Section 3
Town of Abington - Wastewater Needs

3.1 Background

The Town of Abington is located in Plymouth County approximately 15 miles south of Boston. US Routes 18, 58, 139 and 123 connect the town to the region's major highways, Routes 3, 24 and 128, providing reasonable highway access. Abington is bounded by Brockton to the west; Holbrook and Weymouth to the north; Rockland to the east; and Whitman to the south. From 2010 census data, the population of Abington is 15,985.

Population:	15,985 (2010 census)
Land Area:	9.95 square miles
Location:	Northeast Quadrant of the Upper Taunton River Basin
RPA:	Old Colony Planning Council

Abington lies predominantly within the boundaries of the Taunton River Basin with the northeast and southeast corners of the town in the South Coastal Basin. Abington has two major waterways; Beaver Brook and Shumatuscacant River, both of which flow to the south and feed the Taunton River tributaries. The major impoundments on Beaver Brook are Cushing Pond, Cleveland Pond and Hunt's Pond. Shumatuscacant River impoundments include a small unnamed pond and Island Grove Pond, which has a spring-fed swimming area.

Approximately 90% of the developed parcels in Abington are sewered and wastewater from these sewered parcels flows to the City of Brockton Advanced Wastewater Treatment Facility (WWTF) or to the Rockland Wastewater Treatment Plant (WWTP). The remaining 10% of the developed parcels in Abington have an on-site (septic) system for wastewater management. Approximately 77% of Abington's area and over 90% of developed parcels receive municipal water service from Abington/Rockland Joint Water Works. Abington is located within the Old Colony Planning Council (OCPC) District.

3.2 Previous Studies

3.2.1 Abington Master Plan (July 1999)

A Master Plan was developed by OCPC in 1999 to identify growth patterns and predictions for Abington with anticipated growth pattern changes due to commuter rail service restoration and a sewer expansion agreement.

The Master Plan identified three major areas for economic development in Abington:

- Central Business District in Abington Center.

- Professional Office District on Route 18.
- North Abington revitalization.

Since completion of the Master Plan, development has occurred in many of these areas.

3.2.2 Abington Community Development Plan (April 2004)

The Community Development Plan built on information provided in the town's 1999 Master Plan to ultimately determine the overall suitability of the town's remaining vacant land for various uses. This planning effort resulted in recommendations for resource protection, open space actions, housing actions and economic development. Sewer capacity limitations were considered in the Plan and identified as a possible constraint on economic development.

3.2.3 Abington Open Space and Recreation Plan Update 2006

Prior to 2006, open space and recreation planning was last completed in Abington in 2000. The 2006 OSRP reviewed and updated information contained in its predecessor study and incorporated appropriate aspects of the Community Development Plan and any implementation actions from the 1999 Master Plan. The document provides a detailed review of specific parcels inventoried as part of the Community Development Plan. The 2006 OSRP concludes with a five year action plan to acquire, improve and maintain open space in Abington.

3.2.4 Water Asset Study

A water asset study (WAS) was conducted for the Town of Abington (jointly with the Town of Rockland) through the Executive Office of Environmental Affairs (EOEA) in 2004. The goals of the study were to identify existing and future water supplies in order to provide planning that would afford protection of public water supplies. Abington and Rockland share a single water supplier and, therefore the two communities were combined for the EOEA review. The Town of Rockland does not lie within the Taunton River basin, so a portion of the information below is not applicable to the Upper Taunton Wastewater Evaluation.

The WAS reported that Abington/Rockland's 5-year average daily demand was 2.75 million gallons per day (MGD), with a peak year average daily demand of 2.84 MGD. Abington/ Rockland's Water Management Act (WMA) permit regulates the annual withdrawal volume at 2.67 MGD. The WAS reported that Abington's buildout water demand alone, based on EOEA growth projections, was 3.59 MGD. An additional buildout demand for Rockland was 2.22 MGD. Combined the projected buildout demand for both towns is 5.81 MGD- a demand far exceeding current capacity.

