloomfield. This strip of land is located on the east side of River Road north of the intersection with Town Bridge Road, then crosses River Road midway between Town Bridge Road and Simonds Road, and is located on the west side of River Road between the road and the impoundment.

Private properties are generally located on the east side of River Road in the vicinity of the MDC property, including parcels north and south of Simonds Road and extending southerly to Gildersleeve Avenue. The 2.78-acre parcel at #55 River Road is owned and occupied by Trinity Episcopal Church.

The property across River Road from the church is #56 River Road, owned and occupied by Riverside Nursery. The nursery's parcel is long and narrow and appears to extend northerly between the impoundment and the MDC strip. According to Assessor mapping, the nursery's property extends as far north as the Simonds Road intersection and includes the outcrops along the edge of water that are used for recreation. The southern end of the nursery's property abuts the private residential land (#52 and #53 Old River Road) owned at the present time by the Redfords.

Two parcels are located south of the terminus of Old River Road. These are both town owned and occupied by the town garage and WPCF (#50 River Road) and a mostly vacant lot (#2 River Road) where a gazebo has been recently constructed. The two parcels are separated by Rattlesnake Brook.



50 River Road – WPCF

The land on the east side of River Road across from the town garage and WPCF is occupied by municipal buildings with addresses #45 River Road (Police Department) and #51 River Road (Fire Department). A ball field is also located on this land.



2 River Road – Town Park

A very small sliver of land at #53 River Road (located at the northeast corner of Gildersleeve Avenue and River Road) is owned by the town. At various times in spring and summer 2011, vehicles have been parked on this unpaved strip of land. Given the location of the Riverside Nursery directly across the street, it is

suspected that nursery employees and patrons utilize this town-owned property for parking.

The triangle formed by River Road, Harrington Court, and Maple Avenue is mainly occupied by residential lots, with the exception of Lot 3 of Map 10-4, which is occupied by the vacant Riverside Gulf gasoline service station. From this point to the south, many residential and commercial properties are located on the east and southeast side of Bridge Street in the village center. These include Collinsville Motorcars, Center Spirit Shoppe, LaSalle Market, and the Gallery 101 building. Institutional and town-owned properties include the post office, town hall, and the Canton Historical Museum. Other businesses such as Down Insurance and the Village Sweet Shop are located immediately outside the study area.



Veterans Memorial Park

The Canton Veterans Memorial Park is located on a small triangular parcel bounded by River Street and Bridge Street.

Assessor mapping depicts two lots located on the strip of land between Bridge Street and the impoundment: Map 10-2 Lot 1 (#45 Bridge Street, owned by the State of Connecticut) and Map 10-2 Lot 2 (#39 Bridge Street, owned by Waterfront Preservation and Management Corporation). The state-owned lot is vacant and includes paved access to the adjacent buildings, but the paved area is chained off from public access.



45 Bridge Street

The #39 Bridge Street property includes the following from west to east: the 41 Bridge Street businesses, Collinsville Canoe & Kayak, the paved boat ramp, and a small park that consists mainly of the Farmington River trail and some benches and grassy areas. The following businesses are currently located in the 41 Bridge Street buildings: Lola & Me furniture and gifts, Blumen Laden jewelry and florist, the Riverpath Café, and TechniArt, Inc.



39 Bridge Street

The remaining land in the study area on the east side of the river is associated with the old Collins Company. The Assessor mapping identifies this land as state owned. The parcel has addresses #42 Bridge Street (Map 10-2 Lot 1430042). Antique shops and the Crown and Hammer Pub are located in the buildings.



42 Bridge Street

West Side of Farmington River

Private properties are located on the west side of the river and impoundment from Powder Mill Road and Town Bridge Road, extending downstream to a point directly across the river from the town garage. At this point, land on the west side of the impoundment is owned by St. Patrick's Church Corporation and consists of a cemetery and associated undeveloped land. The church's parcel is #32 Collins Road, 205 acres in size, and it extends as far south as the northern terminus of Collins Road.

The Assessor mapping depicts the railroad right-of-way along the west side of the river on three large parcels: #115 Torrington Avenue, #109 Torrington Avenue, and the church's land. The right-of-way ends at the impoundment where the railroad formerly crossed the impoundment, near the southeast corner of the church's land. Downstream of this point, properties on the west side of the impoundment are owned by residents of Collins Road until such point that Collins Road directly abuts the impoundment. The very narrow sliver of land between the Collins Road/Torrington Avenue intersection and the impoundment is believed to be state owned.

A small parcel of land (Map 11-2 Lot 80, #44 Bridge Street) is located on the south side of the bridge and east of Torrington Avenue. This state-owned parcel is occupied by a small park with a picnic table and provides pedestrian access to a viewing area above the river.



44 Bridge Street

Mainly residential properties are located on the west side of Torrington Avenue. However, a few businesses (TAB Photographic and an automotive repair shop) are located in this area, and St. Patrick's Church is located on the west side of Torrington Avenue at the extreme southern end of the study area.

