

## Section 3

# Existing Resources

### 3.1 Introduction

Poor Farm Brook is a 3.6-mile perennial stream with headwaters located in the northern part of Worcester and West Boylston line. Poor Farm Brook flows through the impoundment behind the dam referred to as Poor Farm Pond or City Pond, and into Lake Quinsigamond downstream. Two natural resources in the project area are of significant regional context, namely the downstream Lake Quinsigamond, which Poor Farm Brook discharges into, and the large and productive aquifer located directly north of Lake Quinsigamond. The project area is located within this Aquifer's Protection Overlay District.

Poor Farm Brook and Lake Quinsigamond downstream are on the list of impaired waters, known as the "303d list". MassDEP is required by the Federal Clean Water Act to develop an approach or what could be referred to as a "pollution budget" to restore the health of the impaired waters and meet the Massachusetts Surface Water Quality Standards.

### 3.2 Historical, Cultural and Ecological Resources

#### 3.2.1 Major Watersheds

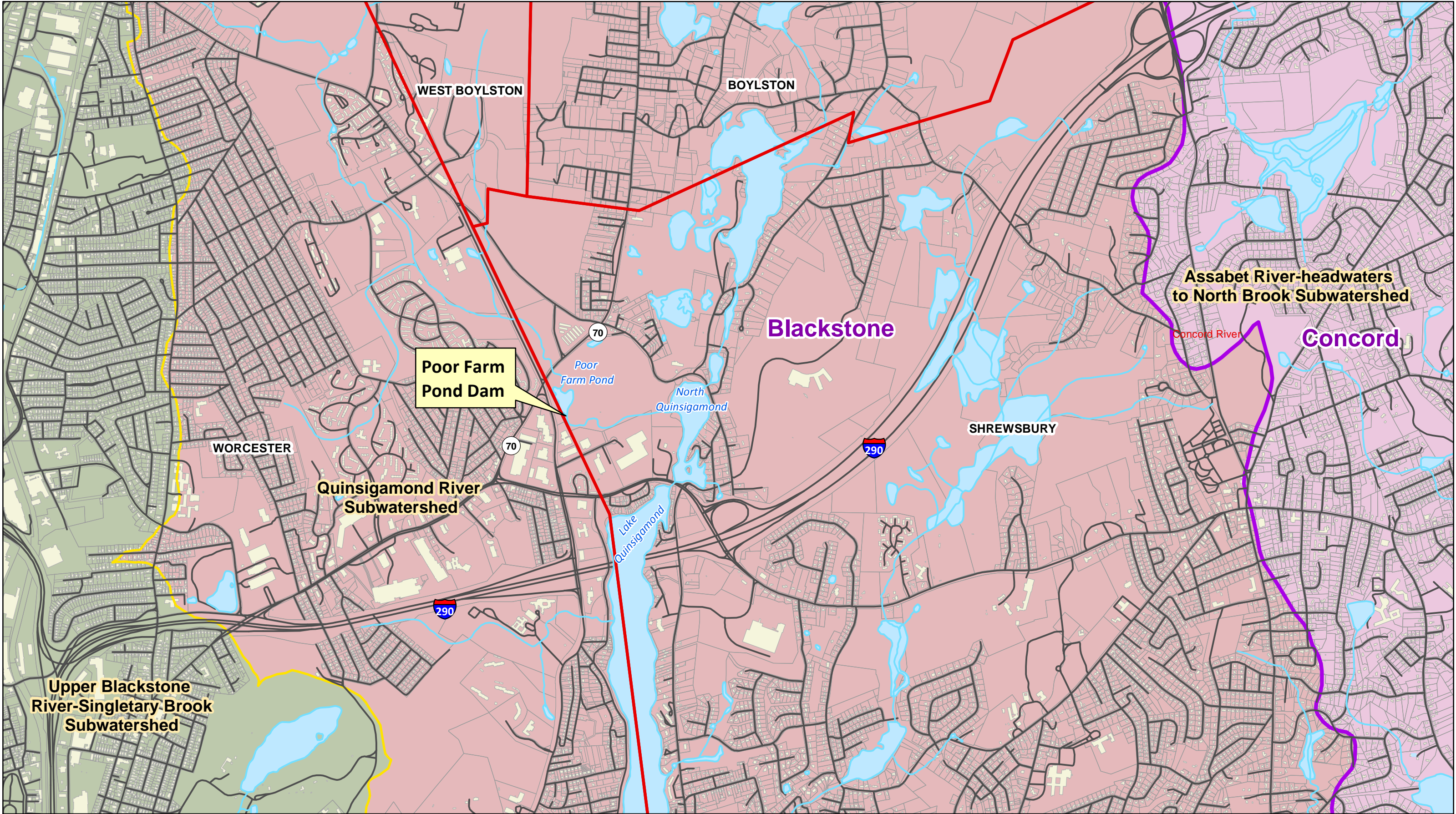
Poor Farm Pond Dam is located on Poor Farm Brook in Shrewsbury and lies within the northern end of the Blackstone Watershed Basin as shown on Figure 3-1. The drainage area for the Poor Farm Pond Dam (PFPD) is approximately 3.7 square miles according to Massachusetts StreamStats. The limits of the delineated PFPD drainage area are shown on Figure 5-1. The drainage area spans the municipal boundary between Shrewsbury and Worcester, and extends from Shrewsbury Street and Hospital Drive to the northeast, and West Boylston Street (Route 12) north of Worcester Country Club to Burncoat Street and Thorndyke Road to the southwest and Lake Quinsigamond to the southeast. The closest control structure within the watershed is the Clinton Street culvert (Route 70). The area upstream adjacent to Poor Farm Brook consists of moderate to steep slopes with limited industrial, commercial, and residential developments along roadways. The Worcester Country Club is located within the upper reaches of the drainage area.

#### 3.2.2 Water Resources

##### 3.2.2.1 Surface Water Quality

Both Lake Quinsigamond and Poor Farm Brook are classified as Class B waters by the Massachusetts Surface Water Quality Standards (314 CMR 4.00). The Massachusetts Department of Environmental Protection (MassDEP) is responsible for monitoring the waters in the state under Section 303(d) of the Clean Water Act (CWA) and required to develop lists of impaired waters and reasons for impairment. Section 303(d) of the CWA requires that states establish priority rankings for impaired waters and develop Total Maximum Daily Load (TMDLs). A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet the Surface Water Quality Standards.





Date: June 2013



**HUC 12 Basins**

- Upper Blackstone River-Singletary Brook
- Quinsigamond River
- Assabet River-headwaters to North Brook

**Basemap**

- Water Bodies
- Buildings
- Parcels
- Town Boundary
- Rivers
- Roads

**Worcester, Massachusetts**  
**Poor Farm Pond Dam Removal Feasibility Study**



0 375 750 1,500 2,250 3,000 Feet

**Figure 3-1**  
**Watersheds**



Poor Farm Brook and Lake Quinsigamond are on the list of impaired waters (better known as the 303(d) list) that do not meet the state surface water quality standards. According to U.S. EPA Guidance, impaired waters requiring one or more TMDLs are classified as Category 5. Waters that exhibit impairment for one or more uses but not requiring TMDLs are classified as Category 4. Category 4 is further divided into three sub-categories 4a, 4b and 4c depending upon the reason that TMDLs are not needed.