Mapping conducted in conjunction with the WAS identified potential 'water supply protection areas' (WSPA). Approximately 5% (337 acres) of Abington's land area is a WSPA; 28% of that area (94 acres) is potentially developable based on existing town zoning. The majority of the potentially developable WSPA area is zoned industrial. Approximately 52% of the WSPA was classified as "protected or otherwise constrained" and approximately 20% is currently developed.

3.3 Existing Infrastructure

3.3.1 Current Land Use

The Town of Abington is, in terms of area, approximately one-half developed, as shown in **Figure 1**. The majority of Abington's development is residential, with commercial/industrial development located along Routes 18, 58, 123 and 139. According to information in the Community Development Plan, approximately 60% of the land in Abington was zoned for residential use and the 1999 Master Plan buildout estimate predicted an additional 1,550 additional new single-family homes. An additional eight million square feet of non-residential space was also projected under the zoning in effect as of 2006, when the CDP was conducted.

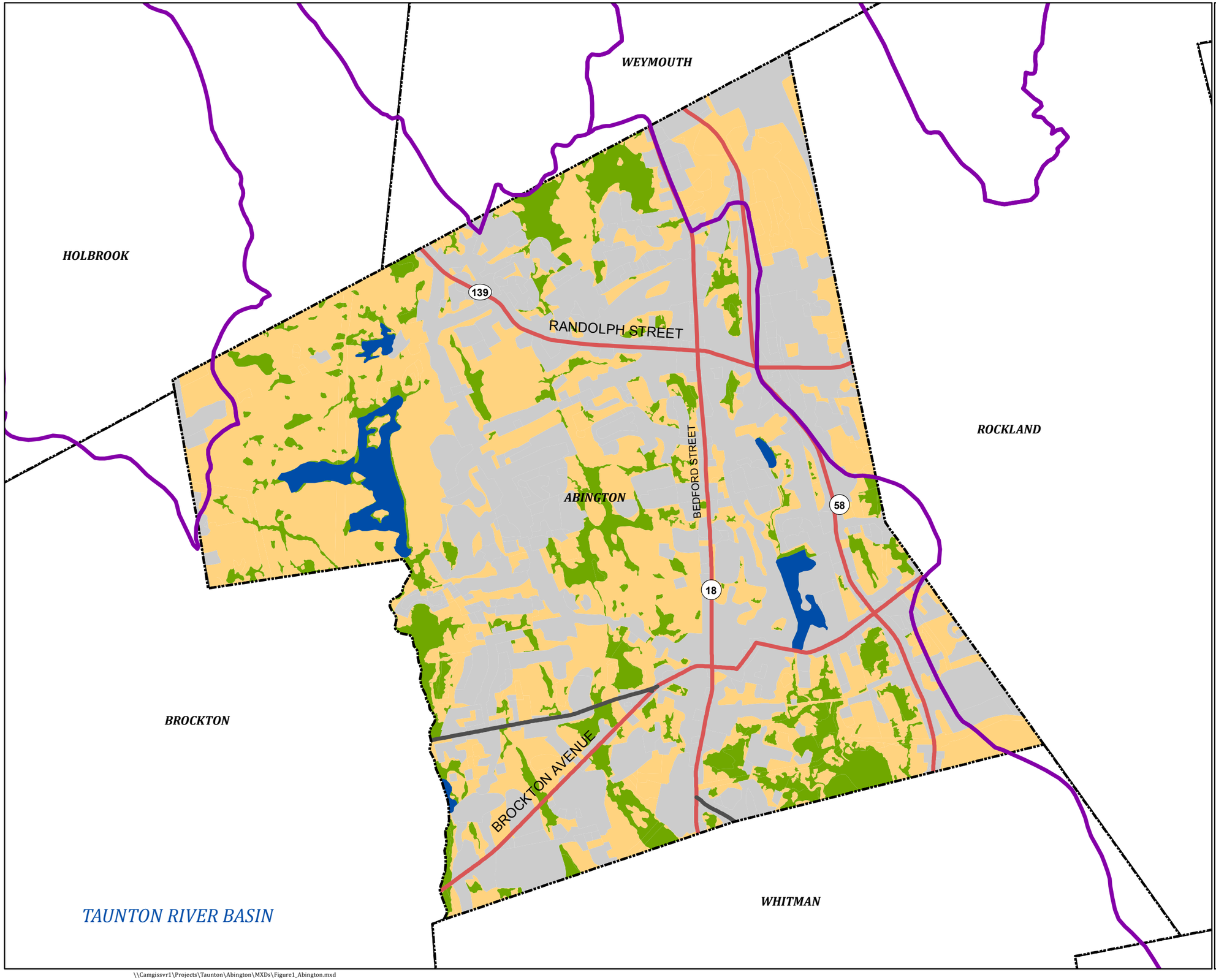
Significant developments highlighted in the 2006 Community Development Plan include Woodlands at Abington apartment complex (192-units) and Abington Woods apartments (180 units). Significant undeveloped area includes Ames Nowell State Park, a 607-acre state park and Pohorecky Farm, a 115-acre site.