5.3 Environmental Conditions and Potentially Contaminated Properties

The DEEP's "List of Contaminated or Potentially Contaminated Sites" (January 2011) was reviewed for this study. Four listed properties were located in the study area as follows:

- ❑ CT DOT, Route 179 – Leaking underground storage tanks (“completed”)
- ❑ Riverside Gulf, 14 Maple Avenue – Leaking underground storage tanks (“completed”)
- ❑ Town of Canton, Old River Road – Leaking underground storage tanks (“completed”)
- ❑ The Collinsville Company, Bridge Street – Form III Property Transfer, “Investigation Started”

A database review was conducted using the Environmental Data Resources, Inc. (EDR) on-demand service. Results are as follows:

- ❑ The Collinsville Company was listed for its Form III filing under the Property Transfer Act. The Form III was filed in 2002.
- ❑ Riverside Gulf was listed for its leaking underground storage tank incident in 1995.
- ❑ The Town of Canton at Old River Road was listed for its leaking underground storage tank incident in 1992.
- ❑ The Town of Canton salt storage facility on Old River Road was listed because it appeared on the DEEP leachate and wastewater discharge sources map.
- ❑ The Canton Public Works Department on River Road was listed due to its NPDES discharge permit.
- ❑ The Town of Canton WPCF was listed because it appeared on the DEEP leachate and wastewater discharge sources map.
- ❑ The CT DOT Canton Maintenance Garage on Route 179/River Road was listed for its registered underground storage tanks (gasoline, status closed, 1991).
- ❑ The CT DOT facility on River Road was listed because it appeared on the DEEP leachate and wastewater discharge sources map.
- ❑ The Champion property at 15 North Street was subject to remediation completed in 1999.
- ❑ A number of spills were reported to the CT DEEP within the study area and were documented in EDR files. The vast majority of these involved low volumes and were reportedly cleaned up.

In general, the EDR 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. While these records are not direct evidence of potential environmental conditions, they indicate that future use of these properties may necessitate more detailed environmental assessments if the proposed use is different than the current use.

5.4 Areas of Existing Public Access

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. Refer to the Figure 5-3 for a depiction of the areas described below, and the recreational observations in Appendix B for notes taken on March 20, April 30, July 7, July 17, and October 15, 2011. From upstream to downstream, public access is generally occurring as follows:

- ❑ As many as 35 cars have been observed parked along Town Bridge Road, extending from the bridge to the sewer pumping station. Most of the parking occurs along unpaved areas along the north and south sides of the road. Based on the width of the roadway depicted in Assessor mapping, many (if not all) of the parking “spaces” may be on town-owned land. However, the potential exists for some vehicles to be parked on private property on the north and south sides of the road. Two trash cans are positioned in this area, implying an informal commitment by the town to support recreation in this area.



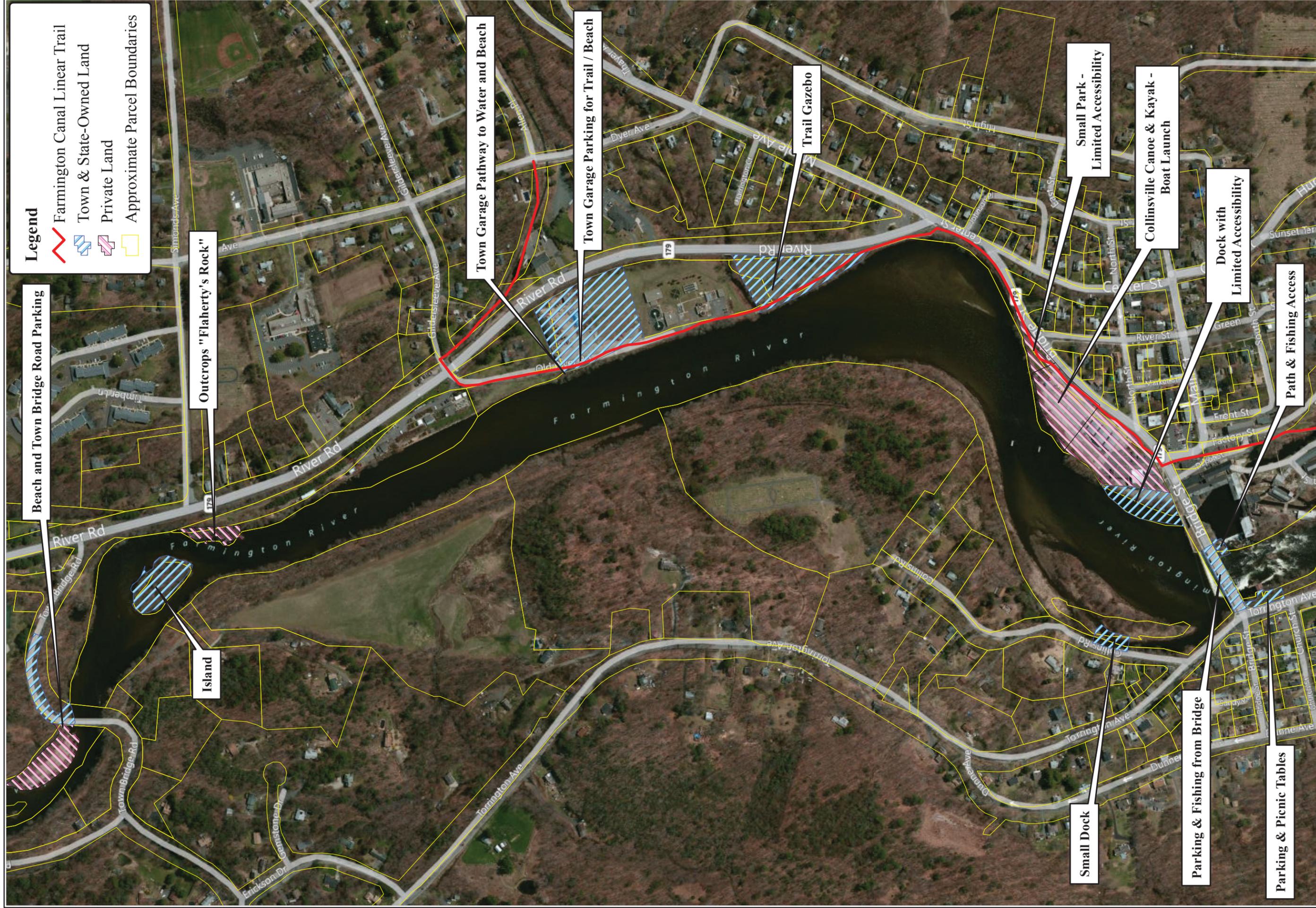
Parking Along Town Bridge Road

- ❑ Sand and gravel bars on the northeast bank of the river are used as beaches on the upstream and downstream sides of the Town Bridge Road bridge abutment. The upstream beach is a cobble deposit and is much larger than the downstream beach, which is sandy. These areas are used for swimming, canoe and kayak access, use of inflatable boats, sunbathing, picnicking, and even for campfires. Fishing does not appear to be common here possibly as a result of the intense swimming and beach usage.