Poor Farm Brook (Segment MA51-17) from the headwaters in West Boylston to the inlet of Shirley Street Pond in Shrewsbury through Poor Farm Pond (listed as City Farm Pond) does not meet the Class B designation under the surface water quality standards and is on the 2012 Integrated List as a Category 5 impaired water. A TMDL has not been developed. Impairment causes for the 3.6 mile long brook stretch are listed as low flow alterations, aquatic plants (*Macrophytes*), and sedimentation/siltation.

The downstream Lake Quinsigamond (Segment MA51125) is listed on the 2012 Integrated List as Category 4a exhibiting impairment for one or more uses. The required TMDL(s) has already been completed and approved by the U.S. EPA. Impairment causes for the 471-acre lake are Eurasian Water Milfoil (*Myriophyllum spicatum*), a non-native (invasive) aquatic plant species, excess algal growth (EPA TMDL No. 644), and low dissolved oxygen (EPA TMDL No. 644).

Removal of the PFPD as proposed would increase dissolved oxygen levels downstream to Lake Quinsigamond. The dam removal would not impact other pollutants entering the brook from stormwater runoff. The current impoundment may provide some pollutant removal; however, with sediments in the impoundment reaching the top of the spillway height, the impoundment is probably in equilibrium so pollutant constituents tend to pass directly through to Lake Quinsigamond.

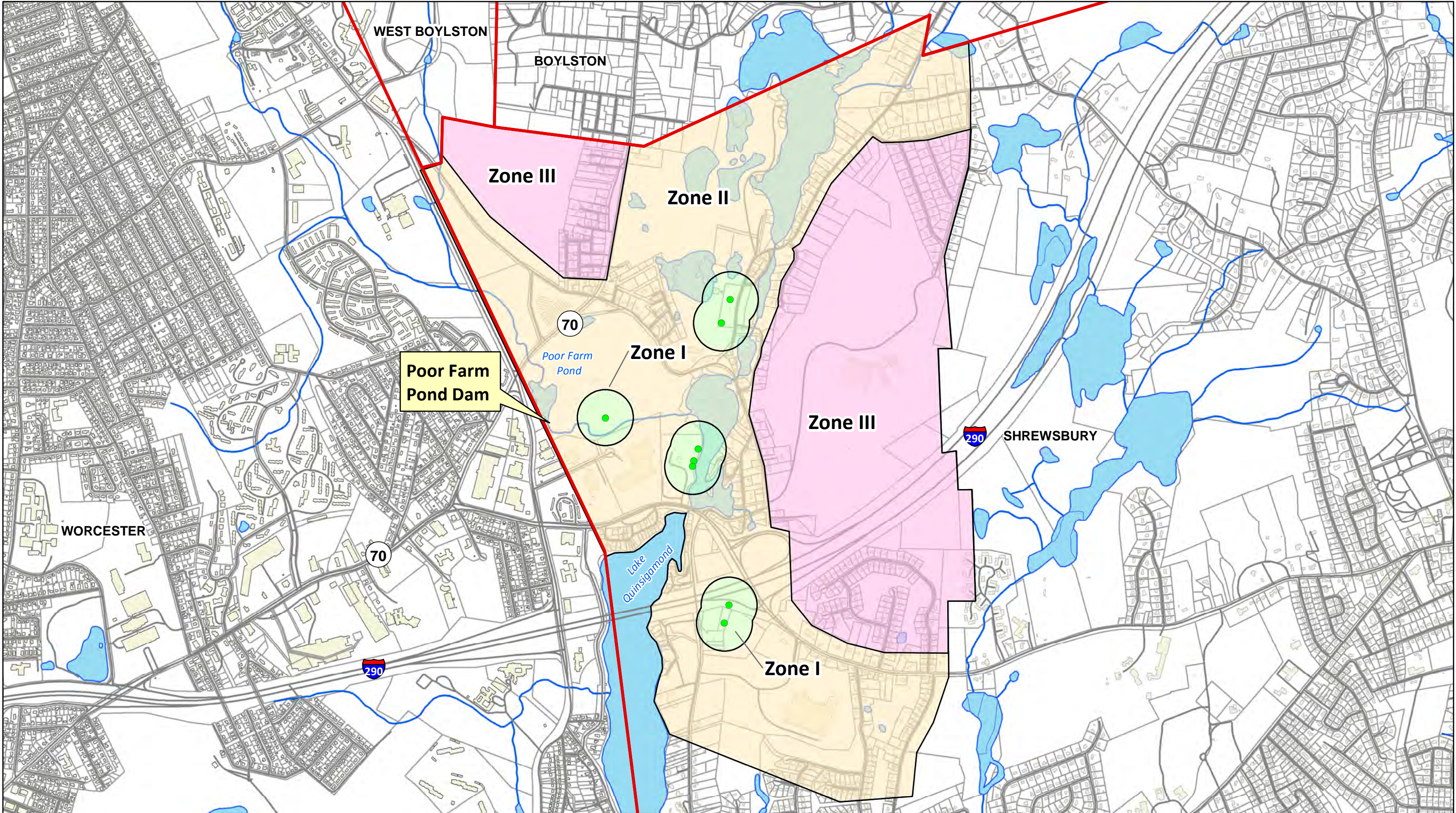
### 3.2.2.2 Groundwater Resources

The project area is located within the Aquifer Overlay Protection District of the only major aquifer within Shrewsbury. This aquifer runs from Boylston to the north into Shrewsbury down to Lake Quinsigamond (see Figure 3-2). The Town's most productive public water supply wells, the Home Farm and Sewall Street wells, are located within this aquifer. Protection of this aquifer is of major importance to the Town of Shrewsbury and the Aquifer Overlay Protection District serves to protect the aquifer and its recharge area from contamination to protect and promote public health and welfare.

The project area is also located within Wellhead Protection Areas (see Figure 3-3). Shrewsbury's public water supply comes entirely from a series of six active gravel packed groundwater supply wells located in the northwest quadrant of Shrewsbury.

Removal of the dam is anticipated to have little effect on the groundwater resources.