3.3.2 Wastewater

The Abington sewer system consists of 90 miles of sewer pipeline (gravity and force main) and twelve (12) sewer pump stations. As stated previously, more than 90% of the developed properties in Abington have access to the sewer system. According to discussions with Abington Sewer Department staff, approximately 5,500 residences and/or businesses are currently connected to the Abington sewer system. **Figure 2** shows the approximate areas that are served by sewer based on information provided by SEA in conjunction with the Taunton River Watershed Study.

Intermunicipal Agreements (IMAs) are in effect for capacities of 110,000 gallons per day (GPD) at the Rockland WWTP and 1.0 MGD at the Brockton WWTF. Current wastewater flows from Abington on an average daily basis are approximately 70,000 GPD to the Rockland WWTP and approximately 950,000 GPD (12-month average from April 2007 to March 2008) to the Brockton WWTF.

Sewer service to the area identified in the Abington/Rockland IMA has been extended to the full jurisdictional area allowed per that agreement and flows from Abington are currently approximately 65% of their allocated capacity. The Abington/Rockland IMA has recently been re-negotiated. The Rockland Board of Sewer Commissioners has imposed a sewer construction/ connection moratorium.



CURRENT LAND USE STATUS

FIGURE 1

TOWN OF ABINGTON, MASSACHUSETTS

LEGEND

- Water
- Developed Areas
- Undeveloped Areas
- UnDevelopable Areas
- Major Basins

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0 0.375 0.75 Miles

Massachusetts Department of Environmental Protection

Old Colony Planning Council

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CURRENT WASTEWATER MANAGEMENT STATUS

FIGURE 2

TOWN OF ABINGTON, MASSACHUSETTS

WEYMOUTH

HOLBROOK

ROCKLAND

ABINGTON

BROCKTON

WHITMAN

139

18

58

RANDOLPH STREET

BEDFORD STREET

BROCKTON AVENUE

TAUNTON RIVER BASIN

LEGEND

- WWTF
- Water
- Sewer Service Areas
- On Site Systems
- Major Basins

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Flows from Abington to Brockton are currently approximately 95% of their allocated capacity. The Abington/Brockton IMA requires that all requests for new sewer connections be sent to Brockton for approval. Due to discharge capacity issues at the Brockton WWTF (related to disposal capacity in the Salisbury Plain River), it is unlikely that any significant sewer connection or extension requests will be approved at the current time.

The Abington Sewer Department maintains a list of requests for a sewer connection. As of March 17, 2008 this list included approximately 35 entries with proposed flows ranging from 210 GPD to 30,000 GPD per entry. Additionally, the Sewer Department estimates that approximately 400 properties have frontage on the existing sewer system, and could connect to the sewer system but are not physically connected to the sewer. Capacity limitations at the Brockton WWTF prevent these properties from utilizing the municipal sewer system.

With the sewer moratorium in effect, all requests for sewer connections in Abington are sent to Brockton or Rockland for approval. Any connection requests that are denied by the City of Brockton or the Town of Rockland may only be connected if the Health Agent deems them to be an emergency based on a non-maintainable system. Applications to increase sewer flow to an existing sewer service are reviewed by the Abington Sewer Commission and require that appropriate inflow/infiltration removal requirements can be met.

3.3.3 Water

Abington's water supply is obtained from the Abington/Rockland Joint Water Works, which derives its supply from four groundwater sources in Abington, one surface water source in Pembroke and one surface water source in Rockland.

