

# **Notice of Intent Stormwater Management Program for MS4 Discharges**

Prepared For:  
Massachusetts Turnpike Authority  
John T. Driscoll Building  
Weston Engineering  
668 South Avenue  
Weston, MA 02193

July 2003



AH

MAR 04 2004

**Tighe & Bond**  
Consulting Engineers  
Environmental Specialists

M-270  
July 30, 2003

U.S. EPA  
Municipal Assistance Unit (CMU)  
One Congress Street, Suite 1100  
Boston, MA 02114-2023

Re: Notice of Intent for NPDES General Permit  
Massachusetts Turnpike Authority

\*\*\* Sent Certified Mail \*\*\*

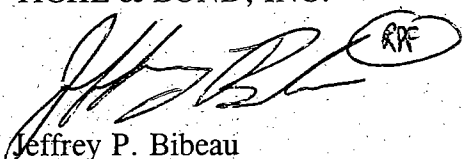
Dear Sir or Madam:

On behalf of our client, the Massachusetts Turnpike Authority, please find enclosed the NPDES Stormwater General Permit Notice of Intent and Stormwater Management Program for MS4 Discharges within several communities located along the Massachusetts Turnpike (Interstate 90).

If you have any questions regarding this information, please contact me at (413) 572-3243. Thank you for your attention in this matter.

Very truly yours,

TIGHE & BOND, INC.



Jeffrey P. Bibeau  
Project Manager

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Enclosure

Copy: MA DEP Division of Watershed Management  
Rick McCullough - Massachusetts Turnpike Authority

JUL 31 2003

MUNICIPAL ASSISTANCE UNIT

MAR042004

AH

Hand-enter Your Transmittal Number

W 040658



Your unique Transmittal Number can be accessed through DEP's web site or by calling the DEP InfoLine as listed on the last page of this document

Massachusetts Department of Environmental Protection Transmittal Form for Permit Application and Payment

Instructions

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Your check should be made payable to the Commonwealth of Massachusetts. Please mail your check along with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three (3) copies of this form will be needed.

Copy 1 (the original) must accompany your permit application. Copy 2 must accompany your fee payment. Copy 3 should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to DEP, P.O. Box 4062, Boston, MA 02211

For DEP Use Only Permit No. Rec'd Date Reviewer

A. Application Information

DEP Permit Code (the 7 or 8 character code from first page of permit application instructions): BRPWM08A Name of Permit Category: NOI for MS4 Type of Project or Activity: stormwater

B. Applicant Information (Firm or Individual)

Name of Firm: Massachusetts Turnpike Authority Or, if party needing this approval is clearly an individual: Individual's Last Name: First Name: MI

Street Address: 668 South Avenue City/Town: Weston State: MA Zip Code: 02193 Telephone Number: (781) 461-5020 ext. Contact: Rick McCullough e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

Name of Facility, Site or Individual: Massachusetts Turnpike Authority DEP Facility Number (if Known) Street Address: 668 South Avenue e-mail address (optional) City/Town: Weston State: MA Zip Code: 02193 Telephone Number: (781) 461-5020 ext.

D. Application Prepared by (if different from Section B)

Name of Individual or Firm: Tighe & Bond Consulting Engineers Address: 53 Southampton Road City/Town: Westfield State: MA Zip Code: 01085 Telephone Number: (413) 572-3243 ext. Contact: Jeffrey P. Bibeau LSP Number (21E only)

E. Permit - Project Coordination

Is this project subject to MEPA review? [ ] yes [x] no If yes, indicate the project's EOE file number (assigned when an Environmental Notification Form is submitted to the MEPA unit) EOE # Is an Environmental Impact Report Required? [ ] yes [x] no Is this application part of a larger project for which two or more DEP permits are being or will be sought? [ ] yes [x] no List any other DEP permits that apply to this project:

Table with 3 columns: Permit Category, Date of Submission (tentative or actual), Transmittal Number (if application already submitted)

F. Amount Due

Special Provisions: [ ] Fee Exempt\* (city, town or municipal housing authority) (state agency if fee is \$100 or less) [ ] Hardship Request [ ] Alternative Schedule Project (according to 310 CMR 4.05 and 4.10)

\*There are no fee exemptions for 21E, regardless of applicant status

Check #: Dollar Amount: \$80.00 Date:

Please make check payable to the Commonwealth of Massachusetts and mail check and one copy of this form to DEP, P.O. Box 4062, Boston, MA 02211

**DEPARTMENT OF ENVIRONMENTAL PROTECTION TRANSMITTAL**

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## **1.1 BACKGROUND**

The storm water pollution problem has two (2) main components: the increased volume and rate of runoff from impervious surfaces and the concentration of pollutants in the runoff. Both components are directly related to development in urban and urbanizing areas. Together, these components cause changes in hydrology and water quality that result in a variety of problems, including habitat modification and loss, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion. Effective management of stormwater runoff offers a multitude of possible benefits, including protection of wetlands and aquatic ecosystems, improved quality of receiving waterbodies, conservation of water resources, protection of public health, and flood control.

In addition to chemical pollutants in storm water, the physical aspects related to urban runoff, such as erosion and scour, can significantly affect a receiving water's fish population and associated habitat (EPA, 2000). Alterations in hydraulic characteristics of streams receiving runoff include higher peak flow rates, increased frequency and duration of bankfull and subbankfull flows, increased occurrences of downstream flooding, and reduced baseflow levels (EPA, 1999). Traditional flood control measures that rely on the detention (storage) of the peak flow (referred to as peak shaving) have been characteristic of many storm water management approaches, have generally not targeted pollutant reduction and in many cases have exacerbated the problems associated with changes in hydrology and hydraulics. EPA recommends an approach that integrates the control of storm water peak flows and the protection of natural channels to sustain the physical and chemical properties of aquatic habitat.

### **1.1.1 Minimum Measures and BMPs**

The Phase II rule describes six (6) minimum control measures which most regulated small MS4s will need to implement. EPA anticipates that these minimum control measures typically will be implemented by applying one or more BMPs appropriate to the source, location, and climate. The practices listed in the menu of BMPs have been found by EPA to be representative of the types of practices that can be applied successfully to achieve the minimum control measures.

EPA recognizes that there is often site-specific, regional, and national variability in the selection of appropriate BMPs, as well as in the design constraints and pollution control effectiveness of practices. The list of practices for each minimum control measure is not all-inclusive and does not preclude MS4s from using other technically sound practices. In all cases, however, the practice or set of practices chosen by the MS4 needs to achieve the minimum measure.

EPA recognizes as well that some MS4s may already be meeting the minimum measures, or that only one or two practices may need to be added to achieve the measures. Existing storm water management practices should be recognized and appropriate credit given to those who have already made progress toward protecting water quality. There is no need to spend additional resources for a practice that is already in existence and operational.

### **1.1.2 BMPs as Systems**

Effective storm water management is often achieved from a management systems approach, as opposed to an approach that focuses on individual practices. That is, the pollutant control achievable from any given management system is viewed as the sum of the parts, taking into account the range of effectiveness associated with each single practice, the costs of each practice, and the resulting overall cost and effectiveness. Some individual practices may not be very effective alone but, in combination with others, may provide a key function in highly effective systems. The Phase II rule encourages such system-building by stating the minimum requirements in more general terms, which allows for the use of appropriate situation-specific sets of practices that will achieve the minimum measures.

### **1.1.3 Prevention vs. Treatment**

Once pollutants are present in a water body, or after a receiving water body's physical structure and habitat have been altered, it is much more difficult and expensive to restore it to an undegraded condition. Therefore, the use of a management system that relies first on preventing degradation of receiving waters is recommended. BMPs under the each of the minimum measures—particularly the obvious category of pollution prevention, as well as outreach, education, and erosion and sediment control—focus on the prevention of pollutants from ever getting into storm water. Similarly, some of the practices under the post-construction runoff control minimum measure address site design issues that can result in pollution prevention.

The menu of BMPs is based on Phase II's six (6) minimum control measures. The six (6) minimum control measures are as follows and are discussed in more detail in Section 5 of this submission.

- Public education and outreach on storm water impacts.
- Public involvement/participation.
- Illicit discharge detection and elimination.
- Construction site storm water runoff control.
- Post-construction storm water management in new development and redevelopment.
- Pollution prevention/good housekeeping for municipal operations.



## 1.2 PROJECT SCOPE

The Massachusetts Turnpike Authority discharges storm water to several MS4's located along the Massachusetts Turnpike (Interstate 90). A review was performed to verify which partially and/or wholly urbanized communities Interstate 90 enters and has discharges to the MS4. The following communities were confirmed to be applicable to the Phase II storm water regulations:

- Russell;
- Westfield;
- West Springfield;
- Chicopee;
- Ludlow;
- Wilbraham;
- Palmer;
- Sturbridge;
- Charlton;
- Oxford;
- Auburn;
- Millbury;
- Grafton;
- Westborough;
- Hopkinton;
- Southborough;
- Framingham;
- Natick;
- Wayland;
- Weston;
- Newton/Boston.

As requested by the Massachusetts Department of Environmental Protection (MADEP), this Notice of Intent and Stormwater Management Program for MS4 discharges is for the entire Massachusetts Turnpike (Interstate 90) and all of the regulated entities operated by the Massachusetts Turnpike Authority.

## SECTION 3 REGULATED ENTITIES

**Tighe&Bond**

The Regulated entities, operated by the Massachusetts Turnpike Authority, sorted by facility type (i.e., interchange facilities, maintenance depots, state police barracks, etc.), are listed in Section 3.1 to 3.8 below. For a detailed overview of the regulated entities, sorted by town/city, see the Appendix items of this submission.

### 3.1 INTERCHANGE FACILITIES

Community	Nomenclature	Urbanized Area	Facility Address
Westfield	Int. #3	Full	20 Southampton Road, Westfield, MA 01085
West Springfield	Int. #4	Full	1950 Riverdale Road, West Springfield, MA 01089
Chicopee	Int. #5	Full	564 Memorial Drive, Chicopee, MA 01020
Springfield	Int. #6	Full	325 Burnette Road, Chicopee, MA 01020
Ludlow	Int. #7	Partial	466 Center Street, Ludlow, MA 01056
Palmer	Int. #8	Partial	146 Thorndike Road, Palmer, MA 01566
Auburn	Int. #10	Full	Building 1, Massachusetts Turnpike, Auburn, MA 01501
Millbury (Rt. 146)	Int. #10A	Full	Greenwood Street, Millbury, MA 01527
Millbury/Worcester	Int. #11	Full	1498 Worcester Road, Millbury, MA 01527
Westborough	Int. #11A	Partial	1 Mass Turnpike, Westborough, MA 01581
Framingham	Int. #12	Full	1650 Worcester Road, Framingham, MA 01701
Natick	Int. #13	Partial	Route 30, Natick, MA 01760
Weston/Newton	Int. #14	Full	60 South Avenue, Weston, MA 02493
Weston/Newton	Int. #15	Full	12 Riverside Road, Weston, MA 02493
Allston	Int. #19	Full	0 Masspike Road, Allston, MA 02134

**3.2 MAINTENANCE DEPOTS**

Community	Nomenclature	Urbanized Area	Facility Address
Chicopee	M-3	Full	240 Old Fuller Road, Chicopee, MA 01020
Auburn	M-5	Full	3 Bancroft Street, Auburn, MA 01501
Weston	M-6	Full	668 South Avenue, Weston, MA 02193

**3.3 STATE POLICE BARRACKS**

Community	Nomenclature	Urbanized Area	Facility Address
Westfield	PS-1	Full	Westfield, MA 01085
Southborough	PS-3	Partial	Unavailable

**3.4 SERVICE AREAS**

Community	Nomenclature	Urbanized Area	Facility Address
Ludlow	3E	Partial	Unavailable
Ludlow	N4WA	Partial	Unavailable
Westborough/Hopkinton	6AW	Partial	Unavailable
Framingham	7W	Full	Unavailable
Natick	8E	Partial	Unavailable
South Boston	M-8	Full	Unavailable
Allston	NA	Full	Unavailable
Administration Building	NA	Full	Unavailable

**3.5 STORM WATER PUMP STATIONS**

Community	Nomenclature	Urbanized Area	Facility Address
South Boston - Storm Water Pump Station #3	NA	Full	1 West Sixth Street, South Boston, MA 02127
South Boston - Storm Water Pump Station #4	NA	Full	D Street, South Boston, MA 02127
East Boston - Storm Water Pump Station #5	NA	Full	Ted Williams Tunnel Toll Plaza, Harborside Drive, East Boston, MA 02127
Boston - Storm Water Pump Stations	NA	Full	Central Artery

**TUNNELS (METROPOLITAN HIGHWAY SYSTEM)**

<b>Community</b>	<b>Nomenclature</b>	<b>Urbanized Area</b>	<b>Facility Address</b>
Toll Administration Office & State Police	NA	Full	145 London Street, East Boston, MA 02128
Interchange 18, 19, 20 (Boston)	NA	Full	Unavailable
East Boston - Callahan Vent Building	NA	Full	89 London Street, East Boston, MA 02128
East Boston - Sumner Vent Building	NA	Full	55 Liverpool Street, East Boston, MA 02128
Boston - Callahan Vent Building	NA	Full	201 North Street, Boston, MA 02109
Boston - Sumner Vent Building	NA	Full	328 North Street, Boston, MA 02109
East Boston - Ted Williams Tunnel Toll Plaza	ERS-1	Full	Harborside Drive, East Boston, MA 02127
Boston - ERS-2 Building	ERS-2	Full	100 Massport Haul Road, South Boston, MA 02127
South Boston - TWT Vent Building #6	NA	Full	2 FID Kennedy Drive, South Boston, MA 02127
South Boston - Operations Control Center (OCC)	NA	Full	50 Massport Haul Road, South Boston, MA 02127
Boston - Central Artery Northbound Tunnel	NA	Full	Not Applicable

**3.6 ENGINEERING OFFICES**

<b>Community</b>	<b>Nomenclature</b>	<b>Urbanized Area</b>	<b>Facility Address</b>
Weston	Div-III	Full	668 South Avenue, Weston, MA 02193

**3.7 MASSACHUSETTS TURNPIKE**

<b>Community</b>	<b>Nomenclature</b>	<b>Urbanized Area</b>	<b>Facility Address</b>
Russell	NA	Partial	Not Applicable
Westfield	NA	Full	Not Applicable
West Springfield	NA	Full	Not Applicable
Chicopee	NA	Full	Not Applicable
Ludlow	NA	Partial	Not Applicable
Wilbraham	NA	Partial	Not Applicable
Palmer	NA	Partial	Not Applicable
Sturbridge	NA	Partial	Not Applicable
Charlton	NA	Partial	Not Applicable
Oxford	NA	Partial	Not Applicable
Auburn	NA	Full	Not Applicable
Millbury	NA	Partial	Not Applicable
Grafton	NA	Partial	Not Applicable
Westborough	NA	Partial	Not Applicable
Hopkinton	NA	Partial	Not Applicable
Southborough	NA	Partial	Not Applicable
Framingham	NA	Full	Not Applicable
Natick	NA	Partial	Not Applicable
Wayland	NA	Partial	Not Applicable
Weston	NA	Full	Not Applicable
Upton	NA	Partial	Not Applicable
Boston	NA	Full	Not Applicable

The waters in each community along the Massachusetts Turnpike (Interstate 90) that are currently known to receive storm water discharges from the MS4 are as follows<sup>1</sup>: For a detailed overview of the receiving streams, outfall locations, and water body impairments, sorted by town/city, see the Appendix items of this submission. As discussed in Section 5.3.1 (BMP 3A) of this submission, outfall locations have not yet been determined. Please see Section 5.3.1 of this submission for an implementation schedule regarding outfall identification.

### **4.1 RUSSELL, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Russell, Massachusetts are as follows:

- Birch Meadow Brook,
- Russell Pond,
- Westfield River,
- Unnamed tributaries of Russell Pond,
- Moose Meadow Brook,
- Unnamed tributaries of the Westfield River, and
- Unnamed isolated ponds, wetlands, and streams.

### **4.2 WESTFIELD, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Westfield, Massachusetts are as follows:

- Powder Mill Brook,
- Cooley Brook,
- Pond Brook,
- Bush Brook,
- Unnamed tributary of Springdale Pond,
- Unnamed tributaries of the Westfield River, and
- Unnamed isolated ponds, wetlands, and streams.

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<sup>1</sup> Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

### **4.3 WEST SPRINGFIELD, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in West Springfield, Massachusetts are as follows:

- Connecticut River,
- Paucatuck Brook,
- Schoolhouse Brook,
- Unnamed tributaries of the Connecticut River, and
- Unnamed isolated ponds, wetlands, and streams.

### **4.4 CHICOPEE, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Chicopee, Massachusetts are as follows:

- Connecticut River,
- Chicopee River,
- Cooley Brook,
- Fuller Brook,
- Unnamed tributaries of the Connecticut River,
- Unnamed tributaries of the Chicopee River, and
- Unnamed isolated ponds, wetlands, and streams.

### **4.5 LUDLOW, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Ludlow, Massachusetts are as follows:

- Wood Pond,
- Minechoag Pond,
- Higher Brook,
- Minechoag Brook,
- Chicopee River,
- Unnamed tributaries of Minechoag Pond,
- Unnamed tributaries of the Chicopee River, and
- Unnamed isolated ponds, wetlands, and streams.

#### **4.9 CHARLTON, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Charlton, Massachusetts are as follows:

- Pikes Pond,
- Little River,
- Hultered Pond,
- Cady Brook,
- Unnamed tributaries of Pikes Pond, and
- Unnamed isolated ponds, wetlands, and streams.

#### **4.10 OXFORD, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Oxford, Massachusetts are as follows:

- The Oxbow,
- Texas Pond, and
- Unnamed isolated ponds, wetlands, and streams.

#### **4.11 AUBURN, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Auburn, Massachusetts are as follows:

- Dark Brook Reservoir,
- Dark Brook,
- Broad Meadow Brook,
- Unnamed tributaries of Pondville Pond,
- Unnamed tributaries of Eddy Pond, and
- Unnamed isolated ponds, wetlands, and streams.

#### **4.12 MILLBURY, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Millbury, Massachusetts are as follows:

- Blackstone River,
- Dorothy Pond,
- Meadow Brook,
- Unnamed tributaries of the Blackstone River,
- Unnamed tributaries of Dorothy Pond, and
- Unnamed isolated ponds, wetlands, and streams.



**4.13 GRAFTON, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Grafton, Massachusetts are as follows:

- Quinsigamond River,
- Hayes Pond,
- Axtell Brook,
- Unnamed tributaries of Lake Ripple,
- Unnamed tributaries of the Quinsigamond River, and
- Unnamed isolated ponds, wetlands, and streams.

**4.14 WESTBOROUGH, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Westborough, Massachusetts are as follows:

- Westboro Reservoir,
- Whitehall Brook,
- Piccadilly Brook, and
- Unnamed isolated ponds, wetlands, and streams.

**4.15 HOPKINTON, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Hopkinton, Massachusetts are as follows:

- Whitehall Brook,
- Sudbury River,
- Unnamed tributaries of the Sudbury River, and
- Unnamed isolated ponds, wetlands, and streams.

**4.16 SOUTHBOROUGH, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Southborough, Massachusetts are as follows:

- Crystal Pond,
- Sudbury River,
- Unnamed tributaries of Crystal Pond, and
- Unnamed isolated ponds, wetlands, and streams.

**4.20 WESTON, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Weston, Massachusetts are as follows:

- Cherry Brook, and
- Unnamed isolated ponds, wetlands, and streams.

**4.21 UPTON, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Upton, Massachusetts are as follows:

- Unnamed isolated ponds, wetlands, and streams.

**4.22 NEWTON/BOSTON, MASSACHUSETTS**

Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Newton/Boston, Massachusetts are as follows:

- Charles River,
- Muddy River,
- Boston Inner Harbor,
- Fort Point Channel,
- Unnamed tributaries of the Charles River, and
- Unnamed isolated ponds, wetlands, and streams.

**5.1 PUBLIC EDUCATION AND OUTREACH****5.1.1 Minimum Control Best Management Practices**

- **1A Educational Displays** - The Massachusetts Turnpike Authority will post one educational display per year in a service area (i.e., rest area). Displays will contain information on stormwater related issues and may be obtained from an applicable governmental or other public agency, purchased from a distributor, or created by local students. The Massachusetts Turnpike Authority will have the responsibility for this BMP, which will be utilized in Years 1 through 5.
- **1B Massachusetts Turnpike Authority Website** - The Massachusetts Turnpike Authority will post stormwater educational information on their website two times per year. The website will include a link to DEP's website and updates annually or as needed. The Massachusetts Turnpike Authority will be responsible for this BMP, which will be implemented in Year 1 and updated in Years 2 through 5.
- **1C Informational Pamphlets** - The Massachusetts Turnpike Authority will obtain and/or develop informational pamphlets or notices. These pamphlets or notices will be provided at all service areas (i.e., rest areas). Pamphlets will contain information on stormwater related issues and may be obtained from an applicable governmental or other public agency, purchased from a distributor, or possibly created by local students. The Massachusetts Turnpike Authority will have responsibility for this BMP, which will be utilized in Years 1, 3, and 5.