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● Well Site

■ Zone I (400ft Radius Around Well Site)

■ Zone II

■ Zone III

Basemap

■ Water Bodies

■ Buildings

■ Parcels

▬ Town Boundary

▬ Rivers

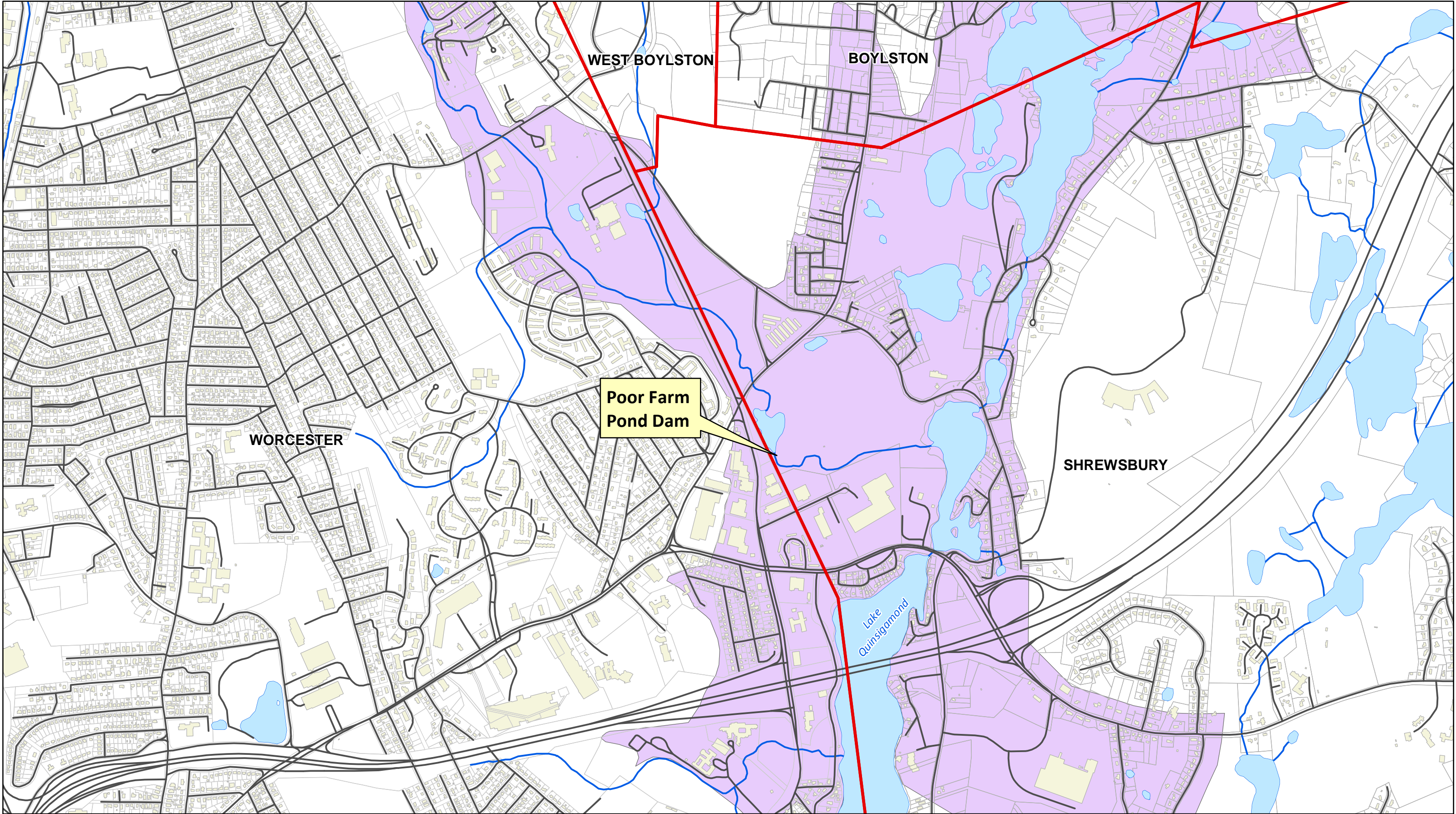
▬ Roads

Worcester, Massachusetts  
Poor Farm Pond Dam Removal Feasibility Study

Figure 3-2  
Aquifer Overlay  
Protection District

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Date: June 2013

**Legend**

Wellhead Protection Areas

**Basemap**

Water Bodies

Buildings

Parcels

Town Boundary

Rivers

Roads

**Worcester, Massachusetts**  
**Poor Farm Pond Dam Removal Feasibility Study**



0 250 500 1,000 1,500 2,000  
Feet

**Figure 3-3**  
**Wellhead Protection**



### 3.2.3 Wetlands

On April 16, 2013 CDM Smith wetland scientists completed a delineation of the wetland resource areas in the area of the PFPD along Poor Farm Brook including the upstream impoundment. Existing field delineated wetland resource boundaries were evaluated for conformance with the Massachusetts Wetlands Protection Act (MGL c.131, s.40)(WPA) and Regulations (310 CMR 10.00, referred to as the Regulations) and the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual (Environmental Laboratory, 1987) and Regional Supplement for the North Central and Northeast Region (January 2012). The wetland boundary was determined by the limit of wetland vegetation, limit of plant community dominated, 50% or more cover, by species adapted to living in wetland conditions by visual inspection, as well as indicators of hydric soils and wetland hydrology. The following wetland resource areas regulated under the Regulations are present on the site: Inland Bank, Land Under Waterbodies/Waterways (LUW), Bordering Vegetated Wetlands (BVW), Bordering Land Subject to Flooding (BLSF), and 200-foot Riverfront Area (RFA).

The wetlands boundaries (flagged) described below are shown on Figure 2-3.

#### **Unnamed Stream**

Regulated wetland resource areas immediately downstream of the dam are Inland Bank, LUW, RFA, and BLSF (see photograph 11 in Appendix A). The eastern bank downstream of the dam was flagged in the field by flags labeled WF TB (Top of Bank) 1 through 8. The western bank was flagged as WF RA-1 through WF RA- 14, marking the mean annual high waterline. A Bordering Vegetated Wetland (BVW) flagged in the field by flags WF 3-1 through WF 3-13 is present adjacent to west bank of Poor Farm Brook approximately 165 feet downstream of the dam.

#### **Poor Farm Pond (City Farm Pond)**

Wetland resource areas associated with the upstream impoundment consist of Inland Bank, LUW, BVW, BLSF, and RFA. Wetland flags 2-1 through 2-13 were placed starting approximately 265 feet upstream along the eastern bank of the impoundment and demarcate the limits of BVW. This BVW can be characterized as an emergent marsh (PEM 1) dominated by cattails (*Typha latifolia*) and purple loosestrife (*Lythrum salicaria*). Dominant species along the scrub-shrub wetland boundary include northern arrowwood (*Viburnum recognitum*), green ash (*Fraxinus pennsylvanica*), red-osier dogwood (*Cornus alterniflora*) in the shrub layer, and sensitive fern (*Onoclea sensibilis*) and skunk cabbage (*Symplocarpus foetidus*) in the herbaceous layer. Wetland flags 2-14 through 2-23 demarcate the top of Inland Bank. Flag 2-23 was placed on the upstream dam headwall. Vegetation in this area is dominated by speckled alder (*Alnus rugosa*), honeysuckle (*Lonicera* sp.), dogwoods (*Cornus* sp.), and sensitive fern (*Onoclea sensibilis*) and skunk cabbage in the herbaceous layer.

Wetland flags 2-24 through 2-54 demarcate a fringe of BVW approximately 5- to 10-feet in width along the western side of the impoundment. A 24-inch diameter storm drain pipe outlets into the impoundment from east of Plantation Street.