Beaches Near Town Bridge Road

- ❑ The state-owned island near Town Bridge Road is heavily used for recreation. Kayaks and canoes are used to access the island and are often observed on the shore of the island. Day camp children were observed learning to float along the riffle on the north side of the island.



Legend

- Farmington Canal Linear Trail
- Town & State-Owned Land
- Private Land
- Approximate Parcel Boundaries

Figure 5-3: Existing Access

Location: Village of Collinsville
Canton, CT

Map By: SMG
 MM##: 1752-13
 MXD: P:\Fig_5-3.mxd
 Date: October 20, 2011
 Revised: November 15, 2011
 Scale: 1 inch = 400 feet

**Upper Collinsville Mill Pond
Master Plan**



SOURCE:
 Basemap
 Bing Maps Hybrid Datalayer (c) 2010
 Microsoft Corporation and its data suppliers
 Connecticut Parcels datalayer
 provided by CT DEEP GIS (8/2010)
 Funding provided by the Farmington River
 Enhancement Grants administered by the
 Connecticut Department of Energy and
 Environmental Protection.

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- ❑ The outcrops located east and southeast of the island known as Flaherty’s Rock are used for sunbathing, swimming access, and limited kayak access. From 10 to 15 people are often observed on the outcrops on warm sunny afternoons and weekends.
- ❑ A small gravelly beach is located down a short path from the public portion of the town garage parking lot. This area is used for limited kayak access, swimming, and fishing.
- ❑ Several points of access to the water may be located along the Farmington River greenway trail on the town-owned parcel south of Rattlesnake Brook. However, the access points are seldom used because the shoreline is steep and unimproved. A new gazebo is located on this parcel.
- ❑ The small park located east of the paved boat ramp (in the triangle formed by the boat ramp, the impoundment, and Bridge Street) contains a section of the Farmington River greenway trail, a few benches and information kiosks, and limited access to the water. A person would need to walk down a short but relatively steep trail to reach the narrow muddy beach here. The beach is exposed only at lower water levels, such as those occurring in July and August.
- ❑ Collinsville Canoe & Kayak is a busy point of entry for many of the canoes and kayaks observed in the impoundment. While the parking lot is not a public lot, members of the public have been observed parking in the lot and removing their own canoes and kayaks from



Flaherty’s Rock



Beach Adjacent to the Town Garage Lot



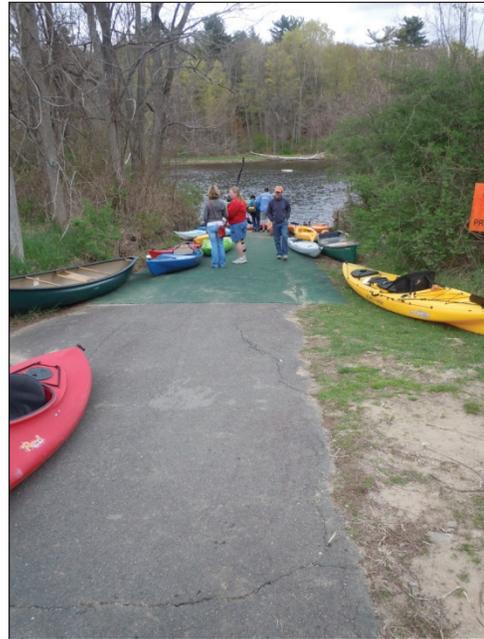
“Beach” Adjacent to Park East of Boat Ramp

their vehicles. The paved boat launch is often busy on pleasant days in the spring and summer, with a combination of people using the services and equipment of Collinsville Canoe & Kayak and people who are not. A second access point (a dock) is also located at Collinsville Canoe & Kayak.

- ❑ Swimming from Collinsville Canoe & Kayak has also been observed. In particular, young adults or teenagers often swim from the property to the old bridge abutments, climb to the top using a rope, and jump off back into the water.



Kayak Usage Near Bridge Abutments



Boat Ramp

- ❑ The #45 Bridge Street parcel on the west side of the 41 Bridge Street building is chained off from public access, but a small wooden dock is located on the shoreline.



Dock Adjacent to 41 Bridge Street Parcel



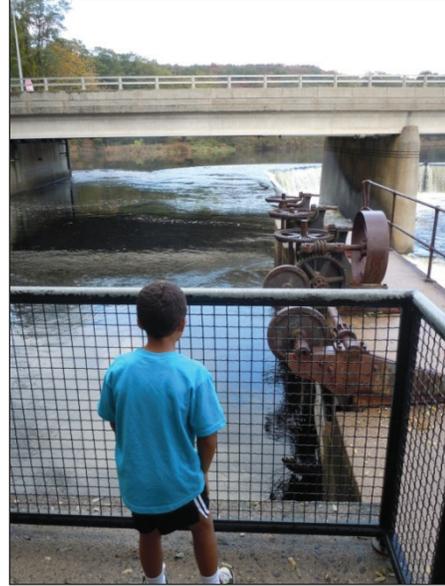
Fishing From Bridge Street

- ❑ Fishing is popular from the Bridge Street bridge above the dam. Fishermen often park on the bridge due to the wide shoulders on either side of the roadway.