**5.2 PUBLIC INVOLVEMENT/PARTICIPATION****5.2.1 Minimum Control Best Management Practices**

- **2A Trash Pick-Up** - Massachusetts Turnpike Authority personnel and other support staff will pick-up trash along the turnpike a regular basis. The Massachusetts Turnpike Authority will have responsibility for this BMP, which will be implemented in Years 1 through 5.
- **2B Storm Drain Stenciling** - The Massachusetts Turnpike Authority employees will stencil catch basins located at service areas. This BMP will alert motorists that catch basins discharge to local water bodies and that non-stormwater discharges should not be discharged to the storm system. The Massachusetts Turnpike Authority will decide the content of the stenciled message and

locations. The Massachusetts Turnpike Authority will have responsibility for this BMP, which will be implemented in Years 1 through 5.

### 5.3 ILLICIT DISCHARGE CONNECTIONS

#### 5.3.1 Minimum Control Best Management Practices

- **3A Mapping Stormwater Outfalls** - A Stormwater Outfall Map will be developed showing all stormwater outfall pipes, catch basins, manholes, etc. Existing information and reports from previous investigations will be compiled in Year 1. Approximately 25% of the outfalls will be field inspected each year for Years 2 through 5. Inspectors will catalogue the size, pipe material and condition of each, the receiving water-body, and visual observation of the discharge and immediate downstream channel. The Massachusetts Turnpike Authority will be responsible for this BMP.
- **3B Non-Stormwater Discharge Program** - The Massachusetts Turnpike Authority intends to adopt a program or other mechanism to reduce in number and/or prohibit non-stormwater discharges into the MS4 system. The Massachusetts Turnpike Authority will evaluate existing program in Year 1, prepare a revised program, if necessary, in Year 2, and propose the new program for adoption in Year 3. Pending adoption, the program will be enforced in Years 3 through 5. The Massachusetts Turnpike Authority will have responsibility for this BMP.
- **3C Develop Illicit Discharge Plan** - The Massachusetts Turnpike Authority will develop an Illicit Discharge Plan to include procedures for identifying, locating, removing illicit discharges as well as documenting actions and evaluating impacts. The Massachusetts Turnpike Authority will evaluate existing procedures in Year 2. The Massachusetts Turnpike Authority will prepare a draft plan and propose the plan for adoption in Year 3. Pending adoption, the plan will be implemented in Years 3 through 5. The Massachusetts Turnpike Authority will be responsible for this BMP.
- **3D Video Inspection** - The Massachusetts Turnpike Authority will contract for the use of a video camera to inspect storm drain pipes, as necessary, to follow up on illicit discharges discovered during activities under BMP #3C. The Massachusetts Turnpike Authority will be responsible for this BMP, which will continue for permit Years 3 through 5.

## 5.4 CONSTRUCTION SITE RUNOFF

### 5.4.1 Minimum Control Best Management Practices

- **4A Construction Runoff Program**- The Massachusetts Turnpike Authority intends to adopt a Construction Runoff Program or other mechanism to require sediment and erosion control at construction projects with over one acre in total disturbance. The Massachusetts Turnpike Authority will evaluate existing programs and mechanisms in Year 1, prepare a draft program in Year 2, and propose the new program for adoption in Year 3, if needed. Pending adoption, the program will be enforced in Years 3 through 5. The Massachusetts Turnpike Authority will have responsibility for this BMP.
- **4B Construction Plan Review** - Under the Construction Runoff Plan (or other mechanism), applicants with projects with disturbance over one acre will be required to submit sediment and erosion control plans for the Massachusetts Turnpike Authority review and approval. Until a new mechanism is adopted (anticipated in Year 3), the Massachusetts Turnpike Authority will continue to review construction plans as they have in the past. Pending adoption, plans will be reviewed per the new program in Years 3 through 5. The Massachusetts Turnpike Authority have responsibility for this BMP.

## 5.5 POST CONSTRUCTION STORMWATER

### 5.5.1 Minimum Control Best Management Practices

- **5A Post Construction Runoff Program** - The Massachusetts Turnpike Authority intends to develop a program to address post construction runoff from projects with over one acre in total disturbance. The Massachusetts Turnpike Authority will evaluate existing programs in Year 1, prepare a draft program in Year 2, and propose the new program for adoption in Year 3, if necessary. Pending adoption, the program will be enforced in Years 3 through 5. The Massachusetts Turnpike Authority have responsibility for this BMP.
- **5B Site Plan Review** - Under the Post Construction Runoff program (or other mechanism), applicants with projects with disturbance over one acre will be required to submit stormwater control plans for Massachusetts Turnpike Authority review and approval. Until a new program is adopted (anticipated in Year 3), the Massachusetts Turnpike Authority will continue to review new development and redevelopment plans in accordance with existing programs. Pending adoption, plans will be reviewed per the new program in Years 3 through 5. The Massachusetts Turnpike Authority have responsibility for this BMP.

- **5C Stormwater System Maintenance Plan** - Under the Post Construction Runoff program (or other mechanism), projects with disturbance over one acre will be required to include a program outlining enhanced procedures for long term operation and maintenance of stormwater facilities. Until a new program is adopted (anticipated in Year 3), the Massachusetts Turnpike Authority will continue to require stormwater facility operation and maintenance in accordance with existing programs. Pending adoption, additional operation and maintenance requirements for stormwater facilities to be constructed as part of new development and redevelopment projects will be enforced in Years 3 through 5. The Massachusetts Turnpike Authority have responsibility for this BMP.

## 5.6 GOOD HOUSEKEEPING

### 5.6.1 Minimum Control Best Management Practices

- **6A Training of Employees** - Through a training program, Massachusetts Turnpike Authority employees will be informed of new good housekeeping policies and procedures. This will occur pending adoption of the training program in Year 1. Massachusetts Turnpike Authority employees will also be informed of the Stormwater Pollution Prevention Plan requirements for the maintenance depots, as applicable (See BMP 6E). Initial training will be given in Year 2. An Annual Refresher in the form of a seminar or memorandum will be given each year for Years 3 through 5. The Massachusetts Turnpike Authority has responsibility for this BMP.
- **6B Catch Basin Cleaning Program** - The Massachusetts Turnpike Authority will develop a program with prioritized areas for catch basins located in urbanized areas in Year 1. The Massachusetts Turnpike Authority will continue to monitor compliance and revise policies as necessary in Years 2 through 5. The Massachusetts Turnpike Authority will have the responsibility for this BMP.
- **6C Street Sweeping** - The Massachusetts Turnpike Authority will sweep all streets located within the urbanized areas once each year. The Massachusetts Turnpike Authority has the responsibility for this BMP, which will be utilized for Years 1 through 5.
- **6D Landscaping and Lawn Care** - The Massachusetts Turnpike Authority will evaluate the use of herbicides in Year 1 and continue to apply with licensed applicators only in Years 2 through 5. The Massachusetts Turnpike Authority has the responsibility for this BMP.

- **6E Stormwater Pollution Prevention Plan/MSGP** - A Stormwater Pollution Prevention Plan (SWPPP) will be implemented for the maintenance depots facility under the EPA Phase II Stormwater Program Multi-Sector General Permit (MSGP). Implementation of this task will not begin until a final determination has been made by the EPA regarding the applicability of permit coverage for maintenance depot type facilities. The Massachusetts Turnpike Authority has the responsibility of this BMP, which will be utilized for Years 1 through 5.

## **5.7 BMP'S FOR MEETING TMDL'S**

### **5.7.1 Minimum Control Best Management Practices**

**7A Total Maximum Daily Load (TMDL) Limit** - According to the Massachusetts Year 2002 Integrated List of Waters, several water bodies along the Massachusetts Turnpike are designated as "Waters requiring a TMDL". The targeted pollutants for these water bodies include the following:

- Priority Organics;
- Organic Enrichment/Low Dissolved Oxygen;
- Pathogens;
- Suspended Solids;
- Noxious Aquatic Plants;
- Turbidity;
- Metals;
- Nutrients;
- Taste, Odor, Color;
- pH;
- Unknown Toxicity; and
- Oil & Grease.
- Siltation;

Sources of these pollutants vary, see Appendix items A-V for a comprehensive list of water bodies and their specific impairments. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The Massachusetts Turnpike Authority will implement these BMPs under the timeframes as previously described in Section 5.1 through 5.6 of this submittal.

## SECTION 6 STORM WATER MANAGEMENT TIME FRAMES

**Tighe&Bond**

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<b>Mimumum Control No. 1 - Public Eduction / Outreach Program</b>			
BMP ID	Description of Best Management Practice (BMP)	Responsible Person	Measurable Goal
1A	Educational Displays	Massachusetts Turnpike Authority	One Display in a Service Area per year, Year 1-5
1B	Massachusetts Turnpike Authority Website	Massachusetts Turnpike Authority	Post two stormwater educational information displays per year, Year 1-5.
1C	Informational Pamphlets	Massachusetts Turnpike Authority	Supplied once per year (fall) in service areas, Year 1-5
<b>Mimumum Control No. 2 - Public Involvement / Participation</b>			
BMP ID	Description of Best Management Practice (BMP)	Responsible Person	Measurable Goal
2A	Trash Pick-Up	Massachusetts Turnpike Authority	MTA employees and support labor for trash pick-up, Year 1-5
2B	Storm drain Stenciling	Massachusetts Turnpike Authority	Massachusetts Turnpike Employees stenciling catch basins located at service areas, Year 1-5.
<b>Mimumum Control No. 3 - Illicit Discharge Detection and Elimination</b>			
BMP ID	Description of Best Management Practice (BMP)	Responsible Person	Measurable Goal
3A	Mapping Stormwater Outfalls	Massachusetts Turnpike Authority	Develop map of stormwater outfalls, Year 1. Field inspect / verify 25%, Year 2-5
3B	Non-Stormwater Discharge Program	Massachusetts Turnpike Authority	Evaluate existing regulations, Year 1. Draft ordinance Year 2. Propose for adoption Year 3. Enforce Year 4-5.
3C	Develop Illicit Discharge Program	Massachusetts Turnpike Authority	Evaluate Year 2. Draft plan and propose for adoption Year 3. Implement Year 3-5
3E	Video Inspection	Massachusetts Turnpike Authority	Inspect storm drain pipes as needed to follow up on #3B detection program, Year 3-5

<b>Mimumum Control No. 4 - Construction Site Runoff Control</b>			
BMP ID	Description of Best Management Practice (BMP)	Responsible Person	Measurable Goal
4A	Construction Site Runoff Program	Massachusetts Turnpike Authority	Evaluate existing regulations Year 1. Draft revisions Year 2. Propose for adoption by Year 3
4B	Construction plan review	Massachusetts Turnpike Authority	Enforcement under existing City regulations, Year 1 and 2. Enforcement under adopted ordinance, Year 3-5.
<b>Mimumum Control No. 5 - Post-Construction Stormwater Mgmt.</b>			
BMP ID	Description of Best Management Practice (BMP)	Responsible Person	Measurable Goal
5A	Post Construction Runoff Program	Massachusetts Turnpike Authority	Evaluate current ordinance Year 1. Draft amendments Year 2. Propose for adoption Year 3.
5B	Site plan review	Massachusetts Turnpike Authority	Enforcement under existing City regulations, Year 1 and 2. Enforcement under adopted ordinance, Year 3-5.
5C	Stormwater System Maintenance Plans	Massachusetts Turnpike Authority	Enforcement under existing City regulations, Year 1 and 2. Enforcement under adopted ordinance, Year 3-5.
<b>Mimumum Control No. 6 - Good Housekeeping</b>			
BMP ID	Description of Best Management Practice (BMP)	Responsible Person	Measurable Goal
6B	Training of all Employees	Massachusetts Turnpike Authority	Initial Good Housekeeping training, Year 1. Annual refresher, Year 2-5
6C	Catch Basin Cleaning Program	Massachusetts Turnpike Authority	Develop program and priority areas, Year 1. Comply, Year 2-5
6D	Street Sweeping and Parking Lot Cleaning	Massachusetts Turnpike Authority	Sweep all streets once per year, Year 1-5.
6E	Pest Control / Landscaping and lawncare	Massachusetts Turnpike Authority	Evaluate use of herbicides, Year 1. Review licensed applicators, Year 1-5.
6F	Stormwater Pollution Prevention Plan / MSGP	Massachusetts Turnpike Authority	Implementation of SWPPP Year 1. Comply Year 2-5.

**APPENDIX A**  
**RUSSELL, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Russell, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Russell, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Russell Portion)	NA	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Russell, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

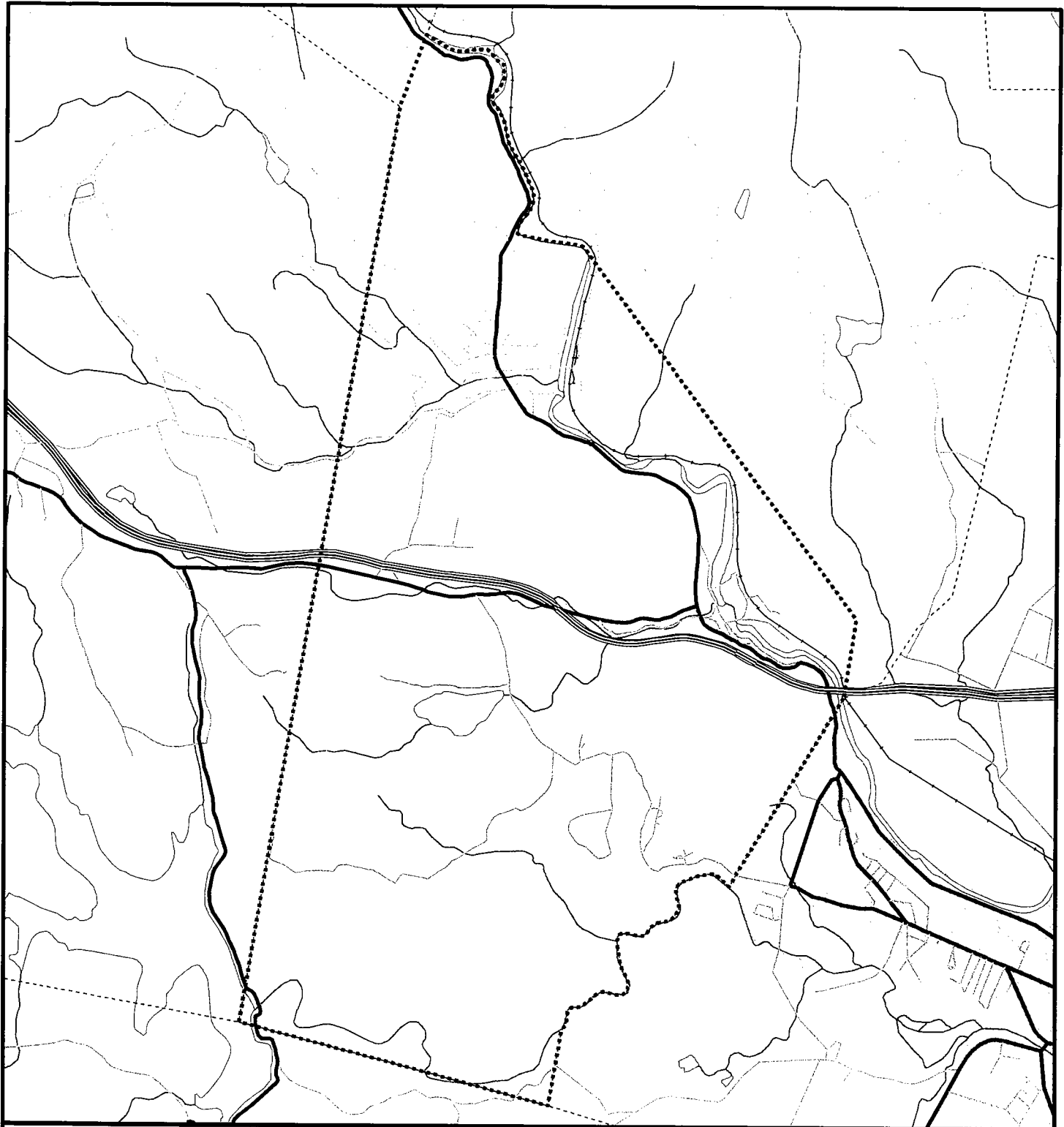
Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Birch Meadow Brook	Not yet determined	No	Not Applicable
Russell Pond	Not yet determined	No	Not Applicable
Westfield River	Not yet determined	No	Not Applicable
Unnamed tributaries of Russell Pond	Not yet determined	No	Not Applicable
Moose Meadow Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of the Westfield River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

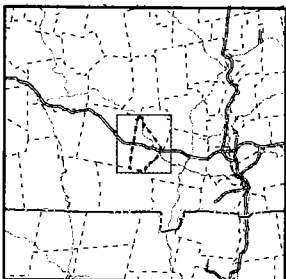
**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, There are no water bodies that receive storm water discharges from the Massachusetts Turnpike Authority, that are subject to a Total Maximum Daily Load (TMDL) Limit in the Town of Russell. See Section 5 of this submittal for the Best Management Practices (BMP's) to be implemented by the Massachusetts

Turnpike Authority. Section 6 of this submittal contains an implementation time frame table for these BMP's.




Area of Focus:

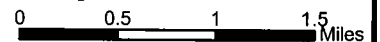


NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Russell, Massachusetts*

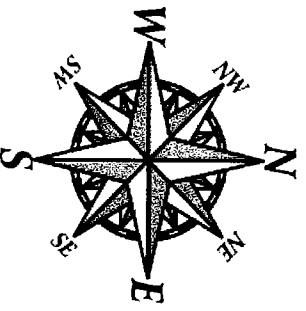
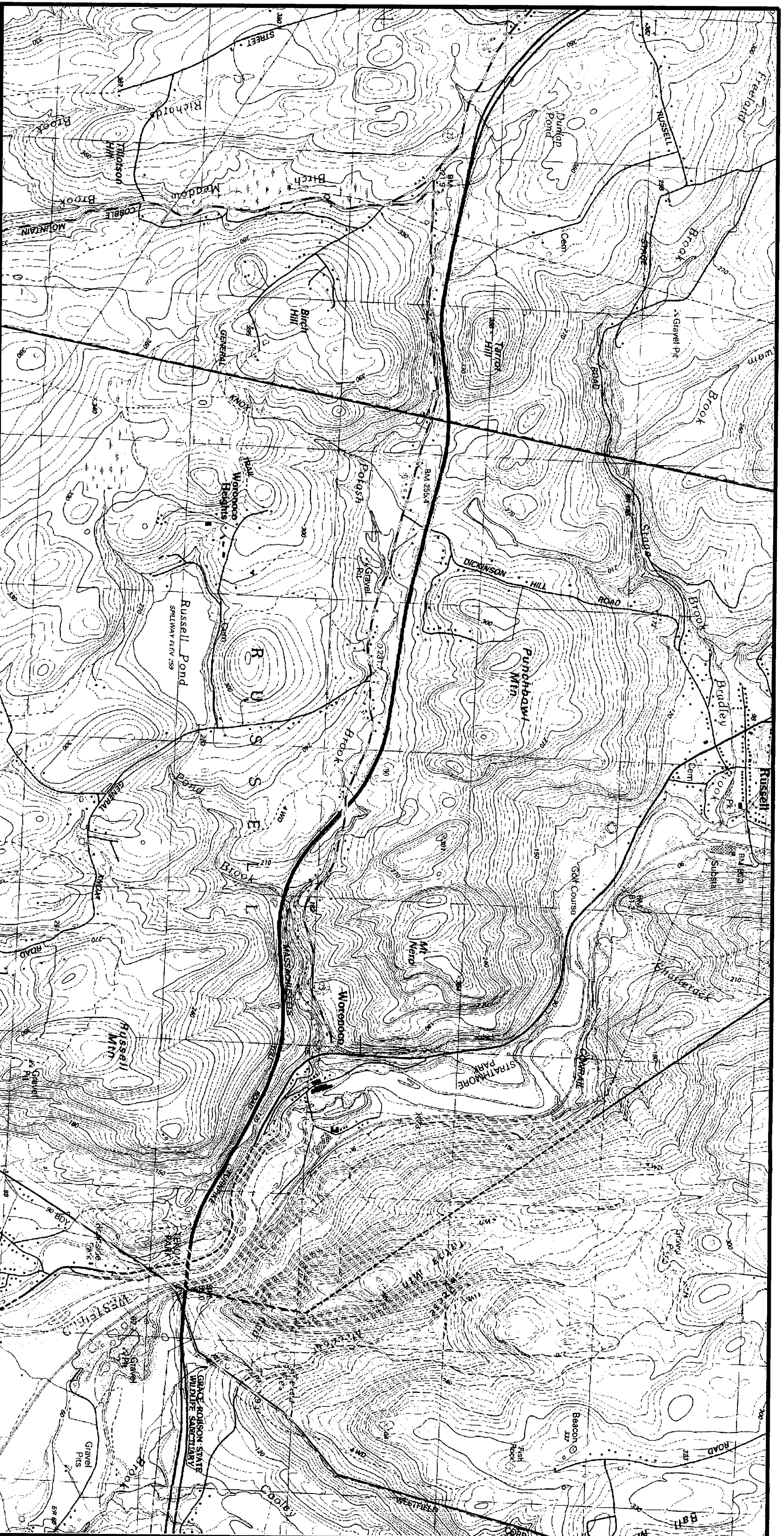
 Russell Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 1,657  
Regulated Population: 67