### ***Beneficial Wetland Impacts***

Removal of the PFPD will improve wildlife, fisheries, and pollution prevention interests of the WPA. The dam removal will reduce Land Under Water and potentially reduce upstream Bordering Vegetated Wetland resource areas. However, it is anticipated that Bordering Vegetated Wetlands will readily establish in the area of the upstream impoundment as a result of the change. The regulatory assumption is that the dam removal will have a long-term ecological gain by restoring the upstream stagnant impoundment to a naturally flowing riverine system.

### ***Adverse Wetland Impacts***

The long-term adverse impact from the removal of the PFPD is the loss of Land Under Water habitat, as the upstream impoundment would cease to exist. In addition, there will be a number of short term direct impacts to Land Under Water and Inland Bank during the actual removal of the PFPD and from heavy construction equipment.

Under both the Partial Dam Removal alternative and the Full Dam Removal alternative discussed in Section 7, a flood channel upstream of the dam will be dredged to match the spillway width of 14.5 feet and will continue this natural slope upstream to the existing channel with 2:1 (H:V) side slopes. This flood channel would carry 100 year flood flows through the impounded sediments that have been assumed to be removed at this time (see discussion in Section 5). The adjacent area will be allowed to revegetate by natural succession and it is expected that a riverine system would develop over time adjacent to the new channel.

Additional short-term wetland impacts under Alternative 2, Full Dam Removal, consist of the regrading of the steep western slope downstream of the dam to a 3:1 (H:V) slope shifting the location of the stream about 15 feet to the east.

## **3.2.4 Wildlife Habitat and Fisheries**

### **3.2.4.1 Wildlife Habitat**

The project site is located within an undeveloped 88.65-acre parcel of land owned by the City of Worcester consisting predominantly of forested upland and bordering vegetated wetlands along Poor Farm Brook and the unnamed brook downstream of the dam. The upland area to the east of the dam is frequently used by dirt bikers, with several dirt bike trails intersecting the sandy soils of this area. Downstream of the dam, the unnamed brook flows through series of meadow/wetland complexes before discharging into Lake Quinsigamond. The downstream Lake Quinsigamond provides open water habitat to a number of waterfowl species including ducks, herons, gulls, and loons. Waterfowl, such as ducks, was observed during several visits to the site in the upstream dam impoundment. The area provides year around habitat for typical birds found in developed communities in central Massachusetts including chickadees, finches, starlings, sparrows, cardinals, woodpeckers, ruffed grouse, and red-tailed hawks. The emergent marsh upstream of the impoundment support populations of emergent vegetation including broad-leaf cattail, purple loosestrife, and willows providing habitat for red-winged blackbirds. The woody riparian fringes are populated by silky dogwood, speckled alder, and red maple creating edge habitat and providing a food source for wildlife. The area in general provides habitat for mammals common in suburban settings such as gray squirrels, eastern cottontail rabbits, woodchucks, raccoons, opossums, bats, deer, red foxes, and

shrews. The wetland complexes adjacent to Poor Farm Brook and the unnamed brook provide habitat for a variety of amphibians and reptiles including green frogs, American toads, turtles, and several species of snakes. Numerous garter snakes (*Thamnophis*) were observed during the wetland delineation.

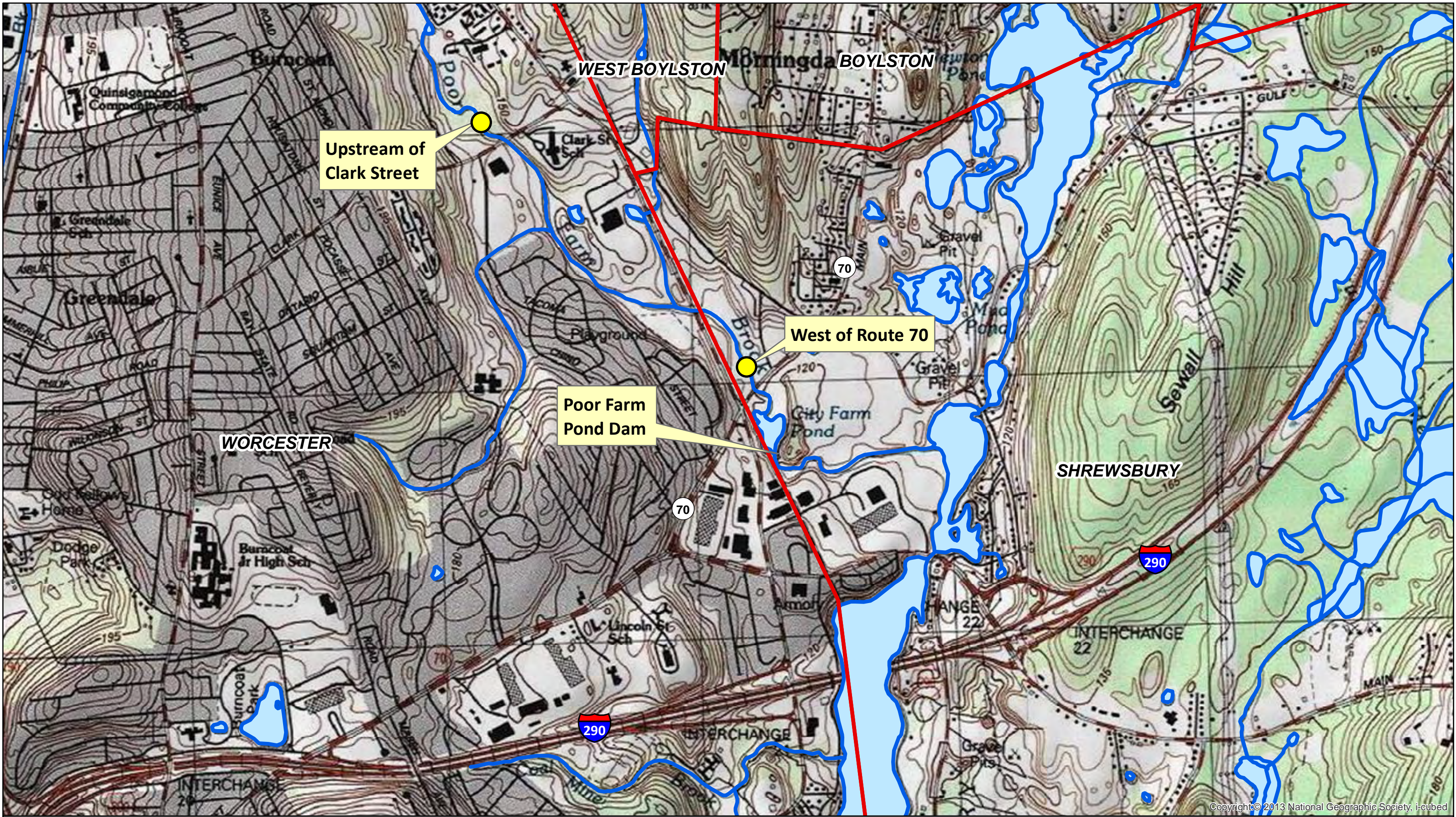
Removal of the dam is anticipated to have an adverse impact to wildlife using the pond area, such as waterfowl (ducks and geese), muskrats and other species. Reduction in geese in the area will contribute to water quality improvements. Removal of the dam is also anticipated to have short-term construction related impacts on wildlife in the area.