- ❑ Fishing is also popular downstream of the dam on the west side of the river, downslope from Torrington Avenue. In one instance, someone was observed fishing from the small peninsula on the south side of Bridge Street between the pool and the river.
- ❑ A small park at the southwest corner of Bridge Street and Torrington Avenue (#44 Bridge Street) provides public access for fishing, viewing the river, and picnicking.



Canoe Dock Along Collins Road



View of Raceway From 44 Bridge Street

- ❑ Collins Road residents utilize a stairway and small dock adjacent to Collins Road to access the slack water area on the west side of the large island. Several canoes are typically beached in this area.
- ❑ Public access is very limited on the west side of the impoundment. Two locations were observed where paths evidently lead through the property owned by the church to the edge of the water. During the course of this study, people have not been observed on the paths.

Property ownership was described in Section 5.2. As noted above, public access in the study area and public access to the impoundment are largely occurring without any formal access identified or any procedures in place. In addition, use of a parcel for public access is not always consistent with ownership of the land. Table 5-1 summarizes ownership for the areas of public access. All ownership information is taken from Assessor mapping and property records.

**TABLE 5-1
Property Ownership and Public Access to Upper Collinsville Mill Pond**

Description	Use	Address	Map	Lot	Owner
Town Bridge Road	Parking	Town Bridge Road	6-4	NA	Town
Beach east of bridge*	Water access	55 Town Bridge Road	11-6	2	Atwater (private)
		NA	NA	NA	State
Beach west of bridge*	Water access	Wickhams Fancy	6-4	106	Rivers Edge Condominiums (various owners)
		NA	NA	NA	State
Island	Water access	NA	11-6	78	State
Outcrops	Water access	56 River Road	11-4	41	Riverside Nursery
Town garage parking	Parking	50 River Road	11-4	38	Town
Beach near town garage	Water access	50 River Road	11-4	38	Town
Gazebo	Land access	2 River Road	10-4	1	Town
Small park	Land and limited water access	39 Bridge Street	10-2	2	Waterfront Preservation & Management Corp.
Collinsville Canoe & Kayak	Water access	39 Bridge Street	10-2	2	Waterfront Preservation & Management Corp.
Small dock	Water access (chained off)	45 Bridge Street	10-2	1	State
Bridge Street bridge	Fishing access	Bridge Street	11-2	NA	State
Picnic area	Land access	44 Bridge Street	11-2	80	State
Path along dam	Fishing access	42 Bridge Street	11-2	NA	State
Collins Road	Water access	Collins Road	11-2	NA	State
East of Collins Road #1	Water access	32 Collins Road	11-4	32	St. Patrick's Church Corporation
East of Collins Road #2	Water access	32 Collins Road	11-4	32	St. Patrick's Church Corporation

*Two sets of owners are listed as portions of these beaches are likely owned by the state given their partial inundation at high water.

The Farmington River greenway trail is a significant corridor of public access in the study area. In contrast to those areas described above, the trail is a designated public accessway. People are observed walking, jogging, bicycling, walking dogs, and rollerblading on the trail. Parking access to the trail is available at the town garage parking lot (against the fence) and in areas south of Collinsville. People do not appear to use the Collinsville Canoe & Kayak parking lot for trail access.



Family Cycling in July 2011



People Jogging in October 2011

5.5 Recent River Use and Economic Study

The Center for Public Policy and Social Research (CPPSR) at Central Connecticut State University conducted a study for the Farmington River Watershed Association between May and October 2008. The study, entitled “Use and Economic Importance of the Lower Farmington River and Salmon Brook,” was conducted in support of the designation of the lower section of the river as Wild and Scenic status. The Collinsville area was included in the study.

A brief in-person recreational survey was conducted at 15 key recreation access points along the lower Farmington River and Salmon Brook. The purpose was to develop a list of individuals who agreed to complete a future mail survey. A small amount of user information was collected at the time of the interviews. A total of 566 intercept interviews was completed over 60 days. These interviews were done in half-day increments randomly dispersed by day of the week and time of day (morning from 8:00

to 12:00 a.m. and afternoons from 12:00 to 4:00 p.m.) from May through September, 2008. Each access point was surveyed four times, twice in the morning and twice in the afternoon. The most upstream access point was at Collinsville. Three locations were selected: (1) Point #16 at upstream end of trail, (2) Collinsville Canoe & Kayak, and (3) the walking bridge area.

Responses to the recreational survey questions indicated that walking/jogging is by far the most popular recreational activity in the area practiced on the day of initial contact for this study by about a quarter of the respondents (25.7%) and mentioned as their primary activity by almost a third (30.8%). Biking, dog walking, and kayaking/canoeing are also common pastimes practiced by about 10% of respondents (8.3% to 11.1%) and mentioned as their primary activity by between 12% and 15% of respondents. Wildlife observation while rarely mentioned as a primary activity was a very common ancillary activity practiced by about 15% of respondents.

Recreational survey respondents were fairly satisfied with both the condition of the river and the lands bordering it. Only three potential problems were assessed near the scale midpoint reflecting that these issues were seen as moderately important (range from 3.10 to 3.00 on 1 to 5 scale). These were (1) not enough restrooms along the river, (2) litter on the banks along the river, and (3) litter in the river.