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 10/4/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\*NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to Significant Habitat, as designated under Massachusetts Endangered Species Act.  
 \*NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 BLANDFORD AND WORONOCO, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
 RUSSELL, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe&Bond**

JULY 2003



**APPENDIX B**

**WESTFIELD, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Westfield, Massachusetts is listed as a wholly urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

### Regulated Entities

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Westfield, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Westfield Portion)	NA	NA
Interchange Facility	Int. #3	20 Southampton Road, Westfield, MA 01085
State Police Barracks	PS-1	Westfield, MA 01085

### Receiving Streams/Outfalls/Impairments

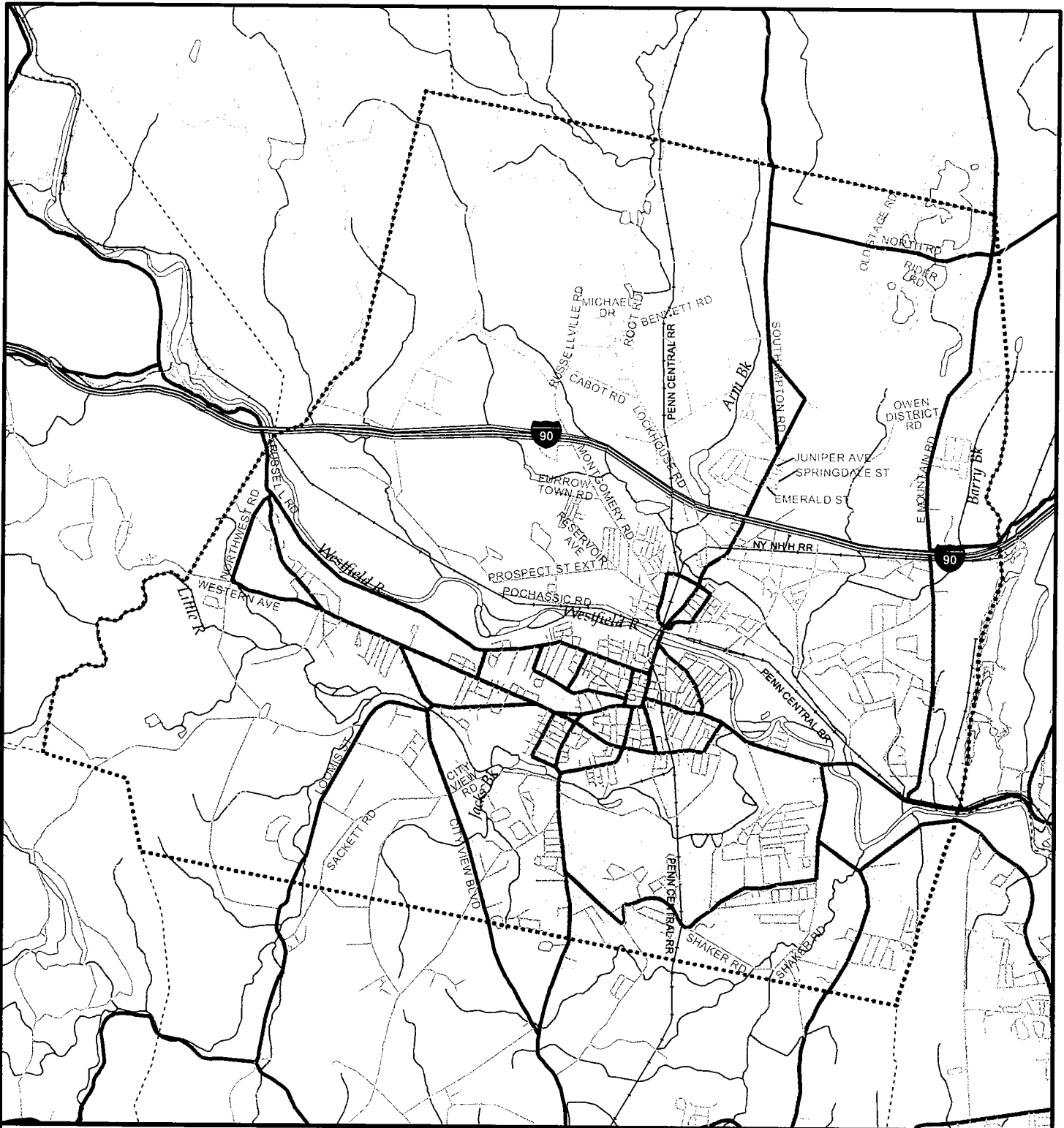
Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Westfield, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Powder Mill Brook	Not yet determined	Yes	Siltation, Pathogens, Suspended Solids, Turbidity
Cooley Brook	Not yet determined	No	Not Applicable
Pond Brook	Not yet determined	No	Not Applicable
Bush Brook	Not yet determined	No	Not Applicable
Unnamed tributary of Springdale Pond	Not yet determined	No	Not Applicable
Unnamed tributaries of the Westfield River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

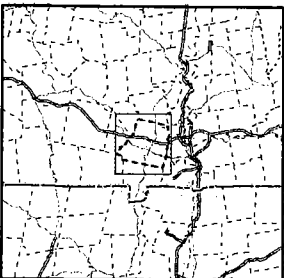
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**



According to the Massachusetts Year 2002 Integrated List of Waters, Powder Mill Brook is designated as “Waters requiring a TMDL”. The targeted pollutants are Siltation, Pathogens, Suspended Solids, and Turbidity. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. Sources of this suspended solids may include but are not limited to: lawn care products, litter, winter road maintenance materials, erosion from construction activities, and illicit sewer discharges. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as described in Section 6 of this submittal.



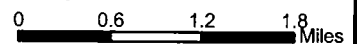
Area of Focus:



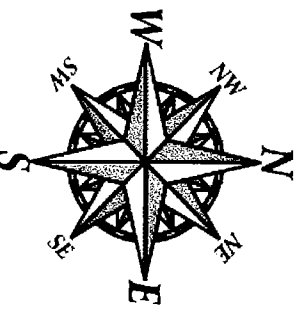
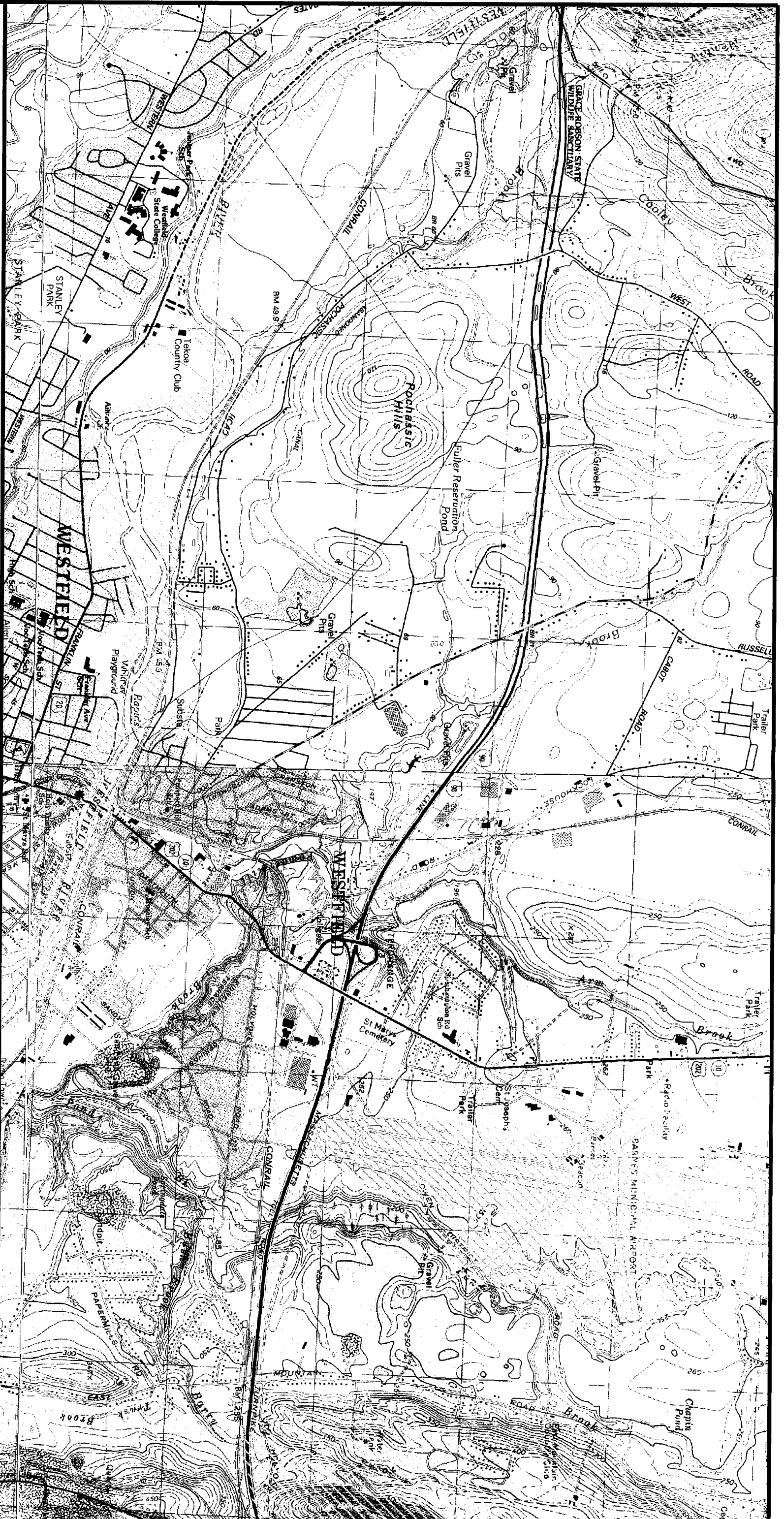
**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Westfield, Massachusetts***

 Westfield Town Boundary  
 Regulated Area (2000 Urbanized Area)

Town Population: 40,072  
Regulated Population: 35,910



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA - New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species, NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife. For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 WORONOCO, MOUNT TOM,  
 SOUTHWICK, WEST SPRINGFIELD, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
 WESTFIELD, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003

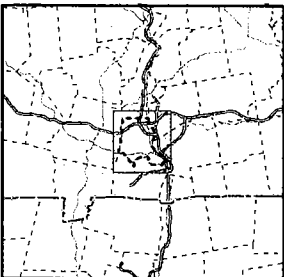
**APPENDIX C**

**WEST SPRINGFIELD, MASSACHUSETTS**


pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. Sources of this suspended solids may include but are not limited to: lawn care products, litter, winter road maintenance materials, erosion from construction activities, and illicit sewer discharges. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:

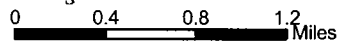


NPDES Phase II Stormwater Program  
 Automatically Designated MS4 Areas  
*West Springfield, Massachusetts*

 West Springfield Town Boundary

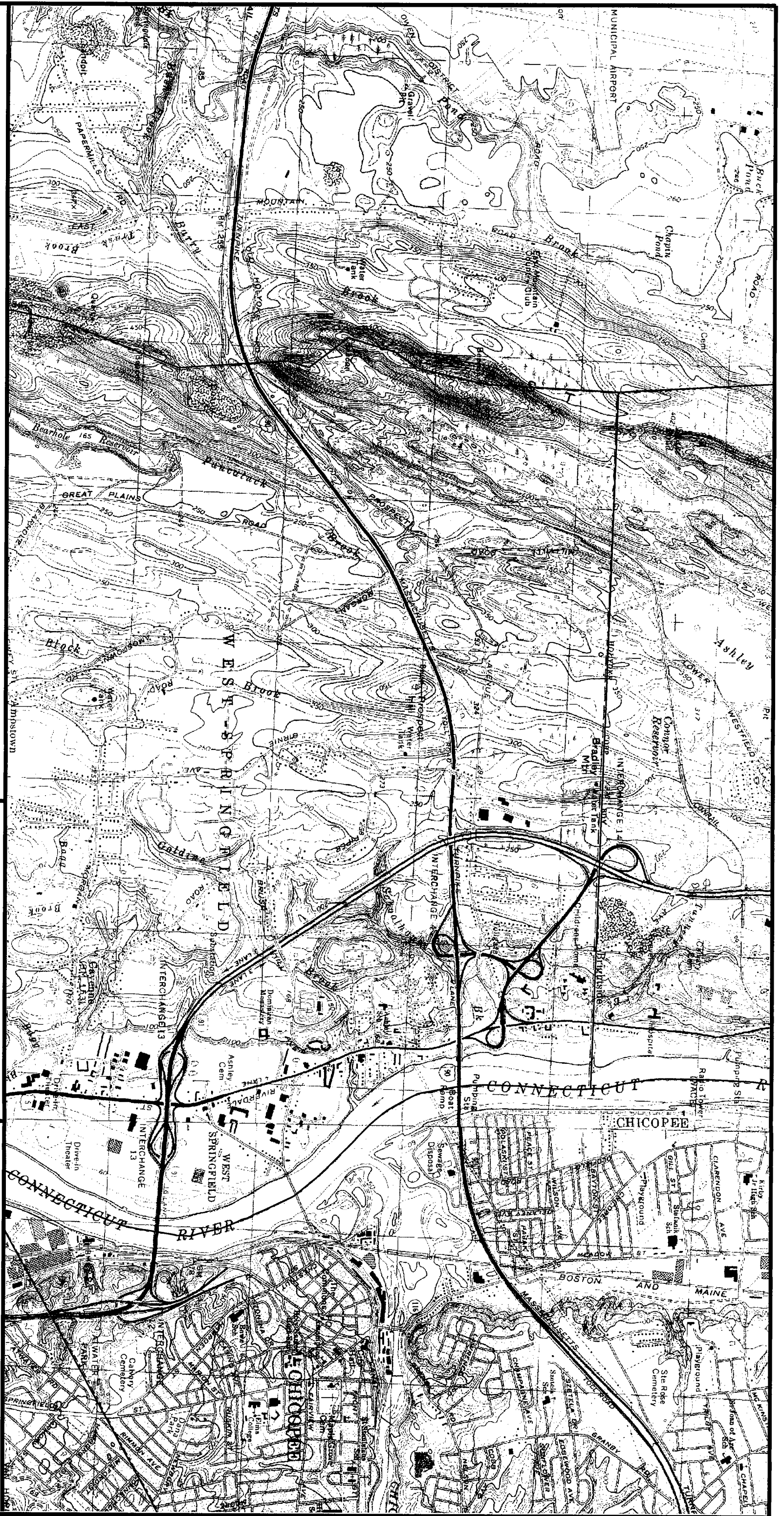
 Regulated Area (2000 Urbanized Area)

Town Population: 27,899  
 Regulated Population: 27,775

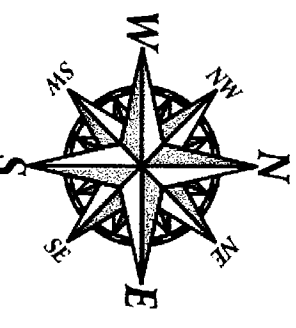


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA - New England GIS Center L:\projects\stormwater\phase2\matowns/new





**LEGEND:**



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 NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 MOUNT TOM, SPRINGFIELD NORTH, MA  
 QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
 WEST SPRINGFIELD, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**FIGURE 1  
 SITE LOCUS**

SCALE: 1:25000

**Tighe & Bond**

JUL Y 2003

**APPENDIX D**  
**CHICOPEE, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Chicopee, Massachusetts is listed as a wholly urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Chicopee, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Chicopee Portion)	NA	NA
Interchange Facility	Int. #5	564 Memorial Drive, Chicopee, MA 01020
Interchange Facility	Int. #6	325 Burnette Road, Chicopee, MA 01020
Maintenance Depot	M-3	240 Old Fuller Road, Chicopee, MA 01020

**Receiving Streams/Outfalls/Impairments**

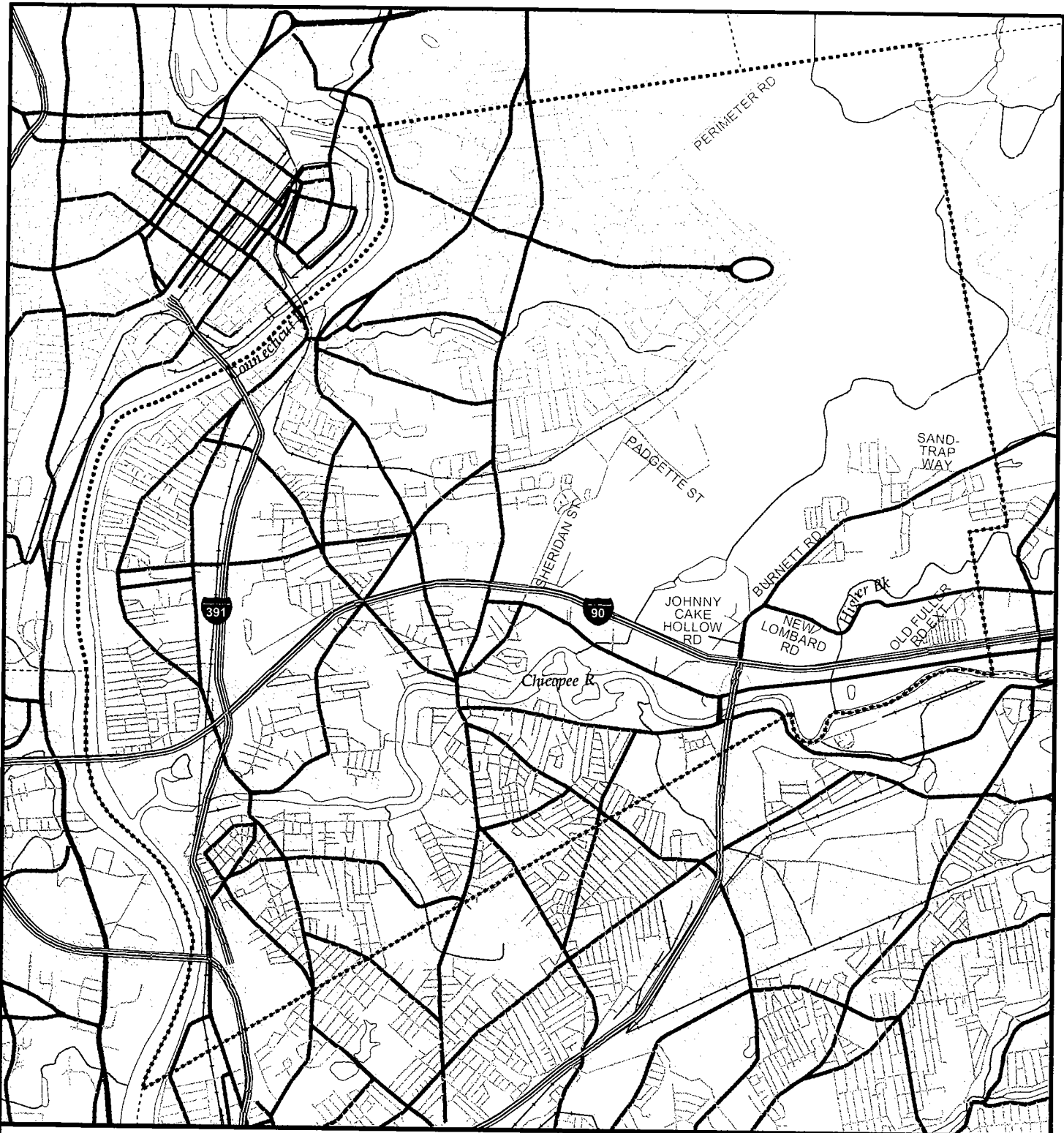
Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Chicopee, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Connecticut River	Not yet determined	Yes	Priority Organics, Pathogens, Suspended Solids
Chicopee River	Not yet determined	Yes	Pathogens
Cooley Brook	Not yet determined	No	Not Applicable
Fuller Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of the Connecticut River	Not yet determined	No	Not Applicable
Unnamed tributaries of the Chicopee River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

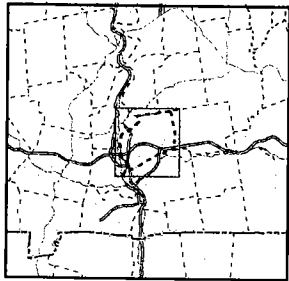
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, Connecticut River is designated as Category 5 “Waters requiring a TMDL”. The targeted pollutants are priority organics, pathogens, and suspended solids. Sources of priority organics may include but are not limited to: road surfaces, inadequate fueling areas or practices, illegal dumping. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. Sources of this suspended solids may include but are not limited to: lawn care products, litter, winter road maintenance materials, erosion from construction activities, and illicit sewer discharges. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.