Beneficial impacts from the dam removal on wildlife include increase of cover and food sources from the anticipated natural establishment of an emergent marsh/shrub wetland adjacent to the new channel.

### 3.2.4.2 Fisheries Habitat

Over the years, the Department of Fish and Game, Division of Fisheries and Wildlife, performed fish sampling at two stations along Poor Farm Brook upstream of the Poor Farm Pond Dam (Todd Richards, DFW). The furthest upstream station was north of Clark Street, the other was west of Clinton Street (Route 70)(see Figure 3-4). Sampling at these two locations was conducted in 1973, 1984, 1989, 2001, and 2010 (see Table 3-1). The most common fish species in Poor Farm Brook is the bottom feeding white sucker (*Catostomus commersoni*) and the blacknose dace (*Rhinichthys atratulus*). The blacknose dace is a small minnow (2-3 inches) very common in smaller streams with moderate current and in springfed streams. The white sucker is very adaptable and can be found in just about any habitat. It is one of the most common fish in Massachusetts and found in both warm and cold water habitats. The less commonly found tessellated darter (*Etheostoma olmstedii*) is also a bottom-dwelling forage fish, only about 3 inches in length and prefers sandy, muddy, or gravel stream beds. The tessellated darter can be found in both flowing and standing waters. Its presence may indicate high water quality since the species is intolerant of high water temperatures, muddy waters, and other problems associated with impaired streams. The data collected showed that very few cold water fish species is present in the area. The downstream Lake Quinsigamond is stocked twice per year (in March and during a 2-week period in the fall) with rainbow, brown, brook and tiger trout.





Date: June 2013



**Legend**

- ▬ Town Boundary
- ▬ Rivers
- Fish Sampling Locations
- ▬ Water Bodies

**Worcester, Massachusetts**  
**Poor Farm Pond Dam Removal Feasibility Study**



0 250 500 1,000 1,500 2,000 Feet

**Figure 3-4**  
**Fish Sampling Locations**



The dam is a barrier to upstream movement of fish and the removal of the dam is anticipated to restore fish passage in Poor Farm Brook. Fisheries habitat and the prevention of pollution interests of the WPA is expected to improve with the dam removal as the water quality improves by converting the slow moving water of the impoundment to a free flowing stream. The downstream Lake Quinsigamond is stocked with trout twice annually and the removal of the upstream migration barrier will restore Poor Farm Brook as spawning and nursery habitat for cold water fisheries.

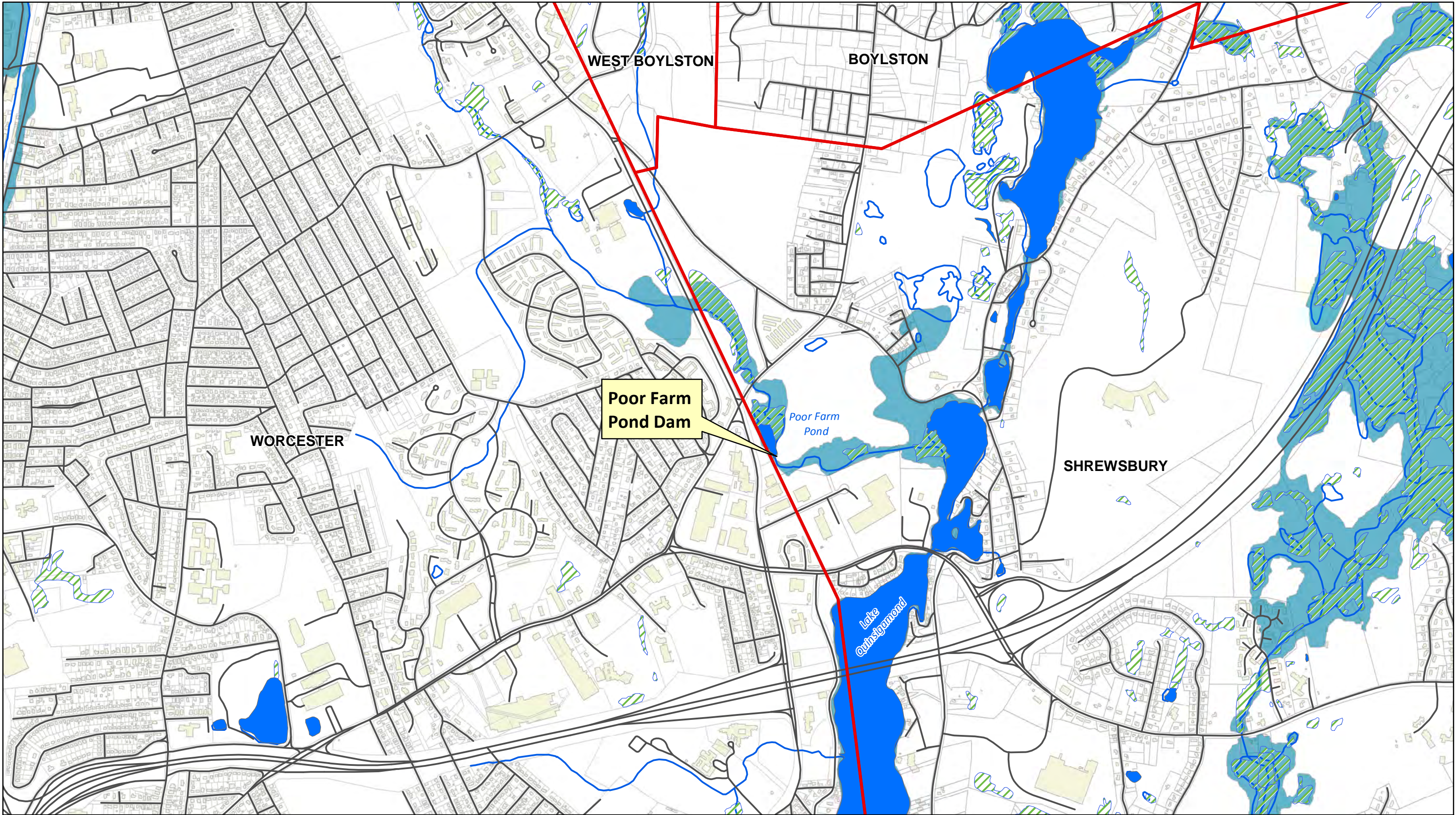
**Table 3-1**  
**Fish Sampling Results for Poor Farm Brook**

<i>Sampling Location</i>	<i>Sample Year</i>	<i>Species</i>	<i>Count</i>
<b>West of Route 70</b>	1973	Brook Trout	3
		Blacknose Dace	230
		Tesselated Darter	2
		White Sucker	102
		Brown Bullhead	1
	1984	Blacknose Dace	129
		Tesselated Darter	10
		White Sucker	70
	2001	Blacknose Dace	106
		Brook Trout	7
		White Sucker	28
<b>Upstream of Clark Street</b>	1989	Brook Trout	1
		Brown Trout	2
		Blacknose Dace	120
		Tesselated Darter	1
		White Sucker	22
	2001	Blacknose Dace	77
		Brook Trout	1
		Tesselated Darter	2
		White Sucker	15

### 3.2.5 Floodplains and FEMA Flood Mapping

FEMA Flood Insurance Rate Map of the area identifies the 100-year floodplain in the project area. The Poor Farm Pond Dam and upstream impoundment is located within the 100-year floodplain (see Figure 3-5). The FEMA Map of the area (Panel ID. 25027C0620E) does not identify a 100-year flood elevation since the project site is outside of the limits of FEMA's detailed study.