CPPSR also conducted business surveys and a real estate study. For the business survey, 30 owners or managers of businesses were targeted from a FRWA mailing list of businesses in close proximity to the lower Farmington River and Salmon Brook. Businesses were selected based on having a link to river users or recreation. The survey assessed value attached to presence of river, value based on proximity to river, support for watershed protection measures, etc. Nine businesses in Collinsville were selected to participate; this is a relatively large proportion of the total of 30 businesses:

- Center Spirit Shoppe, Retail
- 101 Gallery, Retail
- Collinsville Canoe & Kayak, Recreation Related
- Lasalle Market and Deli, Restaurant
- Huck Finn Adventures, Recreation Related
- Riverside Nursery, Agricultural/Gardening
- Crown and Hammer Pub, Restaurant
- Carol and Company, Retail
- Mathein Silver Works, Wildlife Photography

The majority of the 30 participants believe that the lower Farmington River is the water body that best defines the area where their business is located. For many, it positively affects how one feels about the place they have chosen to operate a business. Most participants (63%) feel the quality of the river has increased since they first started doing business in the area. An additional 30% feel the quality of the river has stayed the same. Most participants (about 2/3) are satisfied with the quality of the river and the lands

surrounding the river. When asked to elaborate, the most common response was that the river was “very beautiful.” Other positive comments included mention of the many recreational opportunities and the perception that the river has become cleaner in recent years.

Negative comments addressed the need for the river to be cleaner and the need for more access points for canoeing and kayaking. Several businesses mentioned that they would like to see more tourism development as well as more information about recreational opportunities made available to the public. Slightly more than half of the businesses are located more than 50 yards from the river. Overall, respondents felt that the river has a moderate to significant effect on their businesses. These individuals feel the river is important to their business because (a) their business is related to the recreational opportunities associated with the river and/or (b) the river attracts tourists, which increases the demand for local businesses.

The most common comment was that the Farmington River Greenway was a positive development for businesses in the area. In addition, flood control policies are viewed favorably as are trout management policies of the DEEP. Two businesses complained that water levels are kept too low, which (in their opinion) is bad for canoeing and kayaking. In addition, there is great support for protecting the area as a National Wild and Scenic River. The primary benefits for doing this include preserving aesthetic beauty, increasing public education about the environment, and improving fish and wildlife habitat.

For the real estate study, the impact of proximity to the lower Farmington River and Salmon Brook on real estate values in the 10-town study area was assessed. The data set consisted of 700 residential property sales in the 10-town study area. The sample came from property sales occurring between 2004 and 2006. Property sales were chosen randomly but were weighted by the size of the town relative to the study area, i.e., larger communities had a larger representation in the sample. Distance to the Farmington River was measured using Geographic Information System (GIS) software. The data estimating the value of the property as a function of distance to the river and other amenities (such as lot size, square footage of the property, etc.) was used to develop a price model. The coefficient of the proximity variable suggests that home buyers are willing to pay approximately \$14,000 to be a mile closer to the Farmington River or Salmon Brook. This suggests that the lower Farmington River and Salmon Brook are an amenity local residents are willing to pay for.

5.6 Connecticut Boating Statutes and Regulations

With the loss of the flashboards circa 2003, boating in the Upper Collinsville Mill Pond has been informally restricted to nonmotorized 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.

With the potential for increased water depths associated with hydropower restoration or as a result of this master plan, an understanding of boating regulations is beneficial. Chapter 268 of the Connecticut General Statutes (Section 15-129) covers boating safety and noise. Vessels operated on federal and state waters (such as the Upper Collinsville Mill Pond) shall comply with the federal and state safety and equipment requirements contained in Chapter 268. In particular, parts (b), (c), and (d) address noise requirements:

- (b) No person shall operate or give permission for the operation of any motorboat on the waters of this state unless such motorboat is at all times equipped with a muffler or muffler system which enables such motorboat to be operated in compliance with subsections (c) and (d) of this section and such muffler or muffler system is in use. For purposes of this section "muffler" or "muffler system" means a sound suppression device or system designed and installed to abate the sound of exhaust gases emitted from an internal combustion engine and causes such engine to operate in compliance with subsections (c) and (d) of this section. "Muffler system" includes, but is not limited to, an underwater through-the-propeller-hub exhaust outlet system.*
- (c) No person shall operate or give permission for the operation of any motorboat on the waters of this state in such a manner as to exceed the following noise levels: (1) For engines manufactured before January 1, 1993, a noise level of 90 dB(A) when subjected to a stationary sound level test as prescribed by Society of Automotive Engineers Specification Number J2005; (2) for engines manufactured on or after January 1, 1993, a noise level of 88 dB(A) when subjected to a stationary sound level test as prescribed by Society of Automotive Engineers Specification Number J2005. If a motorboat is equipped with more than one engine, the said noise levels shall apply when all such engines are simultaneously in operation.*
- (d) No person shall operate or give permission for the operation of any motorboat on the waters of this state in such a manner as to exceed a noise level of 75 dB(A) measured as specified by Society of Automotive Engineers (SAE) Specification Number J1970.*

SAE J1970 was developed due to the enforcement difficulties of the previous methods of decibel measurement. SAE J1970 is a shoreline noise test that requires keeping a boat under 75 dBA at a distance of 50 feet.