Area of Focus:

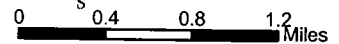


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas**  
*Chicopee, Massachusetts*

 Chicopee Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 54,653  
Regulated Population: 53,508

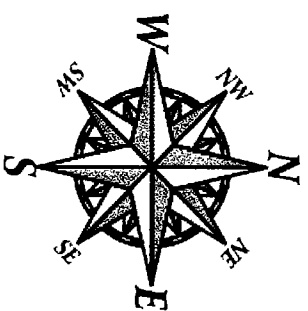


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 9/30/02. US EPA, New England GIS Center L:/projects/stormwater/phase2/matowns/new



**LEGEND:**

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- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



**FIGURE 1**  
SITE LOCUS

BASED ON  
USGS TOPOGRAPHIC MAP FOR  
MOUNT TOM, SPRINGFIELD NORTH, MA  
QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
CHICOPEE, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003

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NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX E**  
**LUDLOW, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Ludlow, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Ludlow, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Ludlow Portion)	NA	NA
Interchange Facility	NA	466 Center Street, Ludlow, MA 01056
Service Area	4W	NA
Service Area	3E	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Ludlow, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Wood Pond	Not yet determined	No	Not Applicable
Minechoag Pond	Not yet determined	No	Not Applicable
Higher Brook	Not yet determined	No	Not Applicable
Minechoag Brook	Not yet determined	No	Not Applicable
Chicopee River	Not yet determined	Yes	Pathogens
Unnamed tributaries of Minechoag Pond	Not yet determined	No	Not Applicable
Unnamed tributaries of the Chicopee River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

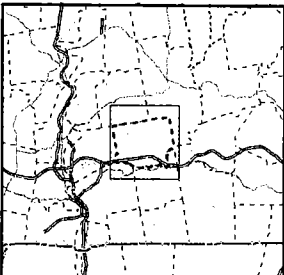


**Best Management Practices**


According to the Massachusetts Year 2002 Integrated List of Waters, Chicopee River is designated as “Waters requiring a TMDL”. The targeted pollutant is pathogens. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:

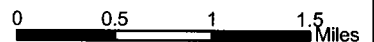


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Ludlow, Massachusetts***

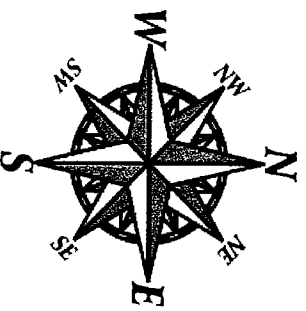
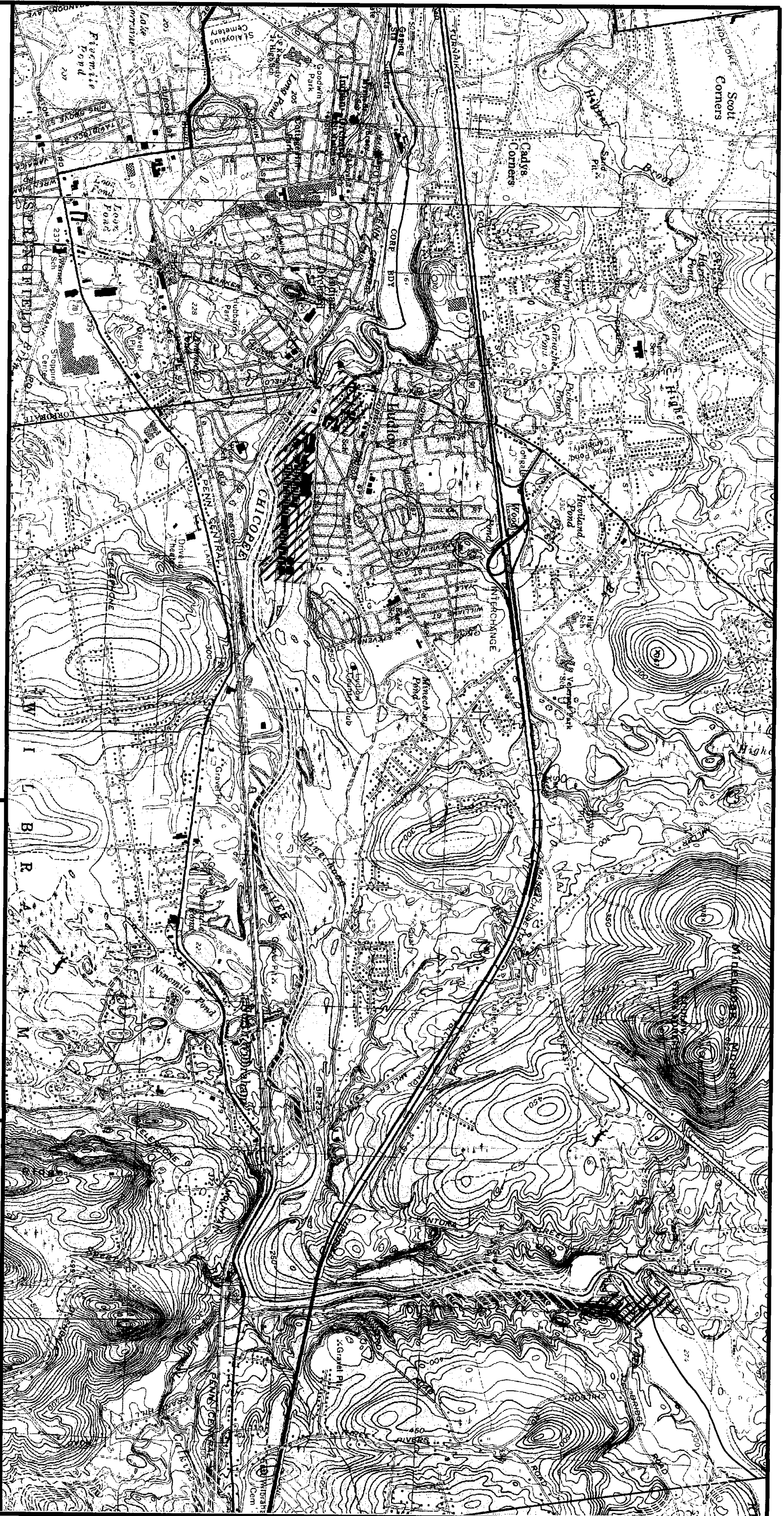
 Ludlow Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 21,209  
Regulated Population: 19,149



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/13/02; US EPA- New England GIS Center L:\projects\stormwater\phase2\matowns/new



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 SPRINGFIELD NORTH, LUDLOW, MA  
 QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
 LUDLOW, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**FIGURE 1**  
**SITE LOCUS**

SCALE: 1:25000

**Tighe & Bond**

JUL Y 2003

**APPENDIX F**

**WILBRAHAM, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Wilbraham, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

### Regulated Entities

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Wilbraham, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Wilbraham Portion)	NA	NA

### Receiving Streams/Outfalls/Impairments

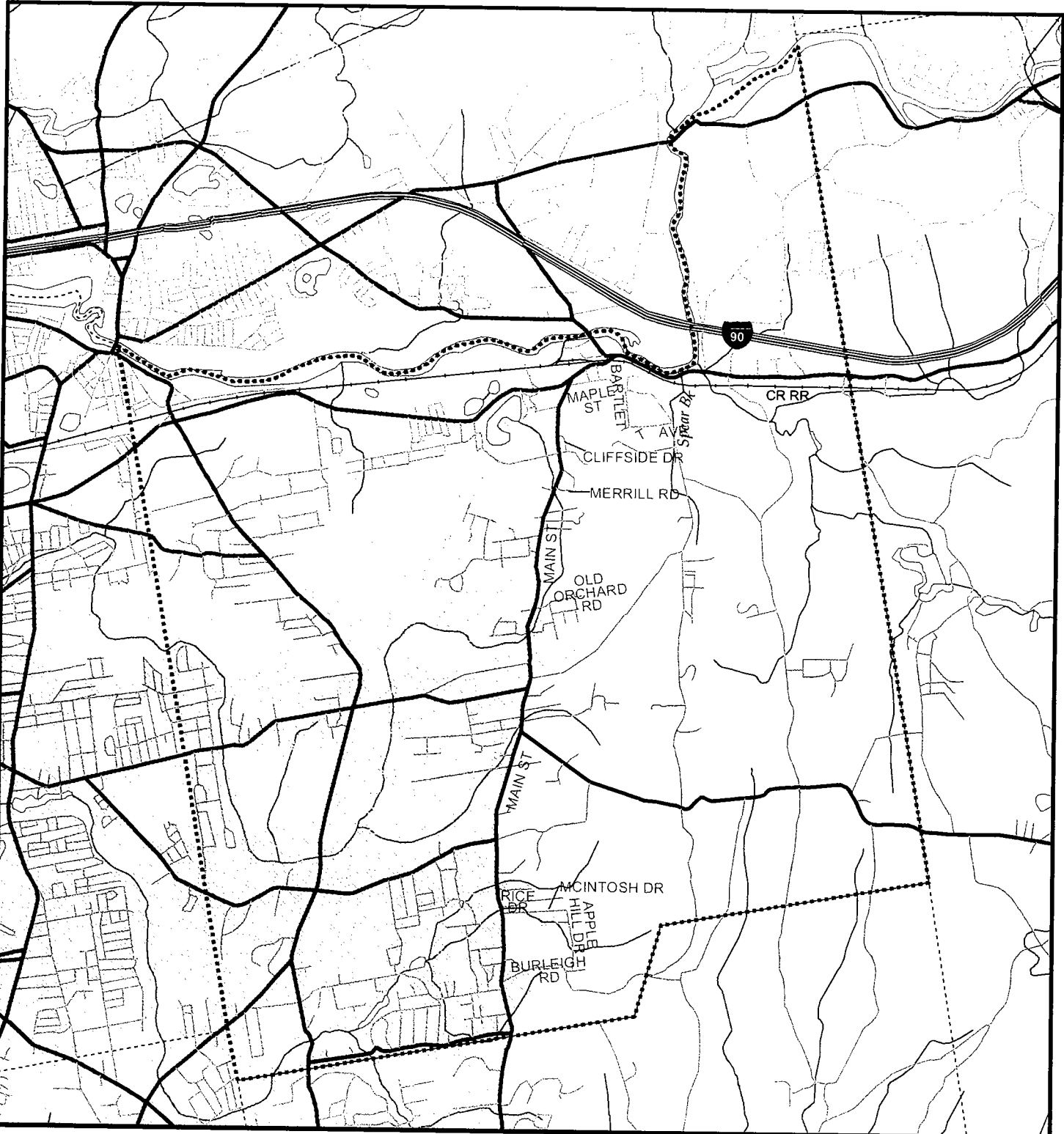
Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Wilbraham, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Chicopee River	Not yet determined	Yes	Pathogens
Maxwell Brook	Not yet determined	No	Not Applicable
Twelvemile Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of the Chicopee River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

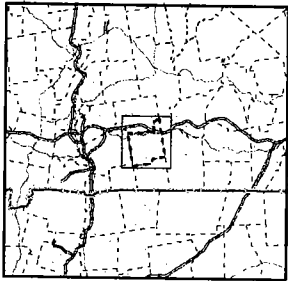
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

### Best Management Practices


According to the Massachusetts Year 2002 Integrated List of Waters, Chicopee River is designated as "Waters requiring a TMDL". The targeted pollutant is pathogens. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



**Area of Focus:**

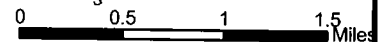


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
Wilbraham, Massachusetts**

 Wilbraham Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 13,473  
Regulated Population: 11,127

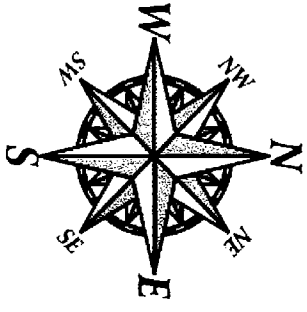


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



BASED ON  
USGS TOPOGRAPHIC MAP FOR  
LUDLOW, PALMER, MA  
QUADRANGLE

**FIGURE 1**  
SITE LOCUS

MASSACHUSETTS TURNPIKE AUTHORITY  
WILBRAHAM, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003

\*NHESP 1999-2001 Priority Habitats for State-Protected Rare Species NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
NHESP 1999-2001 Estimated Habitats for Rare Wildlife For Use with the MA Wetlands Protection Act Regulations (310 CMR 10)

**APPENDIX G**  
**PALMER, MASSACHUSETTS**



Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Palmer, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Palmer, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Palmer Portion)	NA	NA
Interchange Facility	Int. #8	146 Thorndike Road, Palmer, MA 01069

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Palmer, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

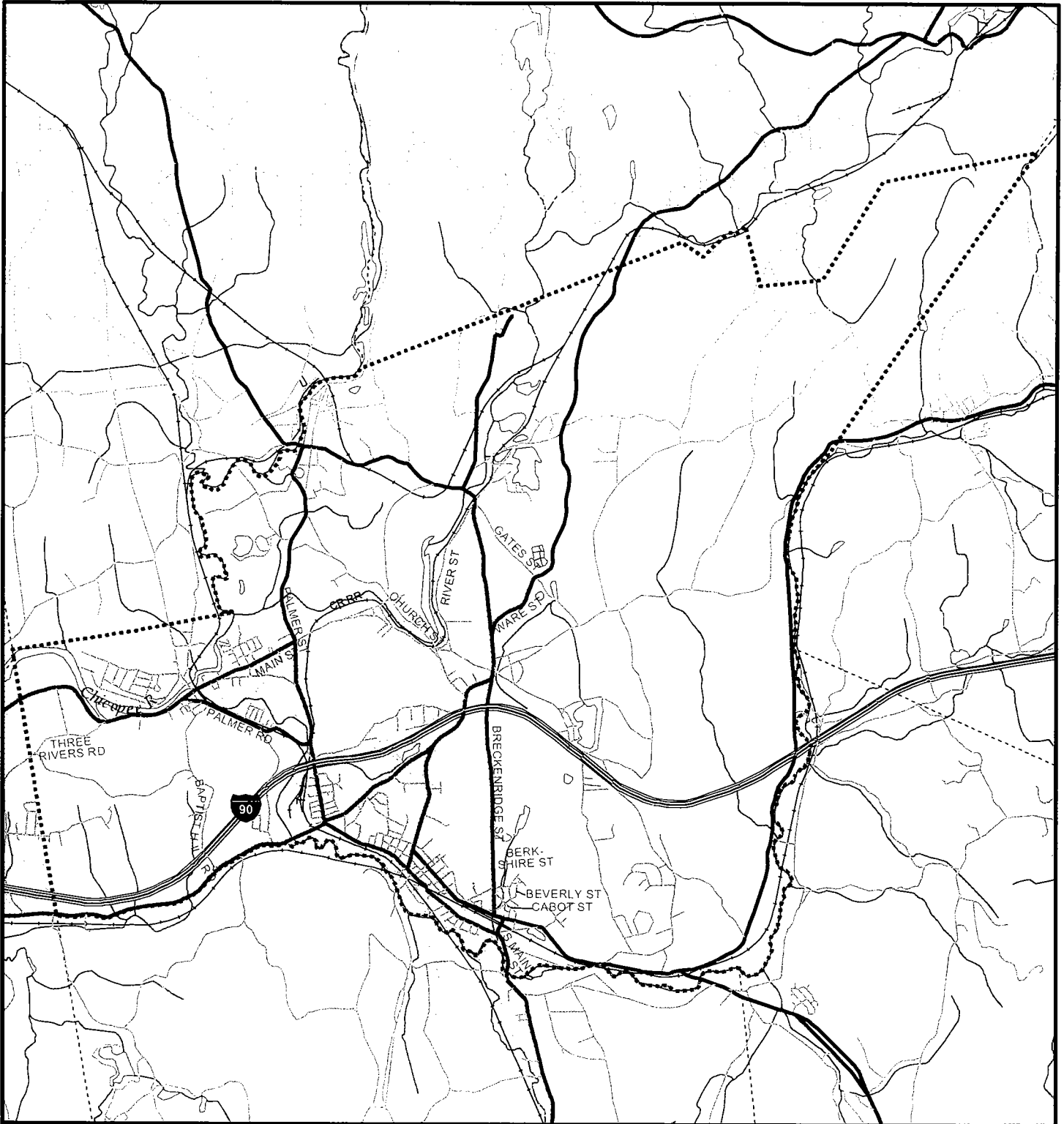
Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Calkins Brook	Not yet determined	No	Not Applicable
Quaboag River	Not yet determined	Yes	Metals
Thorndike Lake	Not yet determined	No	Not Applicable
Kings Brook	Not yet determined	No	Not Applicable
Blodgett Mill Brook	Not yet determined	No	Not Applicable
Penny Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of the Quaboag River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

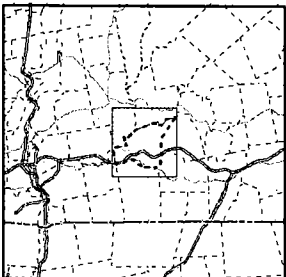
**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, Quaboag River is designated as "Waters requiring a TMDL". The targeted pollutant is metals. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these

sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:

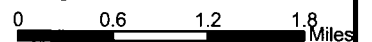


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Palmer, Massachusetts***

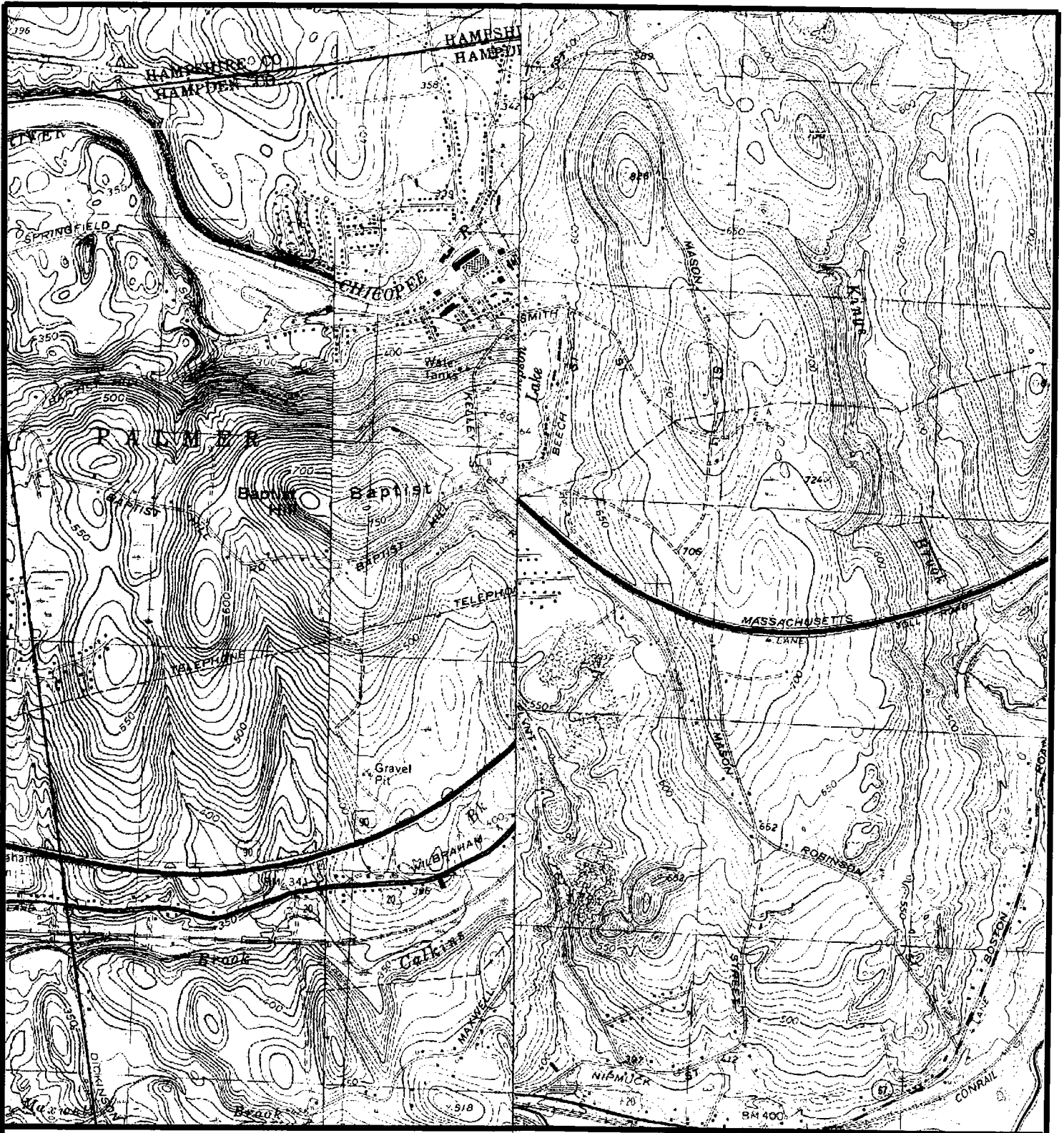
 Palmer Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 12,497  
Regulated Population: 6,998