Date: June 2013

#### Legend

- 100-yr Flood Zone
- Wetlands
- OPEN WATER

#### Basemap

- Water Bodies
- Buildings
- Parcels
- Town Boundary
- Rivers
- Roads

## Worcester, Massachusetts Poor Farm Pond Dam Removal Feasibility Study



0 250 500 1,000 1,500 2,000  
Feet

## Figure 3-5 Wetland and Floodplains





Removal of the Poor Farm Pond Dam will improve the flood control and storm damage prevention interests of the WPA. The upstream impoundment will over time be replaced by a vegetated wetland that can moderate flow and absorb floodwaters. Dam removal also eliminates the potential risk of a catastrophic dam failure resulting in uncontrolled release of flood waters and potential downstream flooding.

### 3.2.6 Rare and Sensitive Habitats around the Dam

Poor Farm Pond Dam is not located within state-listed Estimated or Priority Habitat mapped by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) based on review of the Natural Heritage Atlas 13th Edition (2008)(see Figure 3-6). The closest potential vernal pool is located downstream within approximately 1,200 feet of the existing dam structure. Review of the BioMap 2 for the Town of Shrewsbury produced in 2012 shows that BioMap 2 Core Habitat 1747 is located approximately 1,900 feet upstream of PFPD and consists of a 186-acre Core Habitat for orange swallow moth, a Species of Conservation Concern. The orange swallow moth inhabits dry, open oak woodlands on rocky uplands. BioMap Core Habitat 1747 coincides with the mapped Priority Habitat 516 (see Figure 3-6).

The dam removal is anticipated to have no effect on rare and sensitive habitats.

### 3.2.7 Opportunities for Habitat Enhancement around the Dam

Poor Farm Pond Dam acts as a barrier to movement of fish and other aquatic species by interrupting the migration of resident species to upstream spawning and nursery habitat. Removal of the existing dam will transform the existing slow moving waterbody to a flowing stream with improved water quality, lower water temperatures, and increased dissolved oxygen.

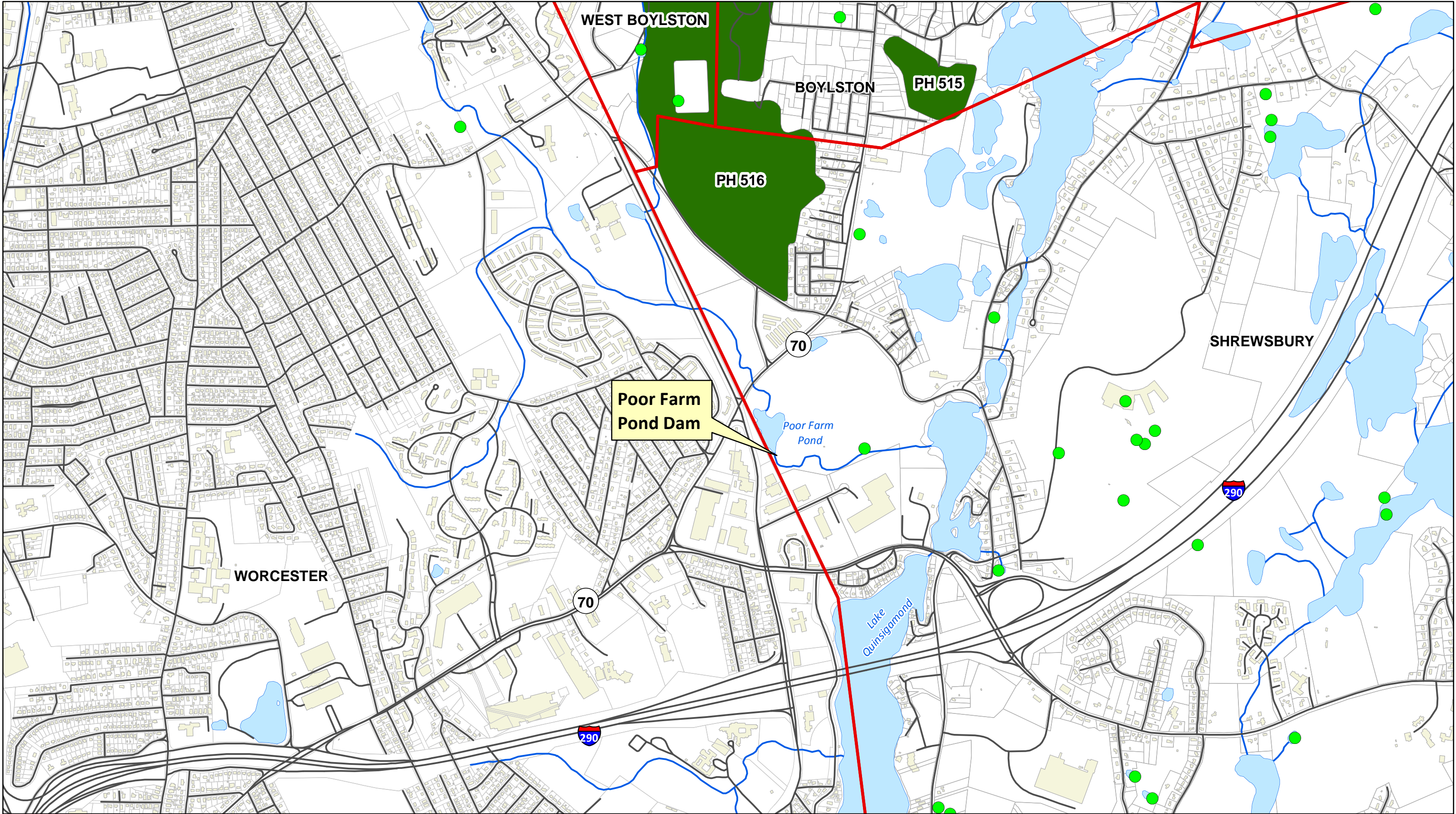
### 3.2.8 Historic and Archeological Resources

A Project Notification Form was submitted to the Massachusetts Historical Commission (MHC) on May 15, 2013. MHC states in their response received on May 30, 2013, that the Poor Farm Pond Dam is not currently recorded in the Inventory of Historic and Archeological Assets of the Commonwealth (see Appendix B). As described in Section 1, MHC states that the Poor Farm/Almshouse was located in this area during the 19th century, and the dam may be an associated historical structure. MHC is requesting that permit applications be submitted to their office for review and comment, as applicable.

The Shrewsbury Historical Society was contacted via telephone; however, they stated that the Worcester Poor Farm was located in the area and to contact the Worcester Historical Museum for detailed information since Shrewsbury has little to no information on this area. Based on the correspondence with the Shrewsbury Historical Society and reviews of the Worcester Historical Museum's archives, the dam lacks any historical significant features or value. Refer to Section 1 for a detailed history of the project site known as the Home Farm until 1952 when it changed name to the Brookside Farm, which was more or less destroyed by a tornado in 1953.