The Connecticut Boating Regulations are divided among Regulations of Connecticut State Agencies (RCSA) Sections 15-121, 15-140, 15-144, 26-16, and 26-112. In general, the regulations cover safety, registration fees, and other usage requirements but have not addressed noise and speeds in inland waters. Section 26-16-1 addresses prohibited uses in "designated boating access areas." According to this section, "At any boating access area which is under the control of the Department of Environmental Protection and is intended to provide public access, or parking related to such access to streams, lakes, ponds or tidal waters, including Long Island Sound, the following regulations shall apply:"

- (a) No person shall discard any fish or portion thereof.
- (b) No person shall dispose of any litter, as defined in Section 22a-248 of the Connecticut General Statutes, except into a receptacle provided for such purpose, and no person shall dispose at such facility of any litter not generated at such access area.
- (c) No person shall wash or clean any vehicle except a boat trailer. A vessel or boat trailer may be cleaned only with plain water. No person shall use any detergent or chemical agent to clean a vessel or boat trailer.
- (d) No person shall park a vehicle except in an area designated by the Commissioner for parking.
- (e) No person shall kindle a fire.
- (f) No person shall engage in camping.
- (g) No person shall engage in disorderly conduct.
- (h) No person shall damage any building, equipment, poster or vegetation.
- (i) No person shall use any such facility for purposes other than:
 - (1) fishing where permitted;
 - (2) parking where permitted for the purpose of fishing, boating, hunting, or observing wildlife;
 - (3) launching of boats or;
 - (4) the observation of wildlife from constructed observation decks.
- (j) No person shall use any such facility for any purpose when it is posted closed by the Commissioner.
- (k) No person shall tie up, moor or anchor a vessel in a manner that may obstruct or interfere with the launching of any other vessel except when actively launching or retrieving a vessel.
- (l) No person shall leave any vessel unattended in the water or on land, or tied to any state dock or pier.
- (m) No person shall moor or anchor a vessel or leave a vessel on land at any such facility.
- (n) No person shall engage in any commercial activity at such facility unless so authorized by the Department of Environmental Protection.
- (o) No person shall erect or post any notice or sign unless authorized in writing by the Commissioner.
- (p) No person shall consume any alcoholic liquor. "Alcoholic liquor" as used in this subsection, shall have the same definition as in Section 30-1 of the Connecticut General Statutes.
- (q) No person shall engage in sport fishing from the courtesy docks or from the ramp surface when said sport fishing interferes with boating activities. "Courtesy docks" means, in this subsection, floating or non-floating platforms that are located adjacent to a launch ramp for use by boaters to facilitate the loading or unloading of boats.
- (r) No person shall engage in bathing, swimming, snorkeling or scuba diving.
- (s) Dogs must be on a leash no longer than seven (7) feet and under the control of their owner or keeper. The person responsible for the dog must hold the leash at all times. The provisions of this subsection shall not apply to the proper use of dogs while in the act of hunting, however, all dogs may be prohibited on any area or during any time period when so posted by the Department.

Although the state owns the Upper Collinsville Mill Pond, the DEEP does not control any designated access areas.

The Connecticut boating regulations for restricted speed limits became effective on July 8, 2011. Section 15-121-B14 specifies the following:

- (a) No person shall operate a motorboat at a speed in excess of Slow-No-Wake within one hundred feet of shore, or of a dock, pier, float, or anchored or moored vessel, unless such motorboat is approaching such float, dock or shore for the purpose of enabling a person engaged in waterskiing to take off or land.
- (b) The Commissioner may temporarily limit vessel speed to Slow-No-Wake in a construction area or in association with a marine event authorized by the Commissioner pursuant to Section 15-121-A6. Uniform State Waterway Marking System controlled area regulatory markers may be placed to indicate the Slow-No-Wake area.
- (c) Violation of subsection (a) of this section shall be an infraction.
- (d) This section shall not preempt town ordinances or regulations which are adopted in accordance with Section 15-136 of the Connecticut General Statutes and which have more stringent speed limits or distance from shore limits.

Municipalities in Connecticut have used a variety of methods of controlling motorized watercraft. For example, the Town of East Hampton has a section of its municipal code dedicated to boating and regulates the speeds and hours of operation of motorboats on Lake Pocotopaug. The Crystal Lake Association in Ellington regulates the speeds and hours of motorboat usage as well as waterskiing. The Town of Canton does not appear to have an ordinance addressing noise or motorboats based on a review of ordinances available on the town's website.

The Connecticut Noise Regulations (RCSA Section 22a-69-1 to 22a-69-7.4) allocate land uses into three classes – A, B, and C. Recreational use areas are listed in Class B. Section 22a-69-3.5 specifies that an emitter in a Class B zone may not exceed a noise level of 62 dBA as measured at a receptor such as another person. However, Section 22a-69-1.7 excludes “sound created by any mobile source of noise... Mobile sources of noise shall include but are not limited to such sources as aircraft, automobiles, trucks, and boats. This exclusion shall cease to apply when a mobile source of noise has maneuvered into position at the loading dock, or similar facility, has turned off its engine and ancillary equipment, and has begun the physical process of removing the contents of the vehicle.” Thus, the limit of 62 dBA would not apply to motorized watercraft.

At the present time, it appears that shallow water depths are providing the primary control for preventing the usage of motorized watercraft on the Upper Collinsville Mill Pond.

Although Connecticut regulations control the distance and speeds that motor boats operate relative to the edge of water, the town can establish an ordinance to control the maximum speeds for watercraft as other towns have done. At the second public information meeting described in Section 6.0, a resident proposed that the town pass an ordinance to regulate watercraft speed to headway speeds only (six miles per hour within 50 feet of shore). This would essentially prevent motorized watercraft from using the Upper Collinsville Mill Pond, given the width of the impoundment.

6.0 PUBLIC PARTICIPATION

6.1 Upper Collinsville Mill Pond Master Plan Steering Committee Meetings

Public participation was an important part of the Upper Collinsville Mill Pond Master Plan. The public was notified of the meetings of the Upper Collinsville Mill Pond Master Plan Steering Committee, and a few members of the public attended a few of these meetings. Committee meetings were held on April 26, June 7, August 30, October 4, and November 16, 2011. Refer to Appendix C for copies of the meeting minutes.