Data Sources: Urbanized Areas from US Census Bureau (2000); Political boundaries from MassGIS; Hydrography from NHD; Transportation data from GDT at 1:24,000.  
Map Created: 11/19/02; US EPA- New England GIS Center  
L:\projects\stormwater\phase2\matowns/new\

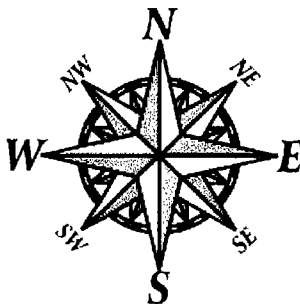


**LEGEND:**

- \* State Registry
- //// State Registry
- ⚡ NHESP 1999
- ⚡ NHESP 1999
- ⚡ Rare Species
- Town Bounda

**FIGURE 1  
SITE LOCUS**

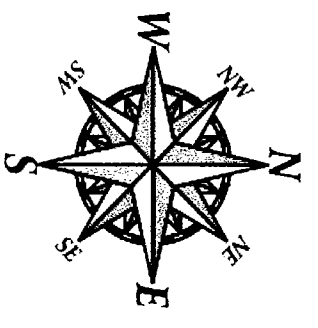
**MASSACHUSETTS TURNPIKE AUTHORITY  
PALMER, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
ALL MUNICIPAL SEPARATE STORM SEWER SYSTEM**



\* NHESP 1999-2001 Priority Habitats for S  
NHESP 1999-2001 Estimated Habitats for ALE: 1:25000

**Tighe & Bond**

JULY 2003



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to Significant Habitat as designated under Massachusetts Endangered Species Act.  
 NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act/Regulators (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 LUDLOW, PALMER, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
 PALMER, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JUL Y 2003

MZ70palmer.apr

**APPENDIX H**  
**STURBRIDGE, MASSACHUSETTS**

## STURBRIDGE, MASSACHUSETTS

**Tighe&Bond**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Sturbridge, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

### Regulated Entities

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Sturbridge, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Sturbridge Portion)	NA	NA

### Receiving Streams/Outfalls/Impairments

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Sturbridge, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Alum Pond	Not yet determined	Yes	Organic Enrichment/Low DO
Cedar Pond	Not yet determined	Yes	Noxious Aquatic Plants
Long Pond	Not yet determined	No	Not Applicable
Walker Pond	Not yet determined	Yes	Nutrients, Noxious Aquatic Plants, Turbidity
Hobbs Brook	Not yet determined	No	Not Applicable
McKinstry Brook	Not yet determined	No	Not Applicable
Sibley Ponds	Not yet determined	Yes	Organic Enrichment/Low DO, Noxious Aquatic Plants, Turbidity
Unnamed tributaries of Cedar Pond	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

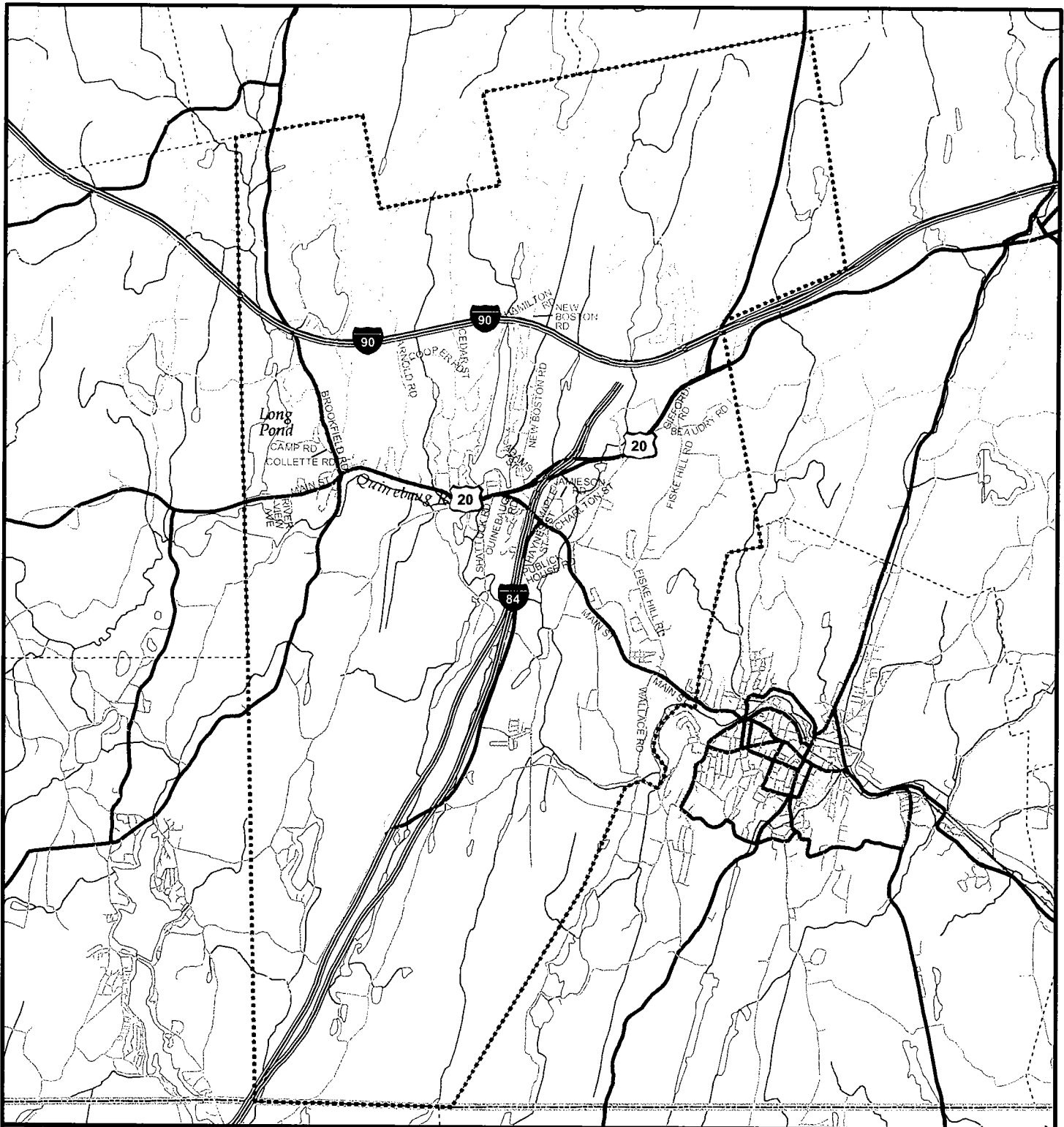
**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, the City of Sturbridge has four (4) water bodies listed as “Waters requiring a TMDL”. These four (4) water bodies are as follows:

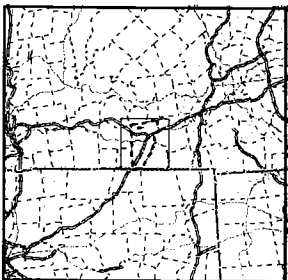
- The targeted pollutant for Alum Pond is Organic Enrichment/Low dissolved oxygen (DO);
- The targeted pollutant for Cedar Pond is Noxious Aquatic Plants. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems;
- The targeted pollutants for Walker Pond are Nutrients, Noxious Aquatic Plants, and Turbidity. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems;
- The targeted pollutants for Sibley Ponds are Organic Enrichment/Low DO, Noxious Aquatic Plants, and Turbidity. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems.

The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.







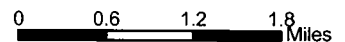
Area of Focus:



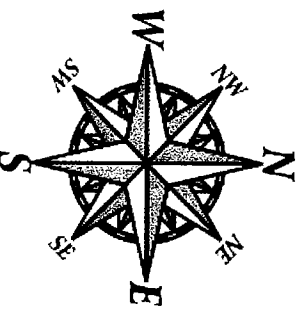
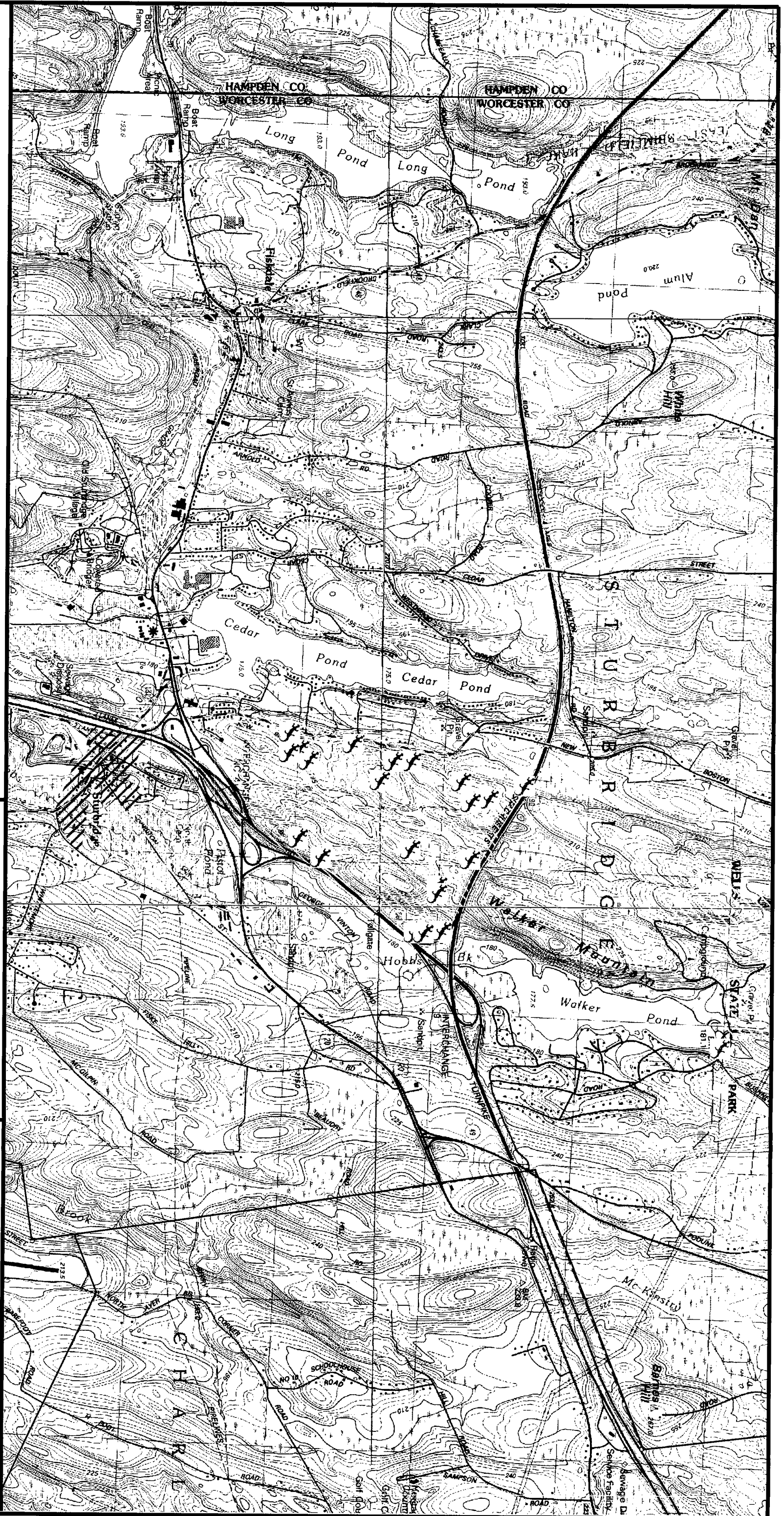
NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Sturbridge, Massachusetts*

-  Sturbridge Town Boundary
-  Regulated Area (2000 Urbanized Area)

Town Population: 7,837  
Regulated Population: 3,727



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000.  
Map Created: 9/30/02; US EPA- New England GIS Center  
L:\projects\stormwater\phase2\matowns/new



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to Significant Habitat as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 WARREN, EAST BROOKFIELD, MA  
 QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
 STURBRIDGE, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**FIGURE 1**  
**SITE LOCUS**

SCALE: 1:25000

**Tighe&Bond**

JULY 2003

**APPENDIX I**

**CHARLTON, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Charlton, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Charlton, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Charlton Portion)	NA	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Charlton, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Pikes Pond	Not yet determined	No	Not Applicable
Little River	Not yet determined	No	Not Applicable
Hultered Pond	Not yet determined	No	Not Applicable
Cady Brook	Not yet determined	Yes	Nutrients, Organic Enrichment/Low DO, Taste, Odor, Color
Unnamed tributaries of Pikes Pond	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

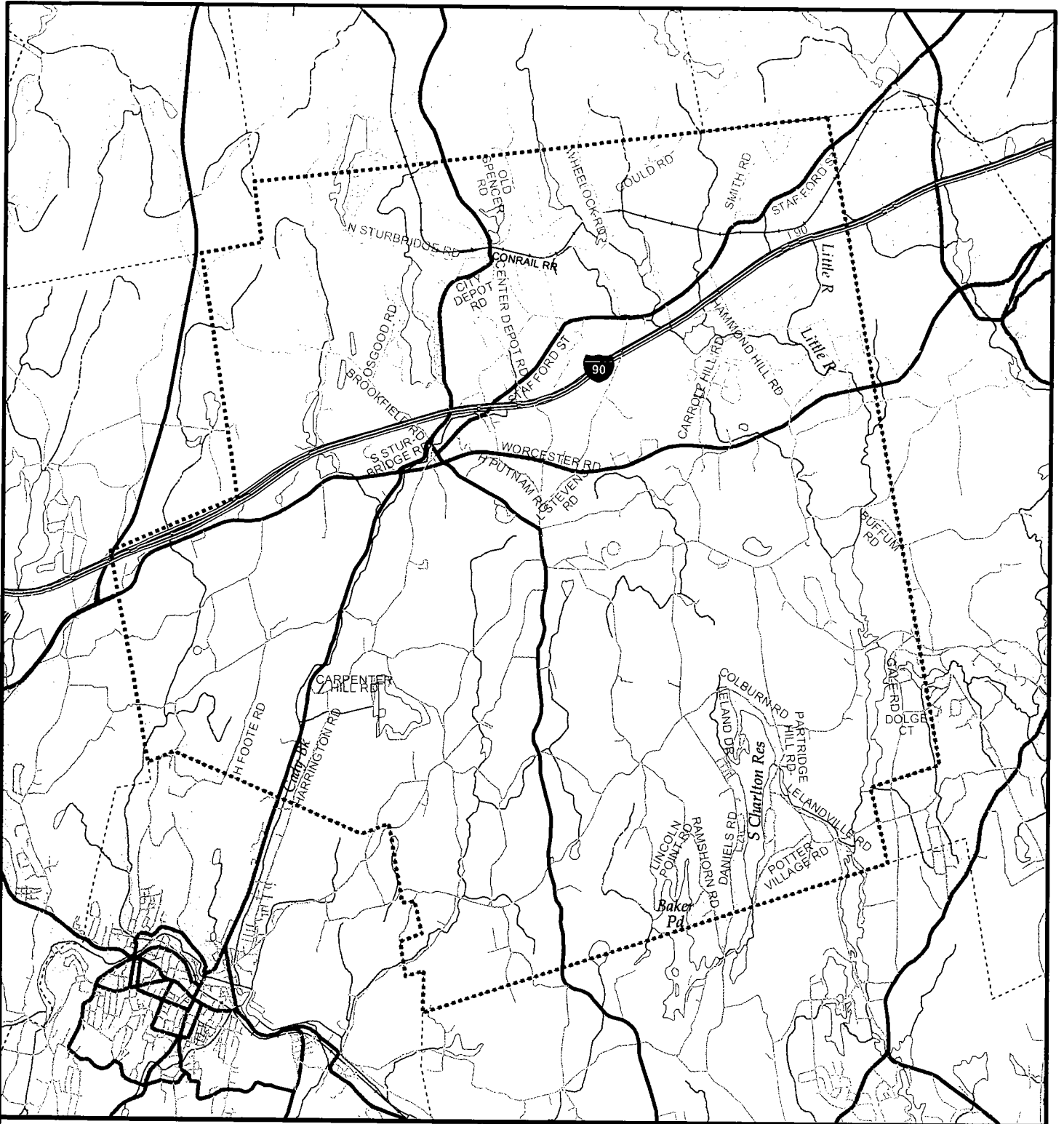
According to the Massachusetts Year 2002 Integrated List of Waters, Cady Brook is designated as "Waters requiring a TMDL". The targeted pollutants are Nutrients, Organic Enrichment/Low DO, and Taste, Odor, and Color. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. The Stormwater Management Program includes many BMPs to address

## **CHARLTON, MASSACHUSETTS**

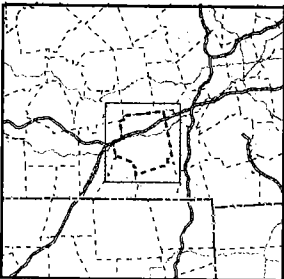
**Tighe&Bond**

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reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:

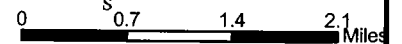


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
Charlton, Massachusetts**

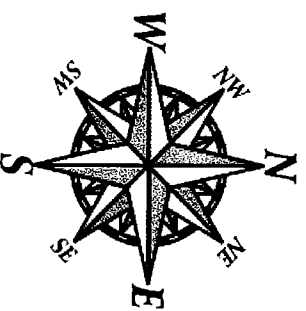
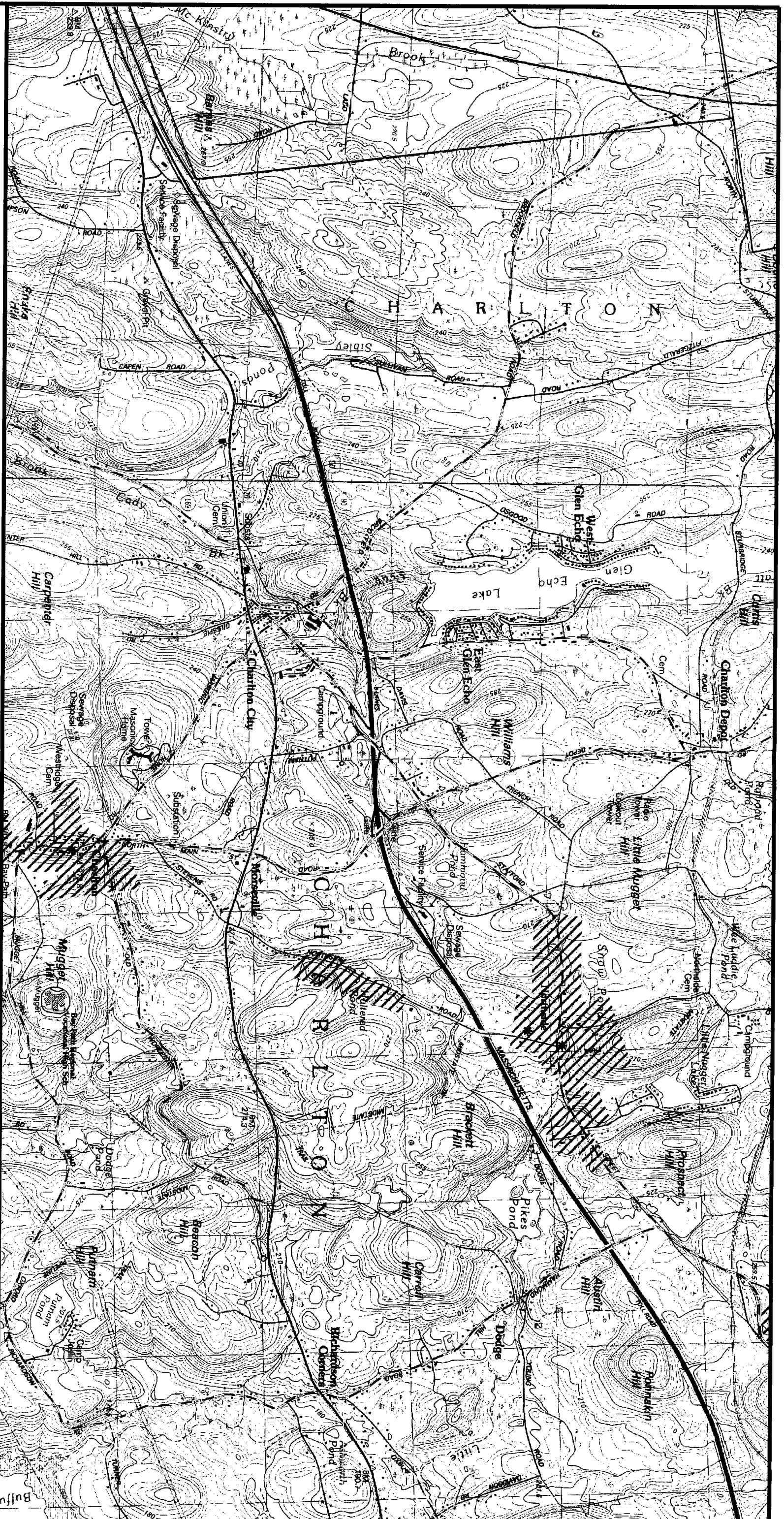
 Charlton Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 11,263  
Regulated Population: 3,738