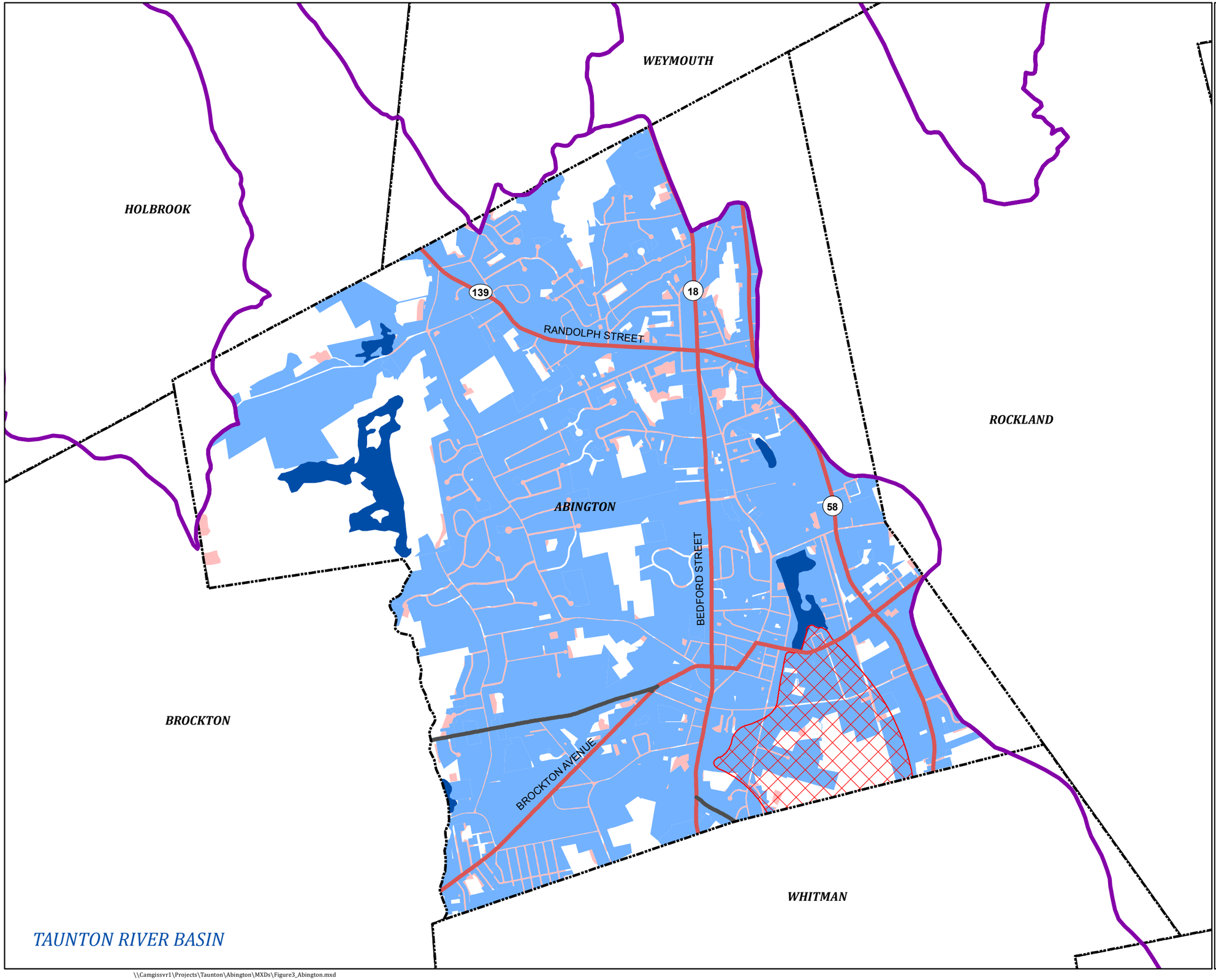
Based on discussions with the town, all except a few of the developed parcels in town receive public water supply. **Figure 3** shows the current water supply status in town geographically.