Based on available information it appears that no historic or archeological sites are located in the area of the PFPD. The dam's removal would not have an impact on historic or archeological sites, although the MHC will further review this during permitting as indicated in their letter.





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- Habitat**
- Priority Habitat of Rare Species
  - Potential Vernal Pools

- Basemap**
- Water Bodies
  - Buildings
  - Parcels
  - Town Boundary
  - Rivers
  - Roads

# Worcester, Massachusetts Poor Farm Pond Dam Removal Feasibility Study



0 250 500 1,000 1,500 2,000 Feet

**Figure 3-6**  
**Vernal Pools and Sensitive Habitats**



### 3.2.9 Park Lands, Conservation Areas, and Recreational Resources

The 88.65-acre parcel of land where the Poor Farm Pond Dam is located is a designated publicly owned (City of Worcester) undevelopable conservation area (see Figure 3-7). Recreation uses are limited by the lack of public access to the pond and the impaired water quality of Poor Farm Brook. Current recreation use of the land is limited to passive recreation. The aesthetics of the parcel is compromised by the accumulated sediment and debris within and along the shores of the impoundment.

The adjacent parcel downstream of the dam (parcel ID 19/167000) borders Lake Quinsigamond, north of Lincoln Street, and is also designated as publicly owned conservation land (see Figure 3-7). This 10.5-acre parcel is Shrewsbury Water Department land. This parcel has limited public access and is rated as having very limited public recreation potential.

Two additional parcels also owned by the City of Worcester, one in Shrewsbury north of Clinton Street (Route 70) and one between Poor Farm Pond and Plantation Street are shown on Figure 3-7. The parcel adjacent to Plantation Street is used by the City for access to the PFPD from the east side. Both parcels would be expected to be retained by the City after dam removal for well protection purposes.

Removal of the PFPD would not change any land uses in the project area. PFPD is an ideal candidate for removal since there is no privately owned land immediately upstream or downstream of the dam. The land is undeveloped and owned by the City of Worcester. Current recreation use of the land is limited to passive recreation by trespassers as there is no public access to the property.

### 3.2.10 Surrounding Land Uses

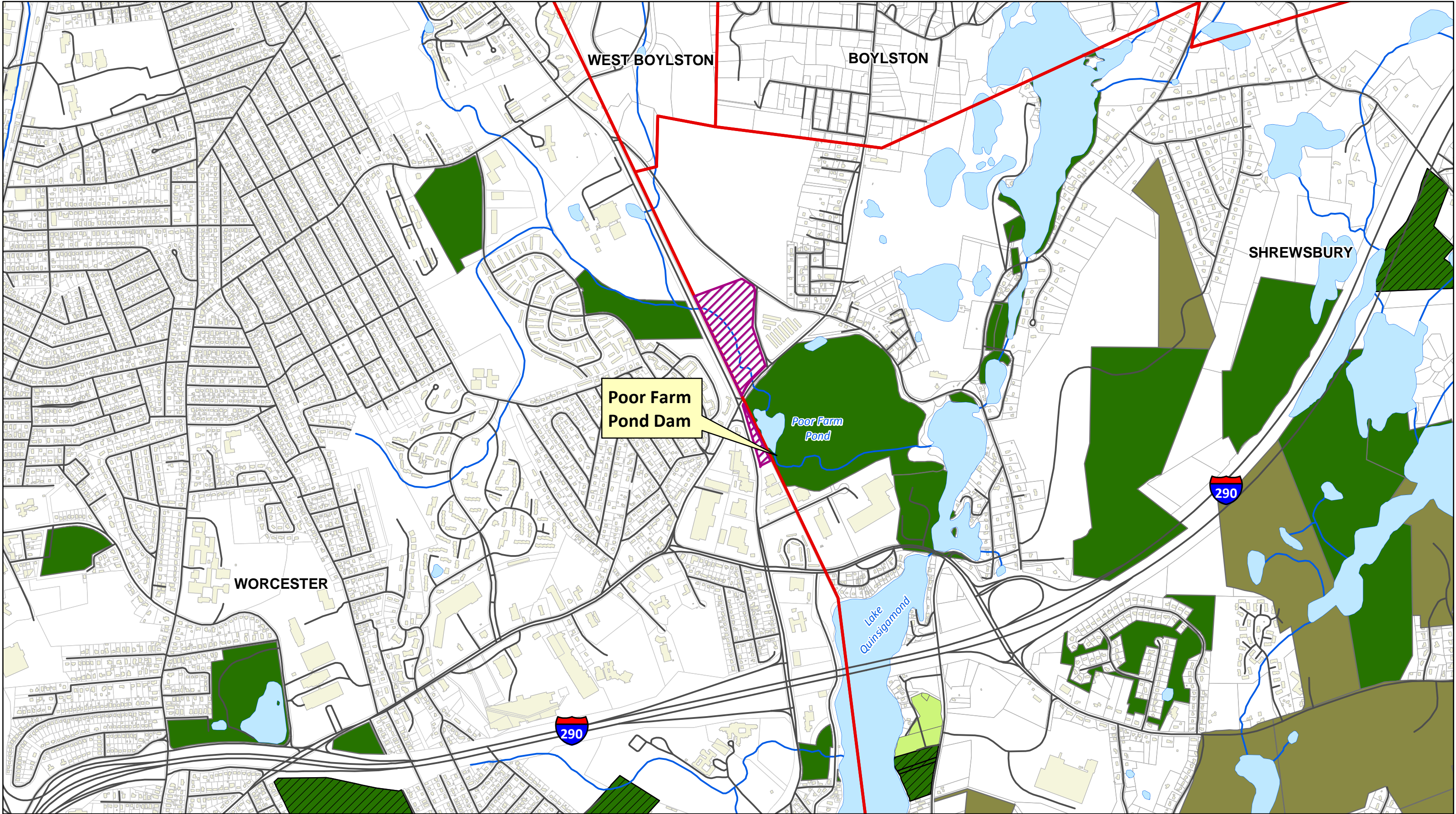
The land surrounding PFPD is primarily undeveloped; there are no residential properties nearby or any with views of the pond. The land adjacent to the impoundment is forested uplands with emergent wetlands located upstream of the impoundment (see Figure 3-8). Land downstream of the dam is also forested, with an open meadow and series of wetlands adjacent to the stream channel. A portion of the parcel downstream of the dam was formerly used as a municipal wellfield.

Plantation Street borders the site to the east, Boylston Street (Worcester)/Clinton Street (Shrewsbury) to the north, Holden Street to the northeast, Lake Quinsigamond to the east, and industrial and commercial buildings and facilities off Bowditch Drive to the south.

The dam under existing conditions is considered as a public pedestrian safety hazard and its removal would improve safety even though public use of the land is restricted.