6.2 Mailings, Emails, and Project Web Page

Two formal mailings were prepared and sent to all property owners within the study area. The first mailing was sent on May 27, 2011 prior to the first public information meeting described below in Section 6.3. The letter provided notification of the public meeting and the availability of the recreational users' survey described below in Section 6.5. The second mailing was sent on October 14, 2011 prior to the second public information meeting. One copy of a letter from each mailing¹ is provided in Appendix D.

The Town of Canton utilizes an "email blast" service to notify residents of important events and public meetings. The email blast service was used to provide notification of the two public meetings and the availability of the draft master plan.

The Town of Canton hosted a page on its web site with links to the Upper Collinsville Mill Pond Master Plan Steering Committee meeting minutes and the recreational users' survey. Milone & MacBroom, Inc. hosted a page on its web site with photographs, background information about the study and master plan, and various draft documents and maps. During the public comment period preceding and following issuance of the draft report (October and November 2011), the web page included links to PDF copies of the master plan report, appendices, and all maps and graphics.

6.3 Public Information Meetings

The Upper Collinsville Mill Pond Master Plan Steering Committee hosted a public information meeting on June 16, 2011 at 7:00 p.m. at the Canton Library/Community Center. Refer to Appendix D for copies of the announcements printed in the Canton Patch, dotCanton, and Hartford Courant; the power point presentation and meeting minutes; and articles printed in the Canton News and Valley Press. The two project web pages also provided notification of the meeting. The meeting was well-attended and many comments were received. Some of the comments voiced at the meeting included the following:

¹ All the letters in each mailing were identical

- ❑ River access is important to address. There needs to be a public location to unload small boats. Is the existing access located on private property?
- ❑ Is the return of water skiing being considered? What is the appropriate depth? Is the erosion potential from the wakes going to be considered? Is there a 100-foot wake-free buffer required by DEEP?
- ❑ Mills Pond is available for ice skating. It doesn't make sense for this river. Why was it listed in the recreational survey?
- ❑ The area around the house on Old River Road is heavily congested (pedestrians, bicycles, joggers, vehicles, etc.). The congestion needs to be relieved and traffic needs to be calmed.
- ❑ State regulations and statutes may regulate motorized vs. nonmotorized watercraft.
- ❑ It is difficult for the public to know where they can and cannot access the river. Signage should be considered to help guide them. Some areas are overutilized.
- ❑ Trespassing is a concern. Is enforcement going to be considered? The solution may be a combination of enforcement and providing better access.
- ❑ River flow is controlled by several parties and should be an important consideration; David Murphy explained that further flow regulation is not being considered during this study.
- ❑ The Army Corps of Engineers allegedly had a plan to dredge the river many years ago. Have there been other opportunities over the years, and what was the town's role?
- ❑ Wetlands, wildlife, and threatened/endangered species should be important factors in the study.
- ❑ What is the significance of the 500-foot study area? Will private properties be investigated, or will this study lead to additional regulation of private properties?
- ❑ The area should remain as pristine as possible, with consideration for parking that does not result in more paving.
- ❑ No motorized watercraft should be allowed.
- ❑ The flashboards could be an easy solution for restoring depths. Siltation has reportedly occurred due to the removal of the boards.
- ❑ An old dump is located near the upstream end of the study area. Will our study be concerned with leachate from the dump and/or toxic materials in the sediment? Could one of the recommendations be to simply leave the sediment in place if it is contaminated?
- ❑ Pedestrian access is poor from across the streets that surround the pond.
- ❑ Is fish passage a consideration?
- ❑ If dam removal were to occur [note that this is not part of the study], the sediment management is a significant consideration.
- ❑ The area is historic and the mill's appearance is important.
- ❑ Are jet skis allowed? They don't need much depth. Is anything prohibiting them at the present time?
- ❑ Ownership of the former bridge abutments – and the liability associated with them – should be addressed.
- ❑ The former rail lines should be considered.

- ❑ Is the beach upstream of Town Bridge Road part of the study? This area is very crowded, and there isn't any parking there.
- ❑ The master plan should identify short- and long-term issues and recommendations; timing is an important consideration for future projects.
- ❑ The transportation/traffic study of 2006-2007 is available and should be considered. Crosswalk/pedestrian safety is important. The number of users of the trail was vastly underestimated when the trail was planned.
- ❑ Costs of future projects should be considered, such as sediment removal but also annual maintenance costs of other recommended projects and improvements. It may not be possible to rely on municipal or state governments to fund any recommendations.
- ❑ Upstream and downstream considerations are important. For example, there is significant public access upstream.

The Upper Collinsville Mill Pond Master Plan Steering Committee hosted a second public information meeting on October 27, 2011 at 7:00 p.m. at the Canton Library/Community Center. The purpose of the meeting was to present the draft plan. Refer to Appendix D for copies of the announcement in the Canton Patch; the power point presentation and meeting minutes; and a follow-up article printed in the Canton Patch. A mailing to property owners and the two project web pages provided additional notification of the meeting. The meeting was well-attended. Most of the questions and comments were related to sediment removal, water depths, and increased public access:

Questions Related to Potential Sediment Removal

- ❑ Have quantities of sediment been evaluated?
- ❑ Does the sediment have an economic value?
- ❑ When would sediment removal need to be completed again after the initial sediment removal?
- ❑ Where would dewatering take place?

Questions Related to Flashboards

- ❑ If flashboards were installed, could they withstand a flood?
- ❑ What are the costs associated with flashboards?

Concerns Related to Increased Public Access

- ❑ The Redfords from Old River Road were very concerned about increased public access and focusing the public access to the Town Garage site. Specific questions include the following:
 - While the Redfords are pleased of the possibility of opening the site to vehicle traffic from River Road to eliminate vehicle traffic from Old River Road, this leaves the question of whether Old River Road will remain a public road or revert to a private road. Will the road continue to be plowed by the Town of Canton if

the town garage is not located at the end of it? And how will vehicles access the wastewater treatment plant?