3.4 Natural Resources

Massachusetts geographic information systems (GIS) mapping was reviewed for natural resources and physical features, as discussed below.

3.4.1 Wetlands and Floodplain

Figure 4 depicts the approximate extent of wetland areas and the 100-year floodplain zones in Abington. The town's extensive wetlands and floodplain form a large portion of the natural drainage system in Abington. The town's natural drainage system performs three major functions; channeling water and stormwater runoff,



CURRENT WATER SUPPLY STATUS

FIGURE 3

TOWN OF ABINGTON, MASSACHUSETTS

LEGEND

- Zone IIs
- Water
- Water Service Areas
- Private Well Areas
- Major Basins
- WWTF

N
W E
S

0 0.375 0.75 Miles

Massachusetts Department of Environmental Protection

Old Colony Planning Council

CDM Smith

Weston & Sampson

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detaining excess water and recharging the groundwater. The Town's *Environmental Inventory and Analysis* estimates that approximately half of the land area in town is within the Floodplain and Wetlands Protection Zoning District.

3.4.2 Rare and Endangered Species

According to the Town's *Environmental Inventory and Analysis* the listed species on file with the *Massachusetts Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program* in Abington include the Hessel's Hairstreak butterfly, the American Bittern (bird) and the Least Bittern (bird). The Massachusetts Natural Heritage Atlas 2000-2001 Edition indicates that Estimated Habitats of Rare Wildlife and Priority Habitats of Rare Species occur in two (2) areas of Abington; the Ames Nowell State Park area and in the southeast quadrant of the town surrounding a small stream along the Shumatuscacant River. These areas are shown on **Figure 4**.

3.4.3 Historic and Archaeological

As described in the 1999 Master Plan, Abington has one local building listed in the Federal list of Historic Places- the North Abington Railroad Depot. The Abington Historic Commission has a list of historic and archaeological resources, which includes over 200 sites.

3.5 Wastewater Management Needs

Wastewater management needs in Abington are limited, based on current information. Wastewater management needs areas identified in previous planning efforts have been served with the centralized sewer system. Increases in wastewater flow are anticipated to come from re-development of existing properties and/or connection of existing properties to the existing sewer, once the sewer moratorium is lifted.

Based on the information provided, Table 3-1 is an estimate of future additional wastewater flows for Abington.

Table 3-1. Abington Future Additional Wastewater Flow Estimation

Component	Number of Properties Served	Estimated Wastewater Flow (GPD) *
Currently Requested Sewer Connections	36	126,750
Potential Future Sewer Connection Requests	400	100,000
Subtotal	**436**	**226,750**

* Flow values based on 'Requested Sewer Connections' listing provided by Abington Sewer Department through March 17, 2008 plus flow for 400 single family residential connections at 250 GPD/connection.

3.6 Interviews with Town Officials

On April 23, 2008, representatives from Weston & Sampson Engineers, Inc., the Massachusetts Department of Environmental Protection and the Old Colony Planning Council attended the Abington Board of Sewer Commissioners meeting to discuss the

NATURAL RESOURCES IN UNSEWERED AREAS

FIGURE 4

TOWN OF ABINGTON, MASSACHUSETTS

WEYMOUTH

HOLBROOK

ROCKLAND

ABINGTON

BROCKTON

WHITMAN

139

18

58

RANDOLPH STREET

BEDFORD STREET

BROCKTON AVENUE

TAUNTON RIVER BASIN

LEGEND

- Water
- 100 Year Flood Zone
- DEP Wetlands
- NHESP Priority Habitats of Rare Species
- NHESP Estimated Habitats of Rare Species
- Area of Critical Environmental Concern
- Developed Areas with One or More Natural Resources Present
- Undeveloped Areas with One or More Natural Resources Present
- Major Basins

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Upper Taunton River Watershed Regional Wastewater Evaluation Project. Town representatives who participated in the meeting included three members of the Abington Sewer Commission and the Sewer Superintendent.

The main concerns with wastewater management discussed during this meeting included:

- A frustration with the cost of transporting sewer flow through the City of Brockton and a lack of input regarding what is happening at the Brockton WWTF. The Town of Abington has shown an interest in creating a new interceptor through Whitman to avoid Brockton's charge for transporting sewage through their pipeline.