A public presentation of the proposal to remove the Poor Farm Pond Dam and the information collected for the preparation of this feasibility study was made by CDM Smith Inc. on May 29, 2013 as part of a regularly-scheduled meeting of the Lake Quinsigamond Commission. In addition to the Commission, City of Worcester and Town of Shrewsbury officials attended the meeting as well as various environmental groups and members of the public. Overwhelming support for the removal of the Poor Farm Pond Dam was received at this public meeting.











Date: June 2013

**Conservation Lands**

- |   |            |   |                     |
|---|------------|---|---------------------|
|  | Land Trust |  | State               |
|  | Municipal  |  | Article 97 Lands    |
|  | Private    |  | City Owned Property |

**Basemap**

- |   |              |  |               |
|---|--------------|--|---------------|
|  | Water Bodies |  | Town Boundary |
|  | Buildings    |  | Rivers        |
|  | Parcels      |  | Roads         |

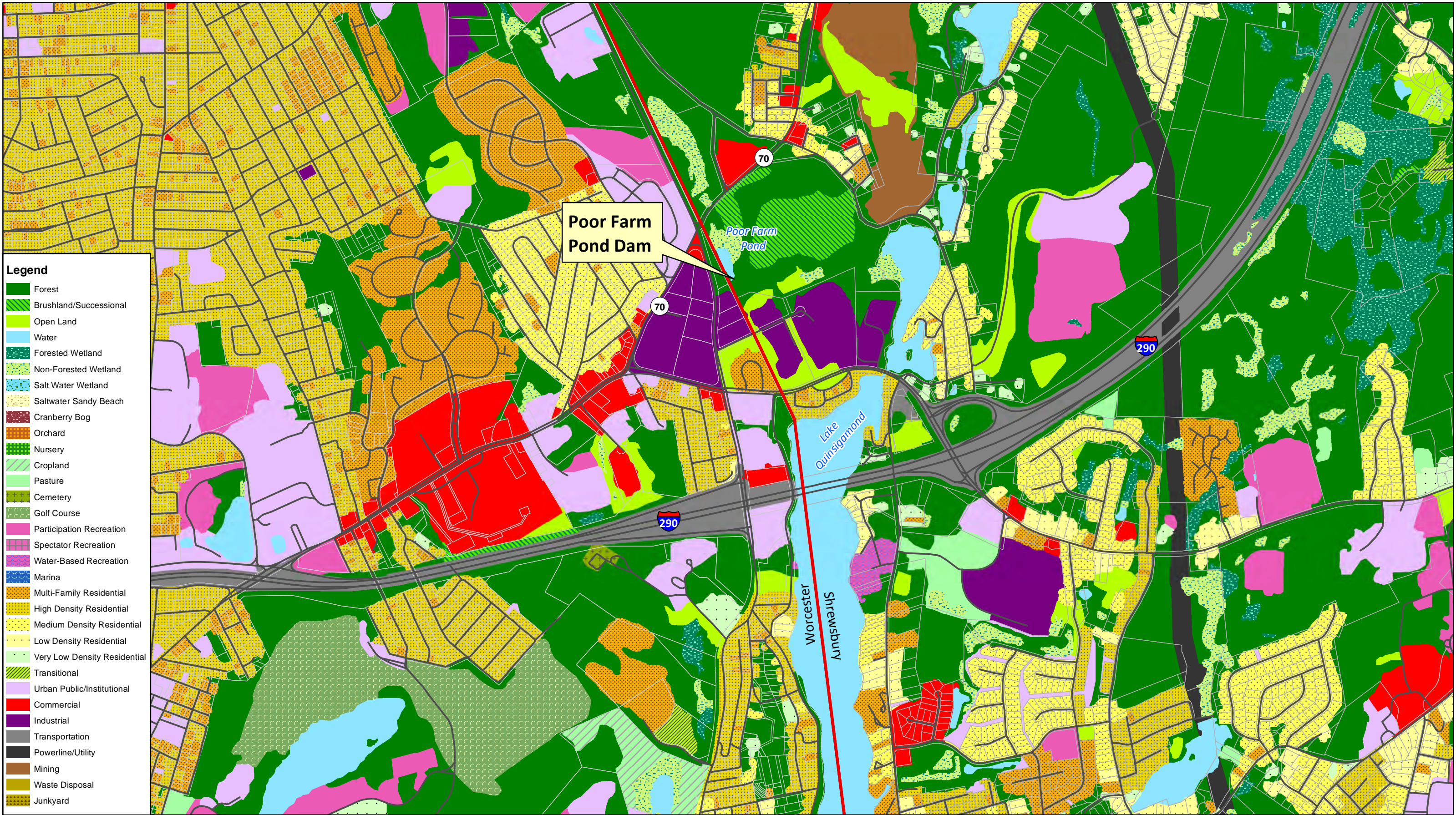
**Worcester, Massachusetts**  
**Poor Farm Pond Dam Removal Feasibility Study**



0 250 500 1,000 1,500 2,000  
Feet

**Figure 3-7**  
**Conservation Lands and**  
**City Owned Property**





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Basemap

- Water Bodies
- Parcels
- Town Boundary
- Rivers
- Roads

CDM  
Smith

# Worcester, Massachusetts Poor Farm Pond Dam Removal Feasibility Study



0 250 500 1,000 1,500 2,000  
Feet

Figure 3-8  
Land Use in 2005



### 3.2.11 Zoning

The parcel (13/07000) is zoned as Rural B District, which is a district intended for low density uses with which one-family homes are compatible. The intent of the Rural Residential District zoning is to insure the preservation of the natural, rural, and scenic qualities of the area and that any development is predominantly residential and agricultural. Approximately 19.8 percent of Shrewsbury is zoned as Rural B District.

## 3.3 Nearby Utilities

Prior to removing any dam or dam structure an accurate assessment of the existing utilities must be completed. Part of that assessment includes a local survey, a records search, and confirmation by Dig Safe® that all utilities in the area are accounted for.

For this feasibility study, utilities information was gathered from the site survey activities, discussions with the Town of Shrewsbury, the City of Worcester and site visits. At this time, it is believed that the utilities at the site are understood and accounted for, but a final confirmation of the existing utilities will be conducted once the design phase of any construction activities are initiated.

### 3.3.1 Water Distribution Piping

Since the land surrounding the Poor Farm Pond Dam is primarily undeveloped there are limited utilities nearby. The only utility identified in the feasibility study that will affect the removal of the dam and associated structures is the water main that is co-located with the bridge immediately above the dam. This 12-inch diameter water main is a water supply main that is connected to the City of Worcester Home Farm water supply well and pump house located 650 feet east of the dam. When the bridge and dam structures are removed, this water main will be relocated if required. At this time, it is assumed that the water main will be placed below the stream channel with concrete encasement or another form of armoring to prevent scour or undermining of the pipe.

### 3.3.2 Other Utilities

No other utilities were identified at the Poor Farm Pond Dam. Other than the water main mentioned above, the nearest known utility is electrical service. Electrical service exists at the adjacent buildings on Bowditch Drive and Plantation Street but no evidence of any electric utility infrastructure was found near the dam. The Home Farm well and pump house mentioned above is served by electrical overhead wires from Holden Street located 1,850 feet east of the dam.