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 9/30/02; US EPA, New England GIS Center L:\projects\stormwater\phase2\matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to Significant Habitat as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 EAST BROOKFIELD, LEICHESTER, MA  
 QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
 CHARLTON, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**FIGURE 1**  
 SITE LOCUS

SCALE: 1:25000

**Tighe&Bond**

JUL Y 2003

**APPENDIX J**

**OXFORD, MASSACHUSETTS**



## **OXFORD, MASSACHUSETTS**

### **Tighe&Bond**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Oxford, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

#### **Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Oxford, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Oxford Portion)	NA	NA

#### **Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Oxford, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
The Oxbow	Not yet determined	No	Not Applicable
Texas Pond	Not yet determined	Yes	Metals, Noxious Aquatic Plants
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

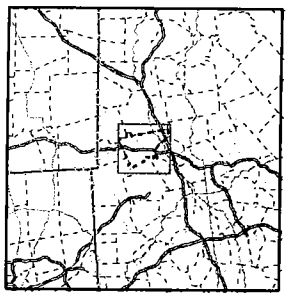
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

#### **Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, Texas Pond is designated as "Waters requiring a TMDL". The targeted pollutant for Texas Pond is Metals and Noxious Aquatic Plants. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:



**NPDES Phase II Stormwater Program**  
**Automatically Designated MS4 Areas**  
*Oxford, Massachusetts*

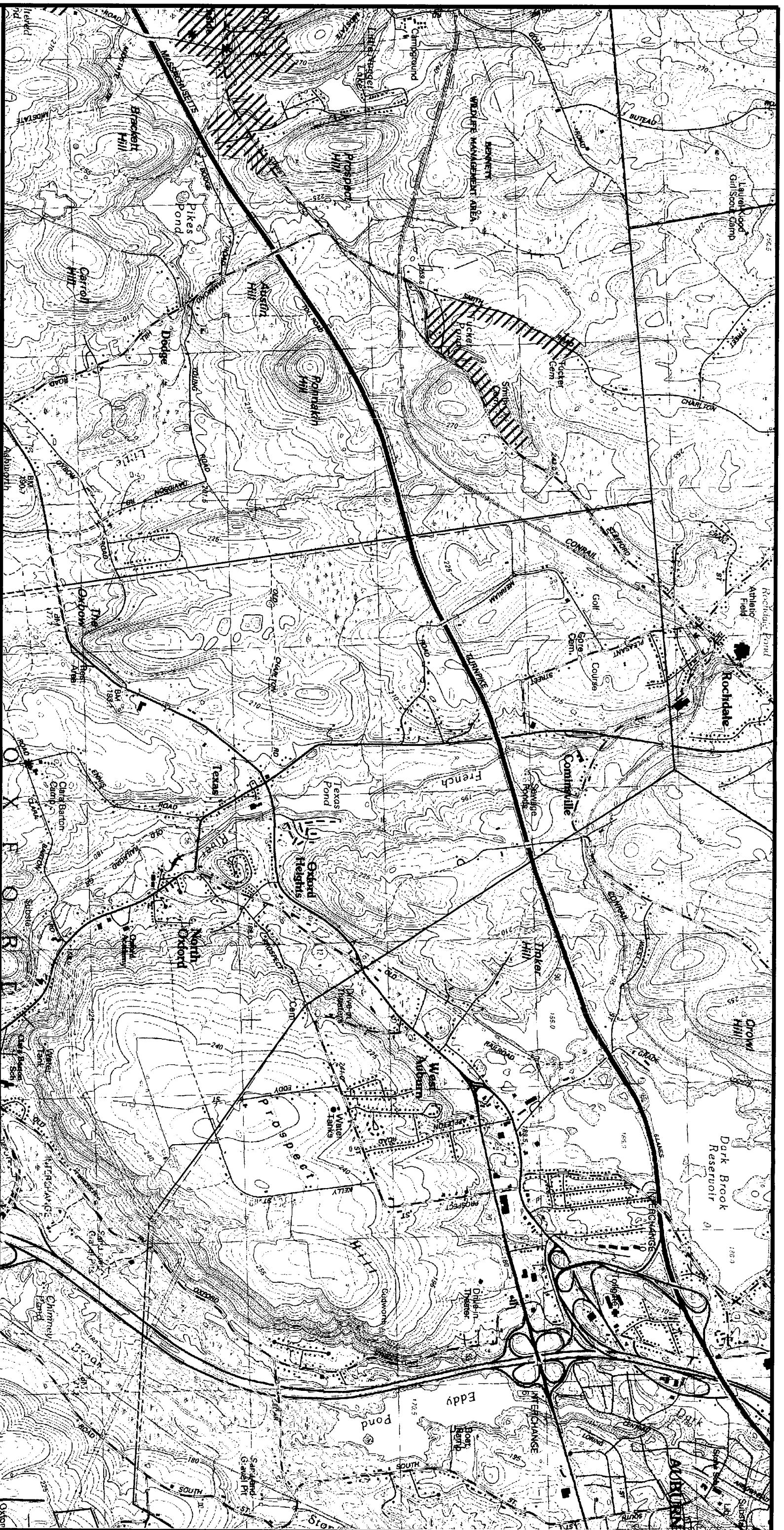
Town Population: 13,352  
 Regulated Population: 11,027

Oxford Town Boundary

Regulated Area (2000 Urbanized Area)

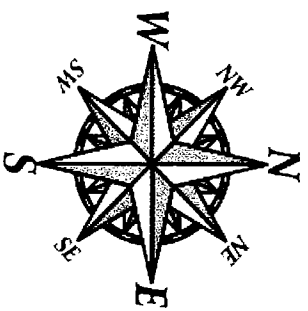


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/19/02. US EPA - New England GIS Center. L:\projects\stormwater\phase2\malow\new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



**FIGURE 1**  
SITE LOCUS

BASED ON  
USGS TOPOGRAPHIC MAP FOR  
LEICHESTER, WORCESTER SOUTH, MA  
QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
OXFORD, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe&Bond**

JULY 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species; NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX K**  
**AUBURN, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Auburn, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Auburn, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Auburn Portion)	NA	NA
Interchange Facility	Int. #10	Building 1, Massachusetts Turnpike, Auburn, MA 01501
Maintenance Depot	M-5	3 Bancroft Street, Auburn, MA 01501

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Auburn, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Dark Brook Reservoir	Not yet determined	No	Not Applicable
Dark Brook	Not yet determined	No	Not Applicable
Broad Meadow Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of Pondville Pond	Not yet determined	No	Not Applicable
Unnamed tributaries of Eddy Pond	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

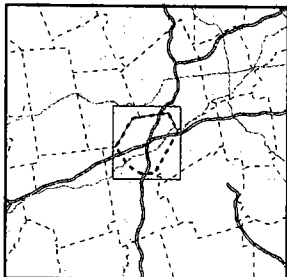
**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, There are no water bodies that receive storm water discharges from the Massachusetts Turnpike Authority, that are subject

to a Total Maximum Daily Load (TMDL) Limit in the City of Auburn. See Section 5 of this submittal for the Best Management Practices (BMP's) to be implemented by the Massachusetts Turnpike Authority. Section 6 of this submittal contains an implementation time frame table for these BMP's.




Area of Focus:

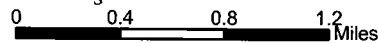


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Auburn, Massachusetts***

 Auburn Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 15,901  
Regulated Population: 15,619

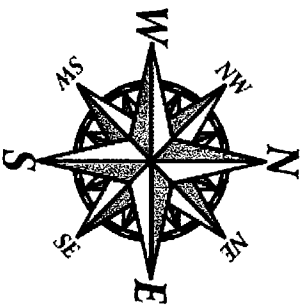


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from Mass GIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Updated: 10/4/02: US EPA- New England GIS Center L:/projects/stormwater/phase2/nhtowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
 NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 LEICESTER, WORCESTER SOUTH, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
 AUBURN, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003



**APPENDIX L**

**MILLBURY, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Millbury, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Millbury, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Millbury Portion)	NA	NA
Interchange Facility	Int. #10A	Greenwood Street, Millbury, MA 01527
Interchange Facility	Int. #11	1498 Worcester Road, Millbury, MA 01527

**Receiving Streams/Outfalls/Impairments**

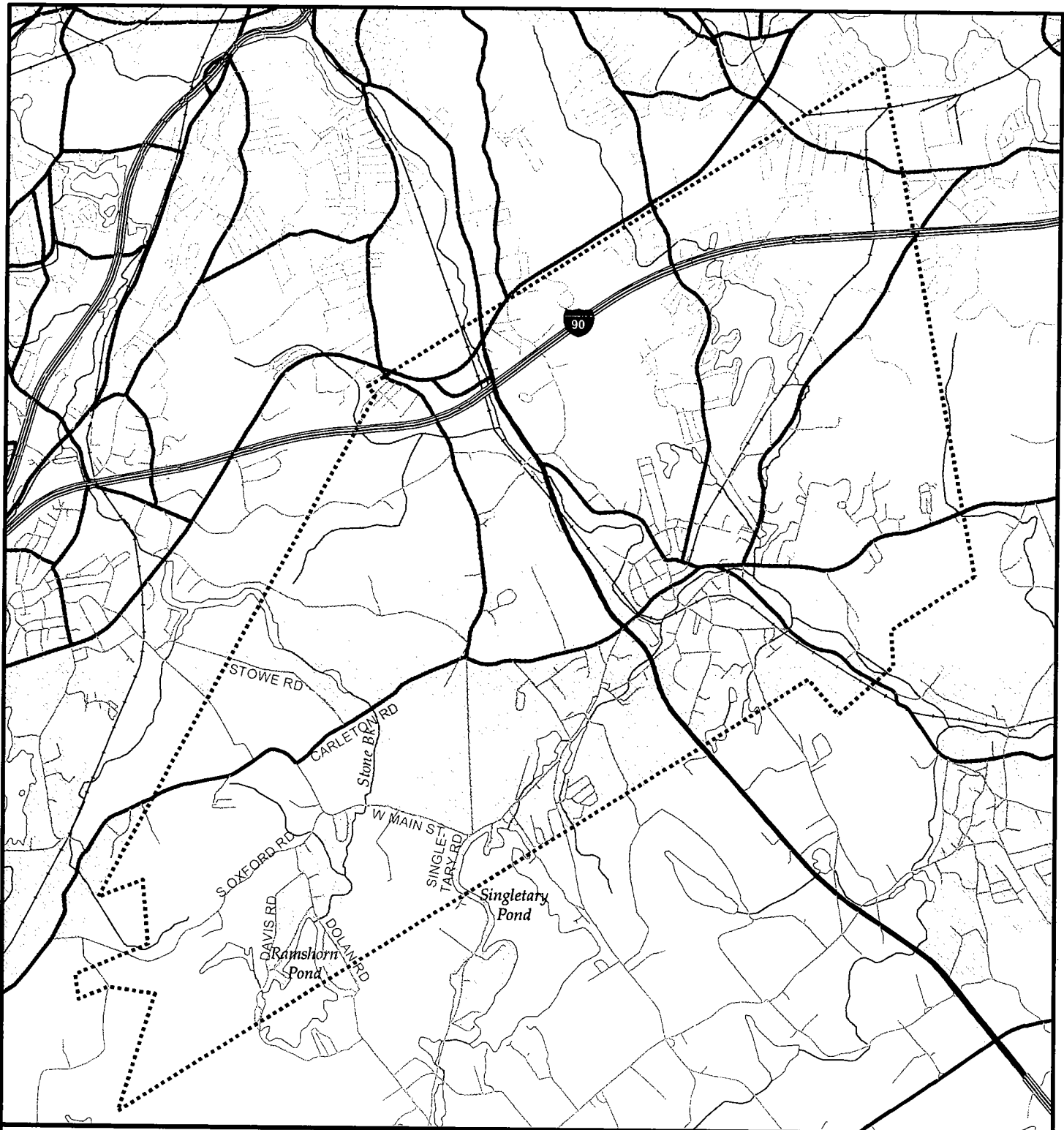
Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Millbury, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Blackstone River	Not yet determined	Yes	Unknown Toxicity, Metals, Priority Organics, Nutrients, pH, Pathogens, Suspended Solids, Turbidity, Taste, Color, Odor
Dorothy Pond	Not yet determined	No	Not Applicable
Meadow Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of the Blackstone River	Not yet determined	No	Not Applicable
Unnamed tributaries of Dorothy Pond	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

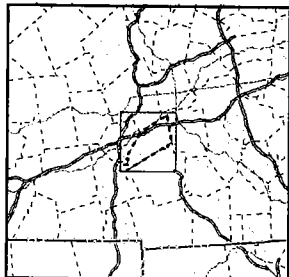
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, the Blackstone River is designated as “Waters requiring a TMDL”. The targeted pollutants are Unknown Toxicity, Metals, Priority Organics, Nutrients, pH, Pathogens, Suspended Solids, Turbidity, and Taste, Color, Odor. Sources of priority organics may include but are not limited to: road surfaces, inadequate fueling areas or practices, illegal dumping. Sources of this suspended solids may include but are not limited to: lawn care products, litter, winter road maintenance materials, erosion from construction activities, and illicit sewer discharges. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:

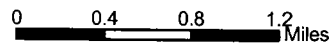
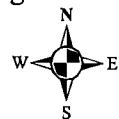


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
Millbury, Massachusetts**

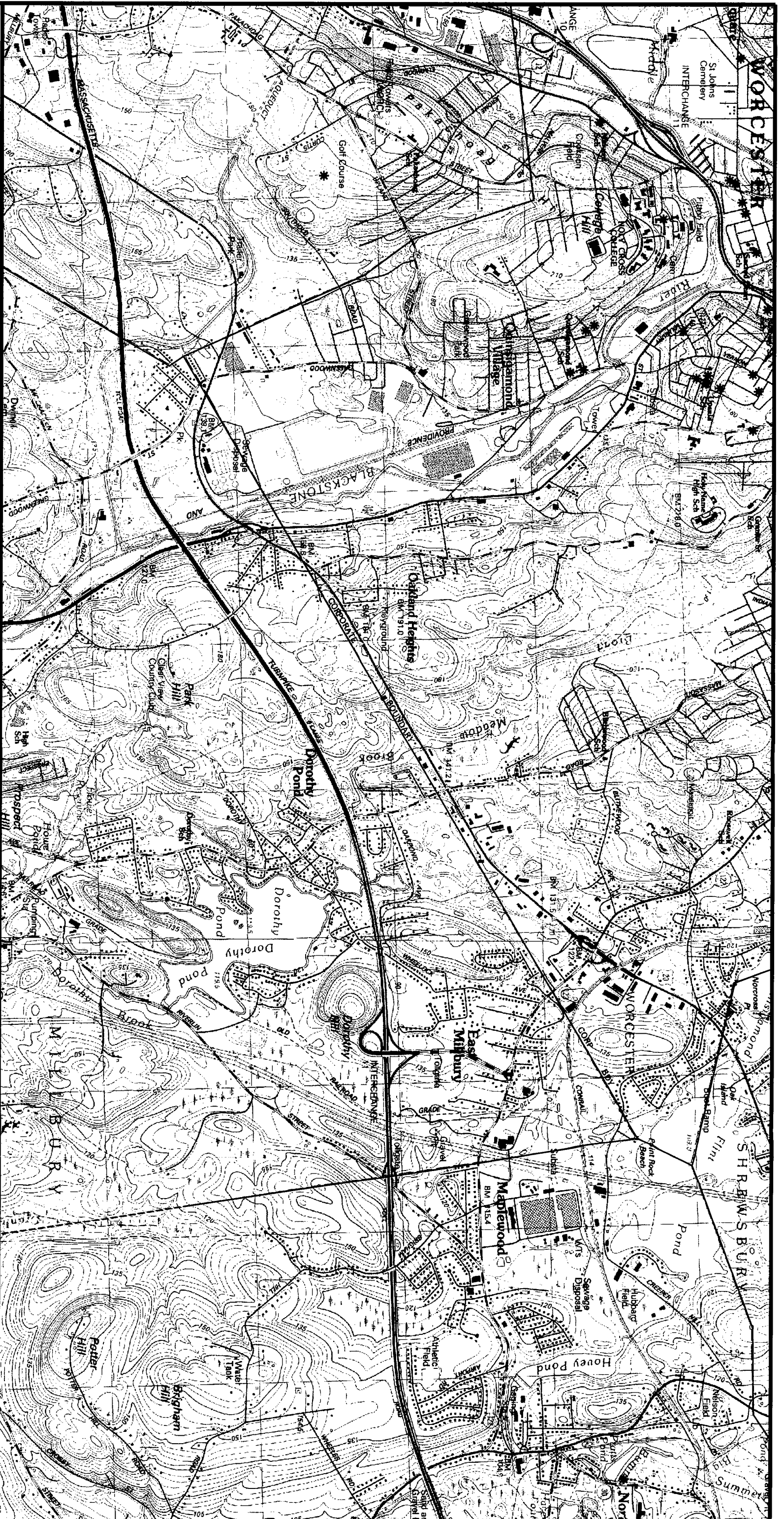
 Millbury Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 12,784  
Regulated Population: 12,157

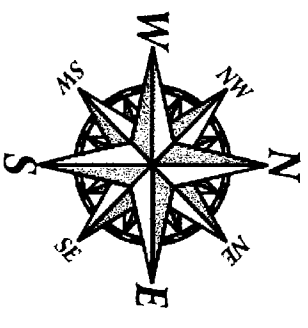


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/14/02; US EPA- New England GIS Center L:\projects\stormwater\phase2\matowns/new\



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 WORCESTER SOUTH, GRAFTON, MA  
 QUADRANGLE

**FIGURE 1**  
 SITE LOCUS

MASSACHUSETTS TURNPIKE AUTHORITY  
 MILBURY, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**Tighe & Bond**

SCALE: 1:25000

JUL Y 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to Significant Habitat as designated under Massachusetts Endangered Species Act.  
 NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX M**  
**GRAFTON, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Grafton, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Grafton, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Grafton Portion)	NA	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Grafton, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Quinsigamond River	Not yet determined	No	Not Applicable
Hayes Pond	Not yet determined	Yes	Noxious Aquatic Plants
Axtell Brook	Not yet determined	No	Not Applicable
Unnamed tributaries of Lake Ripple	Not yet determined	No	Not Applicable
Unnamed tributaries of the Quinsigamond River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

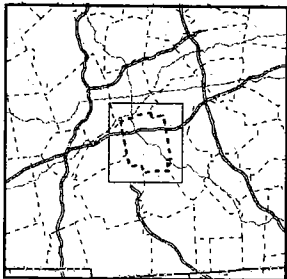
According to the Massachusetts Year 2002 Integrated List of Waters, the Hayes Pond is designated as "Waters requiring a TMDL". The targeted pollutant is Noxious Aquatic Plants. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories.

The City will implement these BMPs under the responsible department and timeframes as previously described.