- Lack of available capacity.

- Difficulty in identifying inflow/infiltration sources. The town has an intensive I/I investigation and removal program that has been successful in the past, but significant sources of extraneous flow are becoming more difficult to find.

Based on the discussion, the Commission recalled that limited subsurface investigation was performed by SEA several years ago to possibly identify groundwater recharge sites in Abington. The only area with potentially favorable soil conditions for subsurface wastewater disposal was just east of Route 58 near the Weymouth Air Base. Subsequent discussion with SEA revealed that only a desk top review was completed. SEA confirmed that the only other site that had potential (in addition to the Air Base) had already been developed.

The South Weymouth Naval Air Base re-development project and its wastewater treatment and disposal system were also briefly discussed. Abington had preliminary discussions with the project proponent about purchasing some wastewater treatment plant capacity, but were unsuccessful. According to DEP, the proposed wastewater flow for this re-development project is on the order of 1.5 MGD and the groundwater discharge requires a significant mounded structure to be located on 'Base' property in Abington. This property is located just outside the Upper Taunton basin boundary.

As part of this continuing project a follow-up meeting was held with Abington representatives on February 16, 2011. Representatives from Weston & Sampson Engineers, Inc., the Massachusetts Department of Environmental Protection and the Old Colony Planning Council attended this meeting with two members of the Abington Sewer Commission and the Sewer Superintendent. Progress on the Upper Taunton River Watershed Regional Wastewater Evaluation Project was discussed as well as changes in the community that may be of importance to the regional perspective of this project. Abington's wastewater management situation remains

relatively unchanged since our initial meeting. Topics discussed include the following:

- Costs/fees paid to Brockton for wastewater transport and treatment continue to be a major frustration in this regional relationship.
- Abington Sewer Department continues to identify and remove I/I sources in the community. I/I work has included continued TV inspection, private inflow inspections and installation of inserts under sewer manhole covers to prevent stormwater inflow. Brockton's interceptor, however, continues to surcharge during storm events.
- A new Target store in Abington was recently connected to the Rockland system, which required a slight expansion of the limited sewer 'district' area.
- There is a neighborhood behind Center Avenue in Abington that is currently connected to the Brockton system that could potentially (in the future) be re-directed to the Rockland system, if the limited sewer 'district' area were expanded and flow in the Brockton system was needed for other areas of town. The approximate flow from the neighborhood behind Center Avenue is 35,000 GPD.
- If capacity were not an issue, flow increases within Abington would be anticipated to increase by approximately 130,000 GPD initially and up to 230,000 GPD over the longer term planning period.

3.7 Alternatives Analysis Information

The Town of Abington is predominantly sewered and the overall future wastewater management strategy would be to continue to use the centralized sewer alternative. Effluent disposal from the Brockton WWTF (or Rockland WWTP) of future flow generated in Abington may be a possibility within town boundaries, however, significantly more detailed subsurface investigation and analysis would be necessary. Possible sites that may be reviewed include:

- Ames Nowell State Park/Pohorecky Farm
- Strawberry Valley Golf Course
- Groveland Street Golf Driving Range (former landfill)
- Former sewage beds near the Rockland town line

3.8 Conclusion and Recommendations

Current wastewater needs within the Town of Abington cannot likely be met within the confines of existing capacity allocation at the Brockton WWTF. Continued

reduction of inflow and infiltration in Abington and Brockton will reduce the overall wastewater directed to the Brockton WWTF somewhat. Current and potential future wastewater needs for Abington should be considered as part of the regional evaluation for the Brockton subregion.

The eastern portion of Abington, which transmits wastewater to the Rockland WWTP (out of the Taunton river basin) for treatment and discharge has not been identified as a concern regarding capacity. While a sewer connection moratorium is in effect, according to Abington representatives, no sewer expansion to this tributary area is allowed per the IMA and development/re-development in this area is not likely. Predictions are that unless the Abington/Rockland IMA can be re-negotiated to expand service to a portion of town that is currently tributary to Brockton, Abington is not likely to reach the capacity allocated at the Rockland WWTP.