- Is there an estimate of how many new visitors will access the impoundment? Will the number of kayaks and canoes be doubled? Tripled? This is important to estimate.
- If a small beach is created, how will the town prevent people from going upstream onto his property?
- The alternate layout with the amphitheatre is a problem, as too much noise will occur. Any layout with buffers and screening is preferable.
- The canoe racks may be a problem and need to be thought out. If present, they could be vandalized. Also, if people leave their canoes, it could open up more parking spaces for vehicles with canoes and kayaks, ultimately allowing a greater number of canoes and kayaks in the impoundment.
- The owners of 109 Torrington Avenue were present and individually provided commentary and concerns related to problems from increased access:
 - When they bought the property, the presence of the wastewater plant and town garage were known and understood. Although they were unsightly and sometimes noisy, the owners accepted the view and noise.
 - Pedestrian trespassing has occurred for many years and continues to be a problem on their property. People should not be walking on their land.
 - The residents stated that a proposed bridge across the river is not acceptable, and they were not in favor of a loop trail on the west side, even on cemetery land.
 - The eagle nesting boxes should be removed from the Master Plan.
 - Although they “don’t care what happens across the river,” any increase in trespassing caused by the master plan would be intolerable.
 - The residents are in favor of opportunities to move the Town Garage.
- A resident of River Road inquired about how this master plan got underway. She indicated that the traffic study conducted a few years ago was out-of-date if it was more than a few years old.

Other Comments, Questions, and Concerns

- Mr. Sinish of the Upper Collinsville Mill Pond Master Plan Steering Committee explained that DEEP regulations control the distance motor boats operate from the edge of water, but the town can establish an ordinance to the maximum speeds for watercraft as other towns have done. He proposed that the town pass an ordinance to regulate watercraft speed to headway speeds only (6 mph within 50 feet of shore) to prevent motorized watercraft from using the impoundment.
- The resident who lives beside the Veterans Memorial Park commented that “this conversation is very crucial” and largely supports the master planning effort. She has environmental concerns and does not want any outcome of the plan to adversely affect wetlands, birds, and wildlife.
- Mr. Redford asked about swimming near the wastewater effluent outfall.
- Mr. Redford warned that “we need to be careful with master plans” because they “get put away and then come back out and parts get implemented.”

- Mr. Redford would like to hear more about long-term maintenance costs for some of the recommendations.

6.4 Recreational Observations

As explained in Section 5.4, seasonally varying recreational observations were completed on March 20, April 30, July 7, July 17, and October 15, 2011. Refer to Appendix B for notes taken during these observations. The recreational observations confirmed that recreation in the study area occurs year round although it is influenced by the weather. Walking and jogging were observed during every visit, including the March 20 visit. On October 15, 2011, the canoe store was giving a kayak lesson despite light sun showers. In all, kayak and canoe usage was observed from April through October. Fishing was observed from April through October as well. Swimming was observed in the summer.

6.5 Recreational Users Survey

A survey of recreational users in the study area was conducted using the Survey Monkey web site. The survey was open from May 13, 2011 through July 1, 2011. Both of the project web pages provided links to the survey, and the availability of the survey was discussed at the June 16, 2011 public meeting. Refer to Appendix E for copies of the survey output as well as a summary list of all the written comments provided by respondents.

Standard Questions

Most respondents travel less than five miles to the impoundment, and most drive cars although many bike or walk there. Walking and biking are by far the most common 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.

Additional Comments Section

Some respondents (approximately 10) are 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. If enhancements or changes are recommended, they should not be so severe that usage of the impoundment increases drastically and leads to any abuses of resources.

Approximately half of the written comments provided specific recommendations regarding public access to the impoundment. Some of the recommendations that may be appropriate for Collinsville include:

- Provide pet waste disposal areas
- Maintain/keep up with the existing trash barrels
- Beautify the area around the WPCF (vegetation, vines, screening)
- Extend the bikeway along the water's edge (behind the canoe store)
- Provide better parking on the east side of the impoundment
- Provide more benches, picnic tables near the river
- Hold events by the river, such as seasonal programming
- Town should own some of the access
- Enhance the view of the river from the east shore by cutting vegetation
- Maintain native vegetation
- Provide a town-owned boat launch
- Provide a boat launch near the town garage
- Provide a beach for swimming
- Provide access that is not steep
- Any of the above, but without more paving
- Add signs that depict access points and businesses
- Work out swimming/fishing conflicts
- Improve ways to safely walk or bike to the area

Some ambitious recommendations included:

- Provide pedestrian access along the west side
- Move the town garage and yard
- Improve access to Flaherty's Rock
- Smooth the trails so inline skating is easier
- Build a band shell
- Build a bridge or trail on the old railroad abutments
- Dog park
- Add public restrooms
- Add water fountains
- Make electricity available

Unsolicited responses about motorized boats, dredging, and raising the water surface elevation were tallied because of their perceived importance to people who took the survey and attended the public meeting on June 16, 2011:

Should motorized boats be allowed?

No = 13

Yes = 1

Should the impoundment be dredged?

No = 2

Yes = 7

Should the level of the impoundment be raised?

No = 1

Yes = 8

Because the “dredging” and “raising” options were not presented as an “either/or,” it is not possible to determine if someone’s comment would have changed if either was discounted. In other words, they may not be mutually exclusive. However, the number of people who recommended dredging (7) was roughly the same as the number of people who recommended raising the level (8). It may be appropriate to assume that the 15 respondents are sending a message that increased depth is desired one way or another.

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.”
- “We love the natural resources in C-ville 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.”

This master plan document and the associated master plan graphics strive to meet these objectives.