Area of Focus:

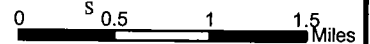
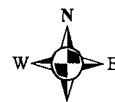


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
Grafton, Massachusetts**

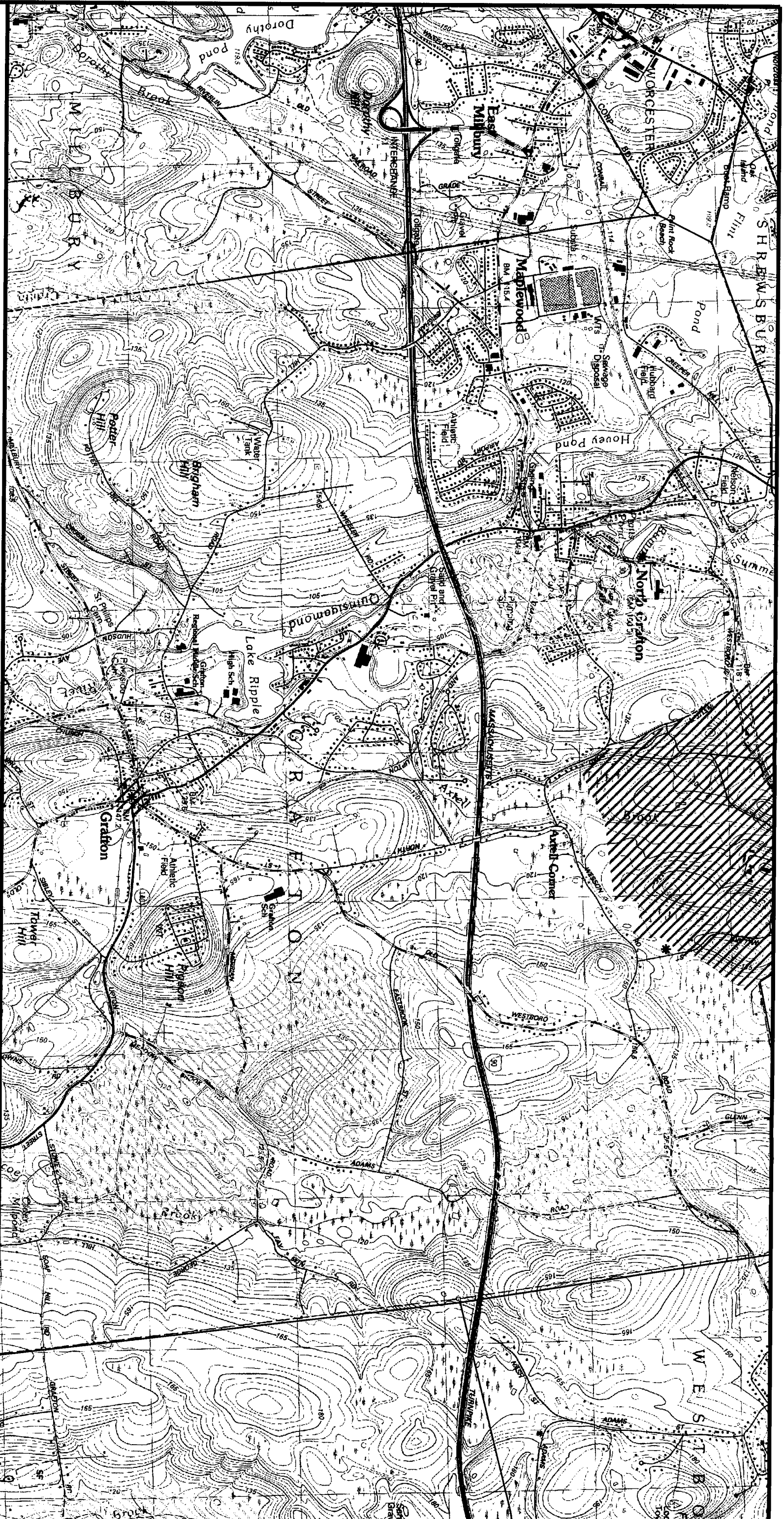
 Grafton Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 14,894  
Regulated Population: 12,589

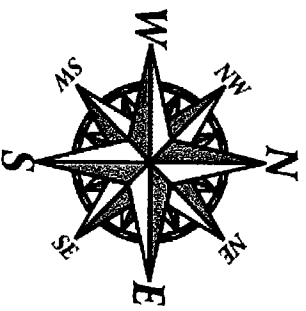


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 10/4/02; US EPA- New England GIS Center L:\projects\stormwater\phase2\matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



BASED ON  
USGS TOPOGRAPHIC MAP FOR  
GRAFTON, MA  
QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
GRAFTON, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**FIGURE 1**  
SITE LOCUS

SCALE: 1:25000

**Tighe&Bond**

JULY 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX N**  
**WESTBOROUGH, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Westborough, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

### Regulated Entities

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Westborough, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Westborough Portion)	NA	NA
Interchange Facility	Int. #11A	1 Mass Turnpike, Westborough, MA 01581

### Receiving Streams/Outfalls/Impairments

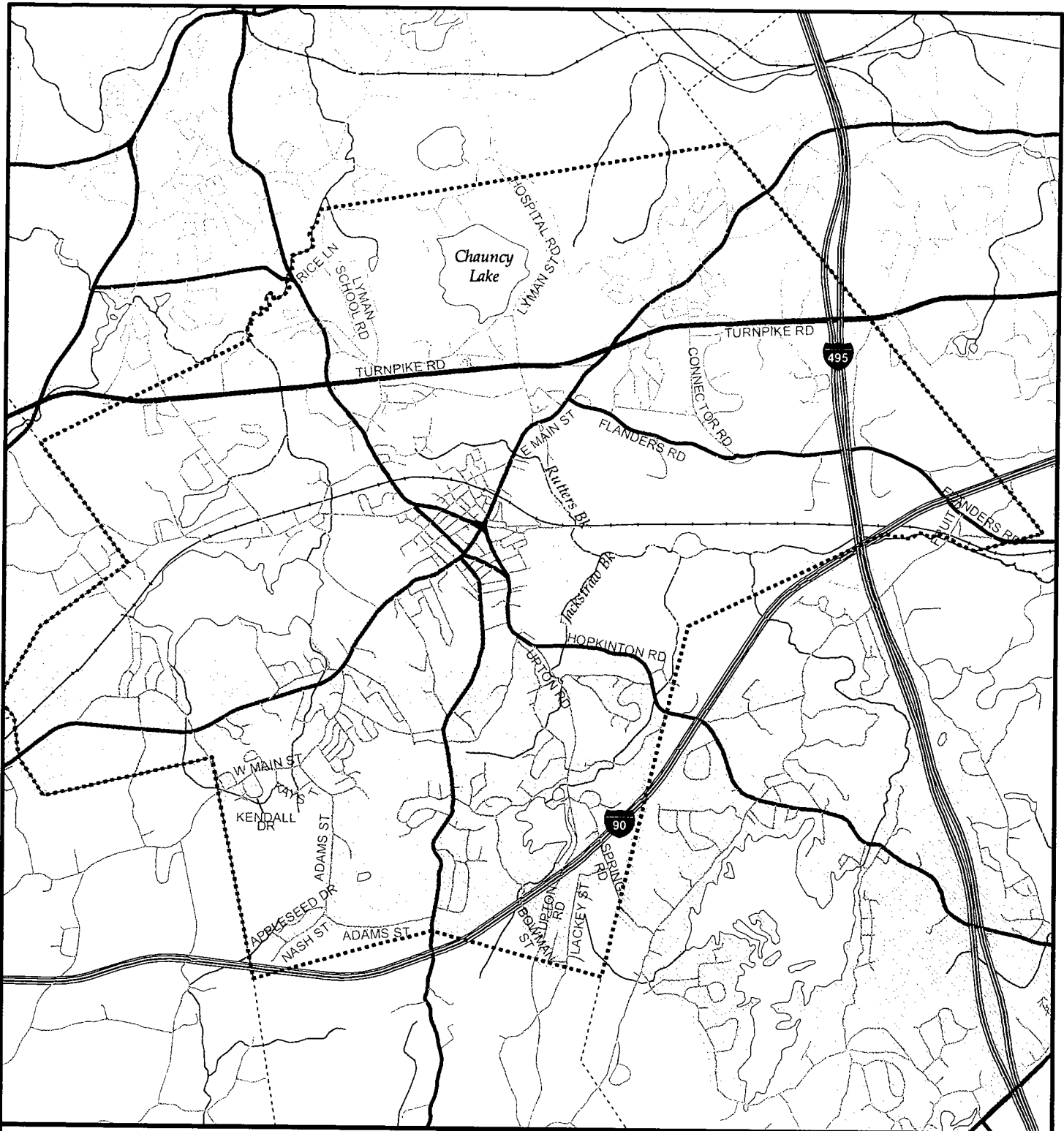
Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Westborough, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Westboro Reservoir	Not yet determined	No	Not Applicable
Whitehall Brook	Not yet determined	No	Not Applicable
Piccadilly Brook	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

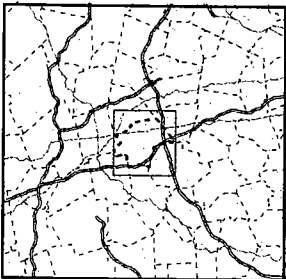
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

### Best Management Practices



According to the Massachusetts Year 2002 Integrated List of Waters, There are no water bodies that receive storm water discharges from the Massachusetts Turnpike Authority, that are subject to a Total Maximum Daily Load (TMDL) Limit in the City of Westborough. See Section 5 of this submittal for the Best Management Practices (BMP's) to be implemented by the Massachusetts Turnpike Authority. Section 6 of this submittal contains an implementation time frame table for these BMP's.



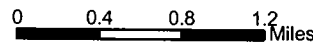
Area of Focus:



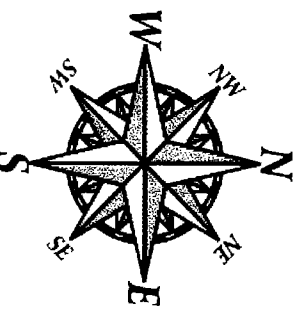
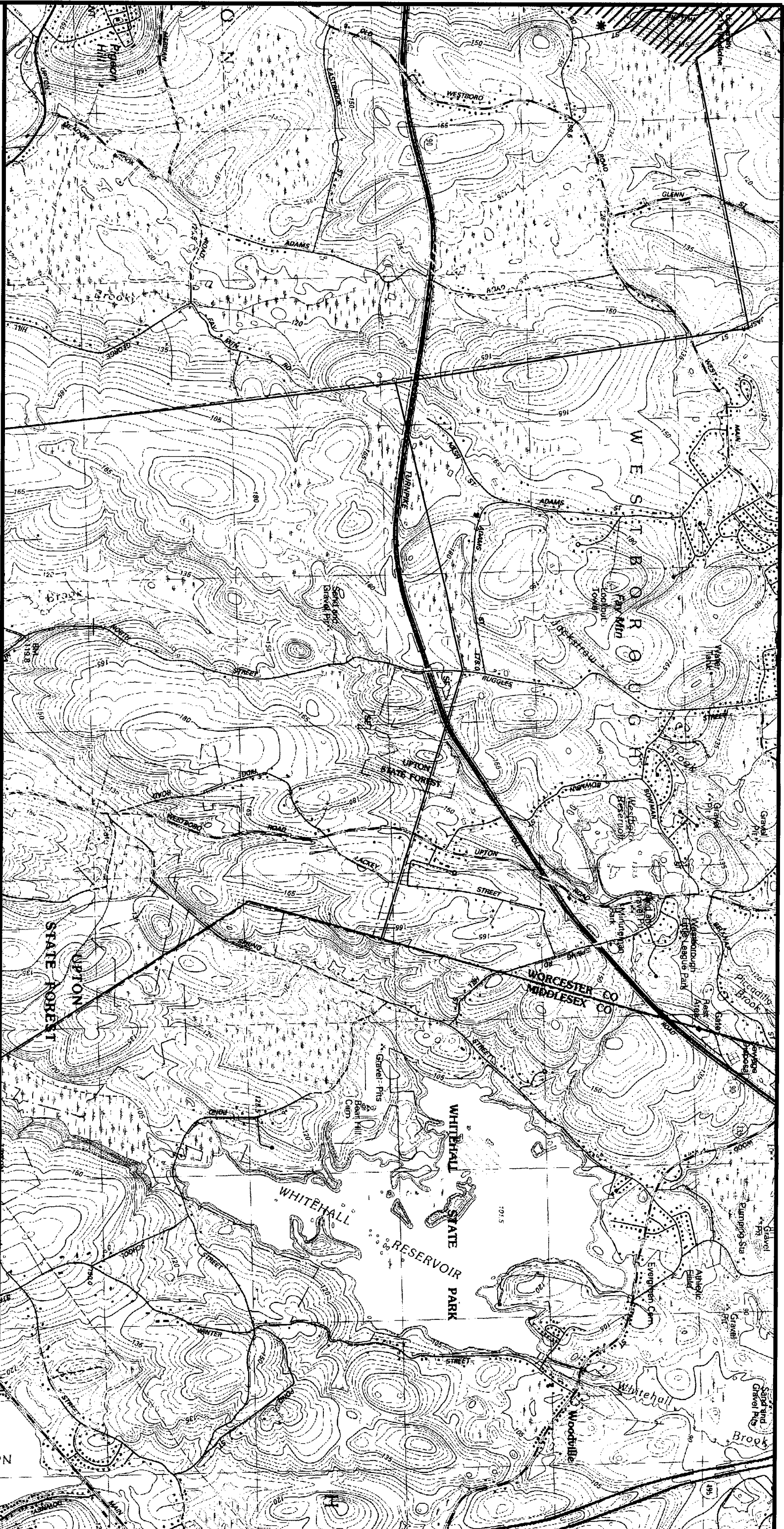
**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Westborough, Massachusetts***

-  Westborough Town Boundary
-  Regulated Area (2000 Urbanized Area)

Town Population: 17,997  
Regulated Population: 17,218



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species, NOT equivalent to Significant Habitat, as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 GRAFTON, MILFORD, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
 WESTBOROUGH, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe&Bond**

JUL Y 2003

**APPENDIX O**  
**HOPKINTON, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Hopkinton, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Hopkinton, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Hopkinton Portion)	NA	NA
Service Area	6AW	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Hopkinton, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Whitehall Brook	Not yet determined	No	Not Applicable
Sudbury River	Not yet determined	Yes	Metals
Unnamed tributaries of the Sudbury River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

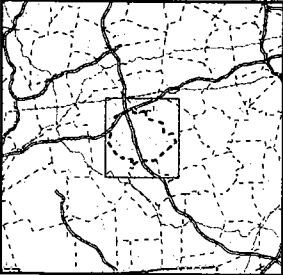
**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, Sudbury River is designated as "Waters requiring a TMDL". The targeted pollutant is metals. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.






Area of Focus:

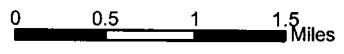


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Hopkinton, Massachusetts***

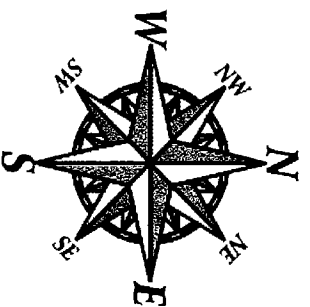
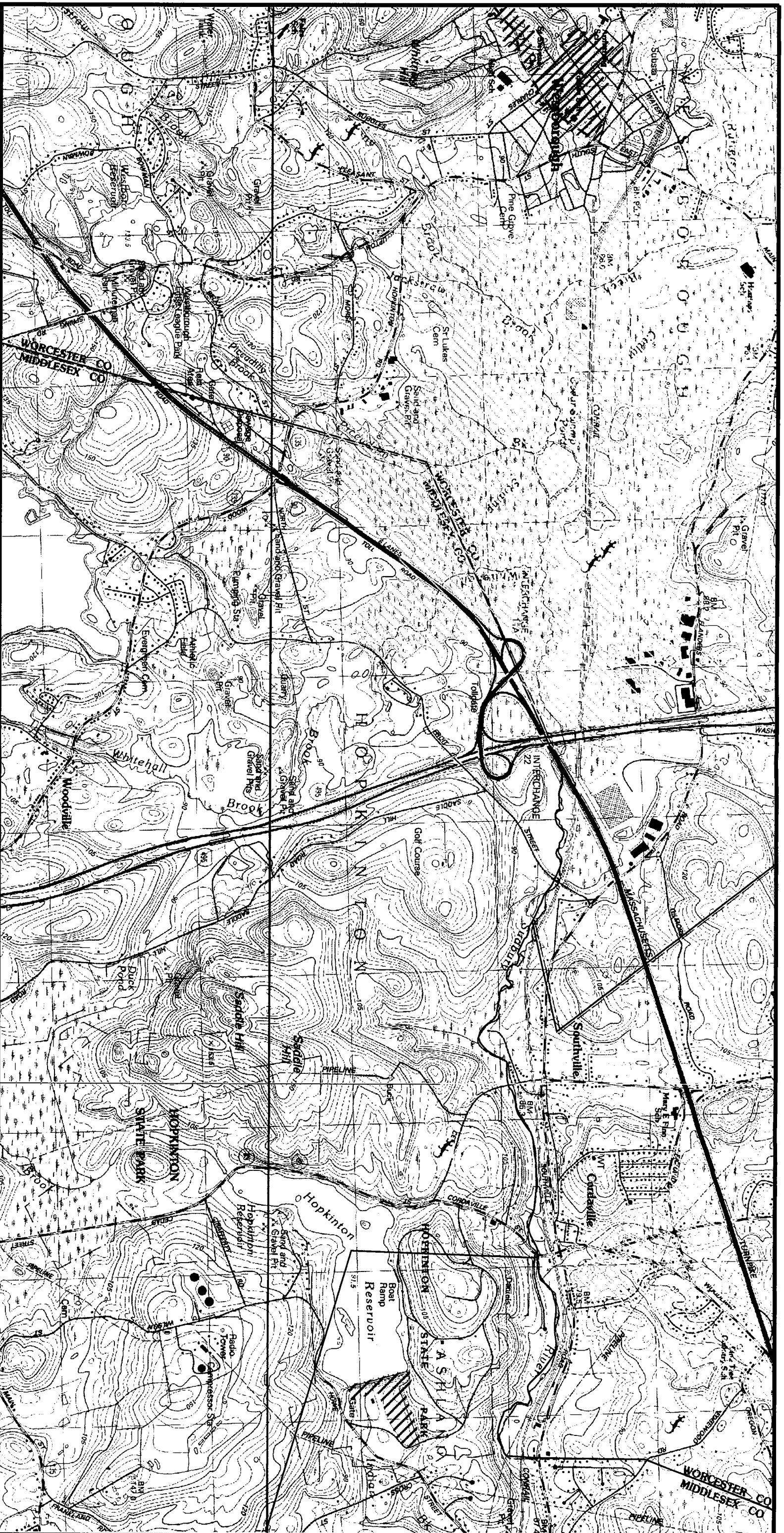
 Hopkinton Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 13,346  
Regulated Population: 10,403



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 10/4/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
 NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (810 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 MILFORD, MARLBOROUGH, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
 HOPKINTON, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003

**APPENDIX P**  
**SOUTHBOROUGH, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Southborough, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Southborough, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Southborough Portion)	NA	NA
State Police Barracks	PS-3	Southborough, MA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Southborough, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Crystal Pond	Not yet determined	No	Not Applicable
Sudbury River	Not yet determined	Yes	Metals
Unnamed tributaries of Crystal Pond	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

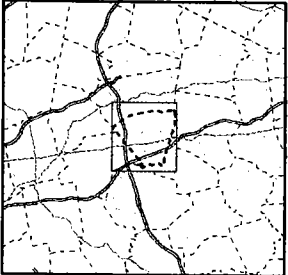
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**



According to the Massachusetts Year 2002 Integrated List of Waters, Sudbury River is designated as "Waters requiring a TMDL". The targeted pollutant is metals. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



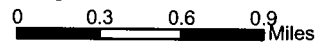
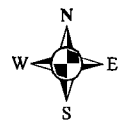
Area of Focus:



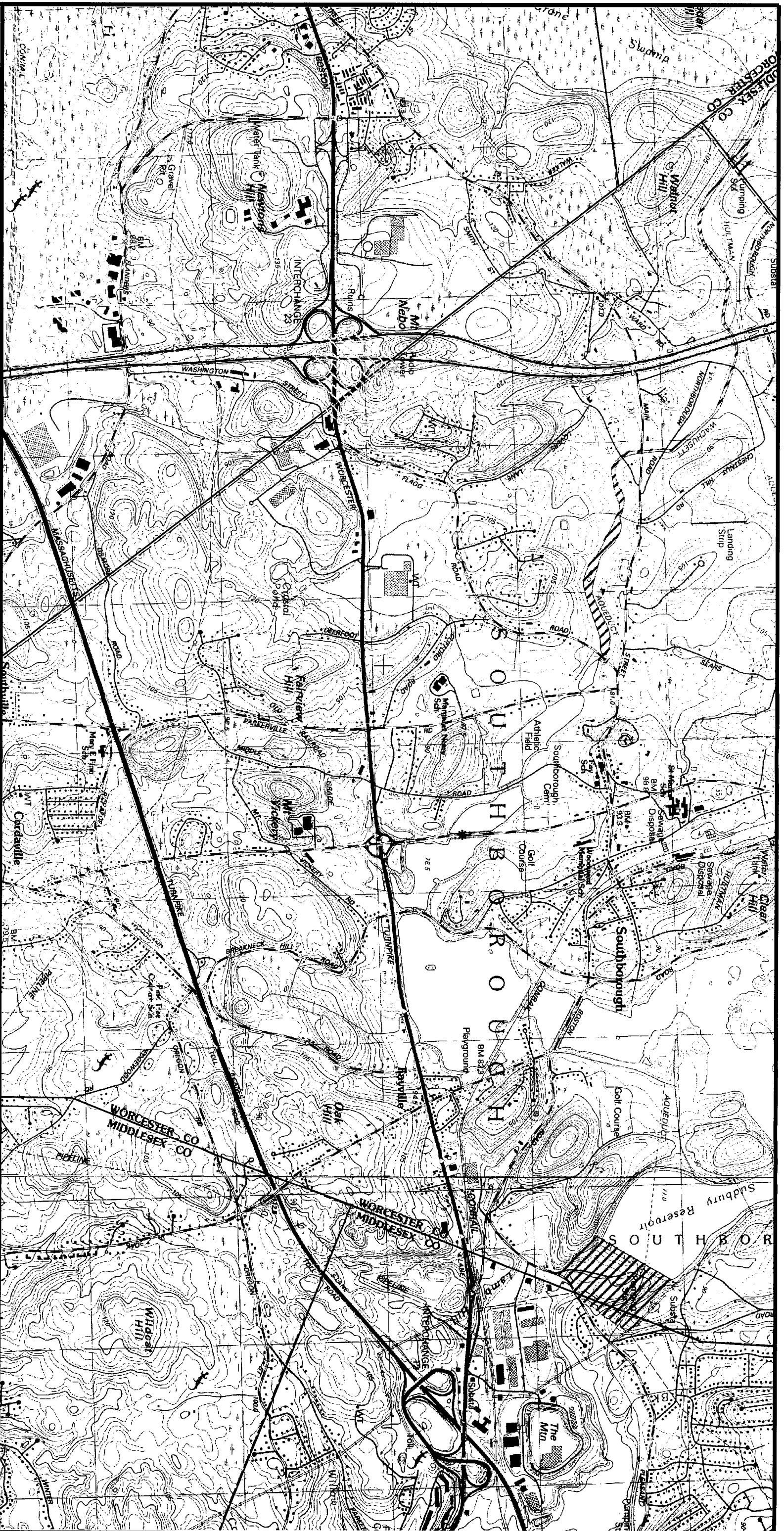
**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Southborough, Massachusetts***

 Southborough Town Boundary  
 Regulated Area (2000 Urbanized Area)

Town Population: 8,781  
Regulated Population: 7,743

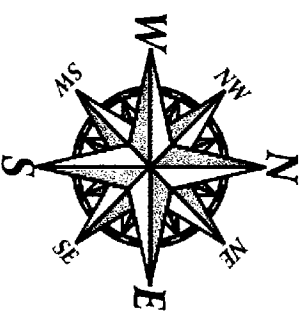


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/20/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



BASED ON  
USGS TOPOGRAPHIC MAP FOR  
MARLBOROUGH, FRAMINGHAM, MA  
QUADRANGLE

**FIGURE 1**  
SITE LOCUS

MASSACHUSETTS TURNPIKE AUTHORITY  
SOUTHBOROUGH, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to "significant habitat" as designated under Massachusetts Endangered Species Act.  
NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX Q**  
**FRAMINGHAM, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Framingham, Massachusetts is listed as a wholly urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Framingham, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Framingham Portion)	NA	NA
Interchange Facility	Int. #12	1650 Worcester Road, Framingham, MA 01701
Service Area	7W	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Framingham, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Foss Reservoir	Not yet determined	No	Not Applicable
Willow Brook	Not yet determined	No	Not Applicable
Baiting Brook	Not yet determined	No	Not Applicable
Sudbury River	Not yet determined	Yes	Metals
Unnamed tributaries of the Sudbury River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

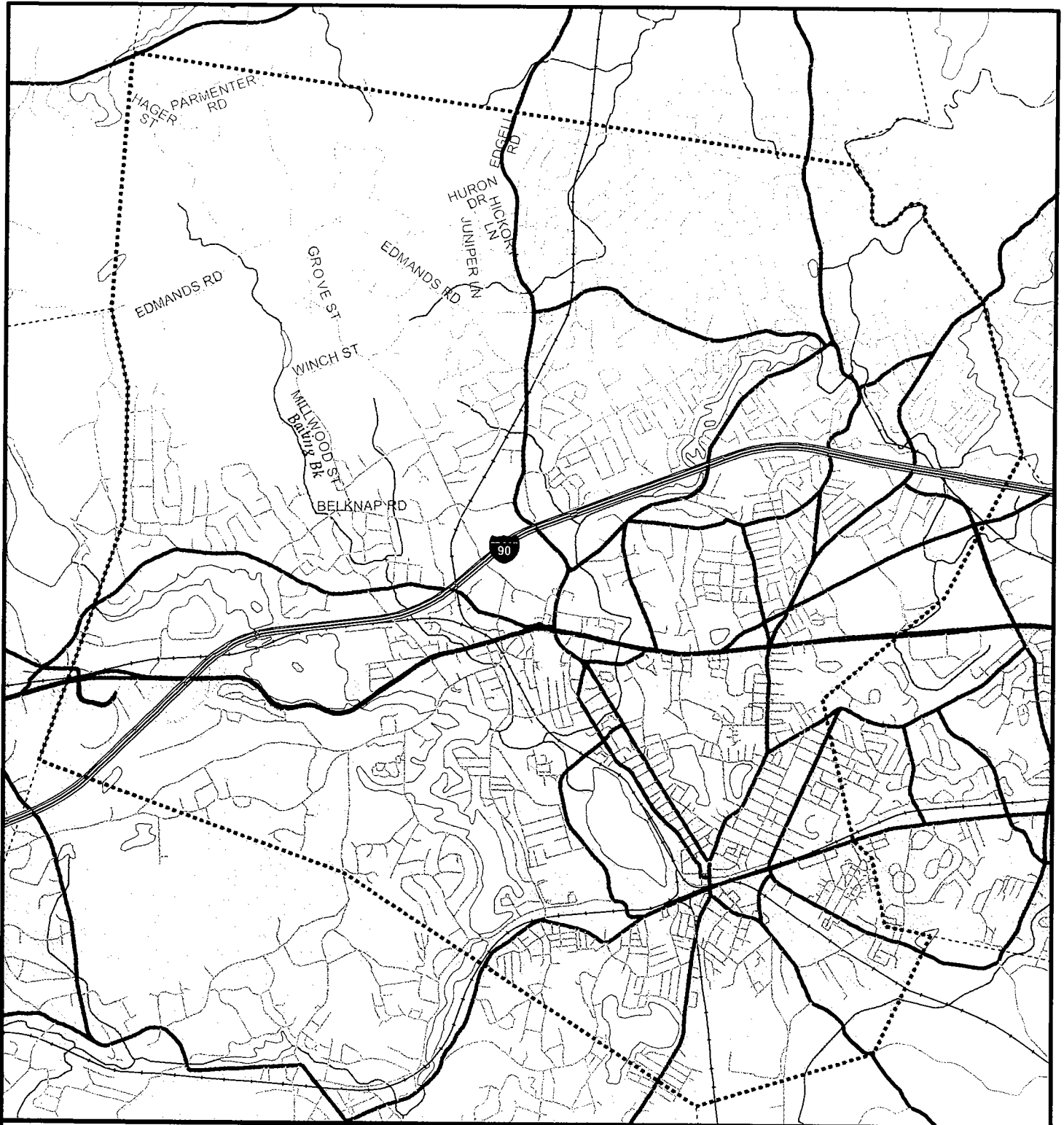
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

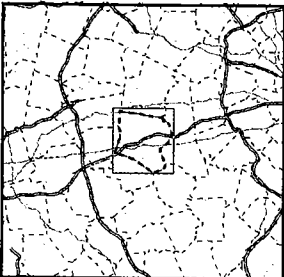
According to the Massachusetts Year 2002 Integrated List of Waters, Sudbury River is designated as "Waters requiring a TMDL". The targeted pollutant is metals. The Stormwater Management Program includes many BMPs to address reduction of contaminants from these





sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



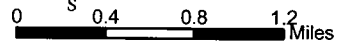
Area of Focus:



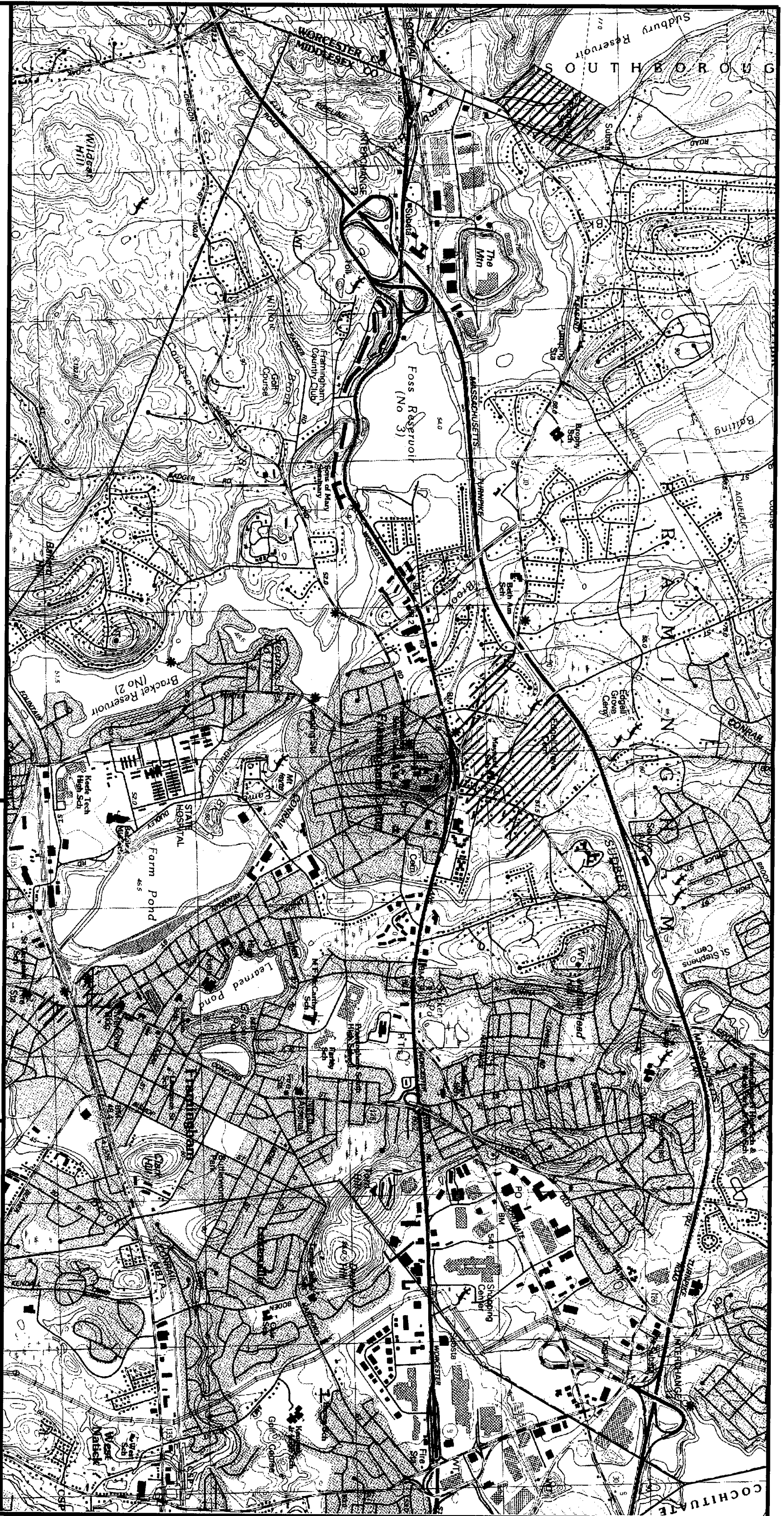
**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas**  
*Framingham, Massachusetts*

 Framingham Town Boundary  
 Regulated Area (2000 Urbanized Area)

Town Population: 66,910  
Regulated Population: 65,804

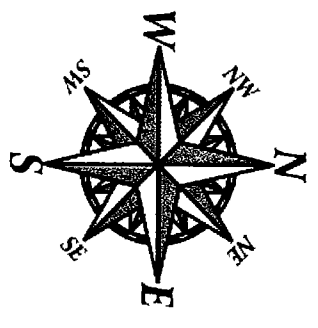


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 10/4/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



BASED ON  
USGS TOPOGRAPHIC MAP FOR  
FRAMINGHAM, MA  
QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY  
FRAMINGHAM, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe&Bond**

JULY 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species; NOT equivalent to Significant Habitat, as designated under Massachusetts Endangered Species Act.  
\* NHESP 1999-2001 Estimated Habitats for Rare Wildlife; For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX R**  
**NATICK, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Natick, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Natick, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Natick Portion)	NA	NA
Interchange Facility	Int. #13	Route 30, Natick, MA 01760
Service Area	8E	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Natick, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Lake Cochituate	Not yet determined	Yes	Priority Organics, Organic Enrichment/Low DO
Norembege Reservoir	Not yet determined	No	Not Applicable
Seaverns Brook	Not yet determined	No	Not Applicable
Charles River	Not yet determined	Yes	Unknown Toxicity, Metals, Nutrients, Organic Enrichment/Low DO, Pathogens, Noxious Aquatic Plants, Turbidity
Unnamed tributaries of the Charles River	Not yet determined	No	Not Applicable
Unnamed tributaries of the Norembege Reservoir	Not yet determined	No	Not Applicable
Unnamed tributaries of Pickerel Pond	Not yet determined	No	Not Applicable
Unnamed tributaries of Lake Cochituate	Not yet determined	No	Not Applicable

## NATICK, MASSACHUSETTS

**Tighe&Bond**

Unnamed tributaries of Nonesuch Pond	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.			

### Best Management Practices

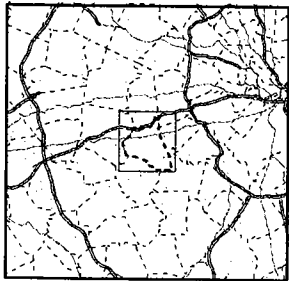
According to the Massachusetts Year 2002 Integrated List of Waters, the City of Natick has two (2) water bodies listed as “Waters requiring a TMDL”. These two (2) water bodies are as follows:

- The targeted pollutants for Lake Cochituate are Priority Organics, Organic Enrichment/Low dissolved oxygen (DO);
- The targeted pollutants for Charles River are Unknown Toxicity, Metals, Nutrients, Organic Enrichment/Low DO, Pathogens, Noxious Aquatic Plants, and Turbidity. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems.


The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:

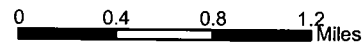
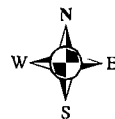


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Natick, Massachusetts***

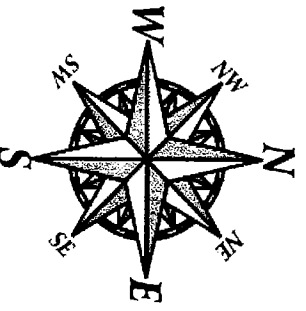
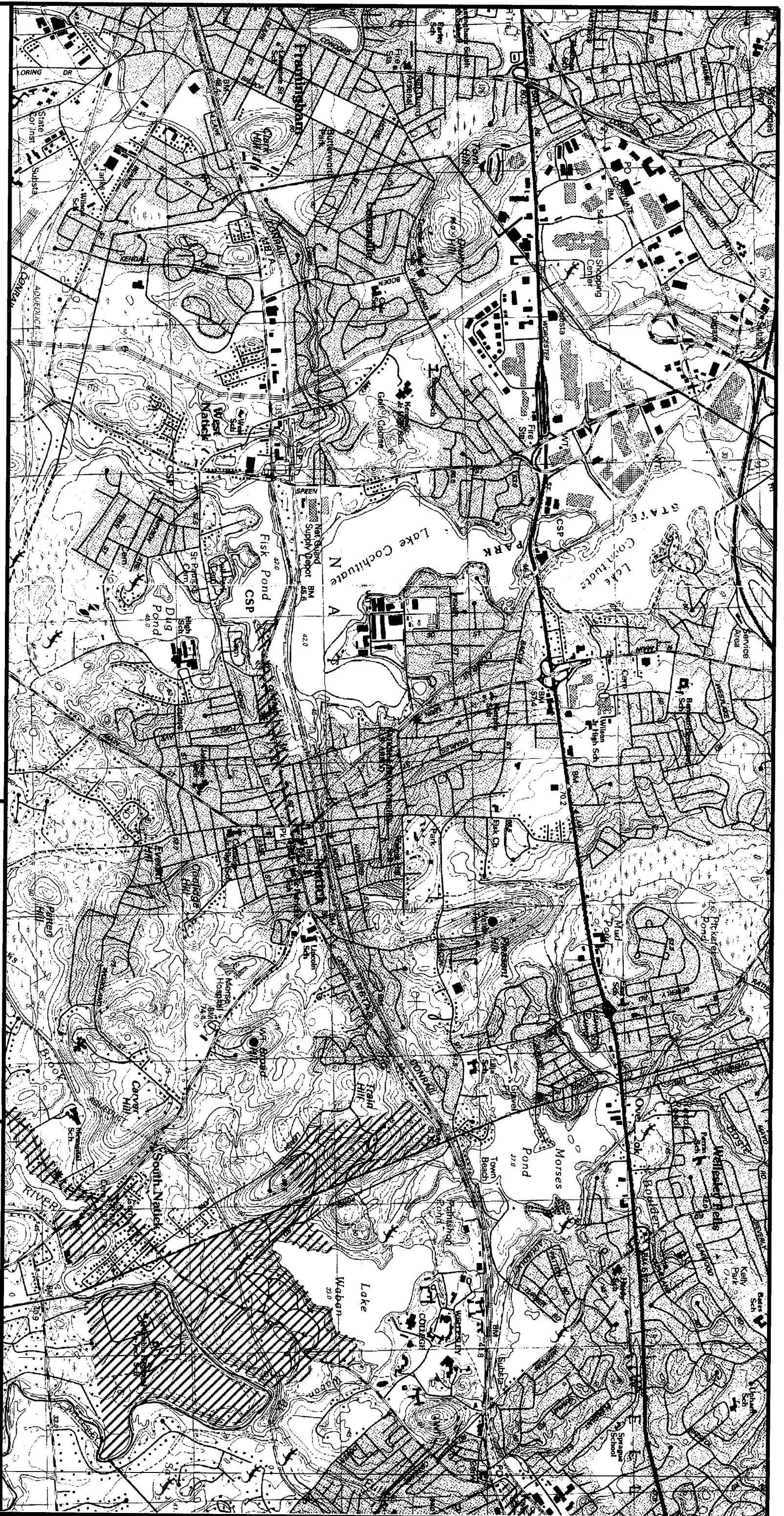
 Natick Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 32,170  
Regulated Population: 31,714



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/14/02; US EPA- New England GIS Center L:\projects\stormwater\phase2\matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species. NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife. For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 FRAMINGHAM, NATICK, MA  
 QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
 NATICK, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**FIGURE 1**  
**SITE LOCUS**

SCALE: 1:25000

**Tighe & Bond**

JULY 2003



**APPENDIX S**  
**WAYLAND, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Wayland, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Wayland, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Wayland Portion)	NA	NA

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Wayland, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Lake Cochituate	Not yet determined	Yes	Priority Organics, Organic Enrichment/Low DO
Snake Brook	Not yet determined	No	Not Applicable
Nonesuch Pond	Not yet determined	No	Not Applicable
Unnamed tributaries of Lake Cochituate	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

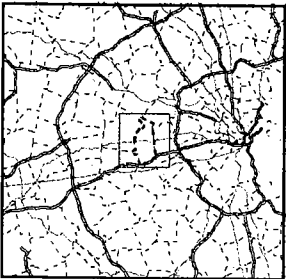
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, Lake Cochituate is listed as "Waters requiring a TMDL". The targeted pollutants for Lake Cochituate are Priority Organics, Organic Enrichment/Low dissolved oxygen (DO). The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.



Area of Focus:



**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Wayland, Massachusetts***

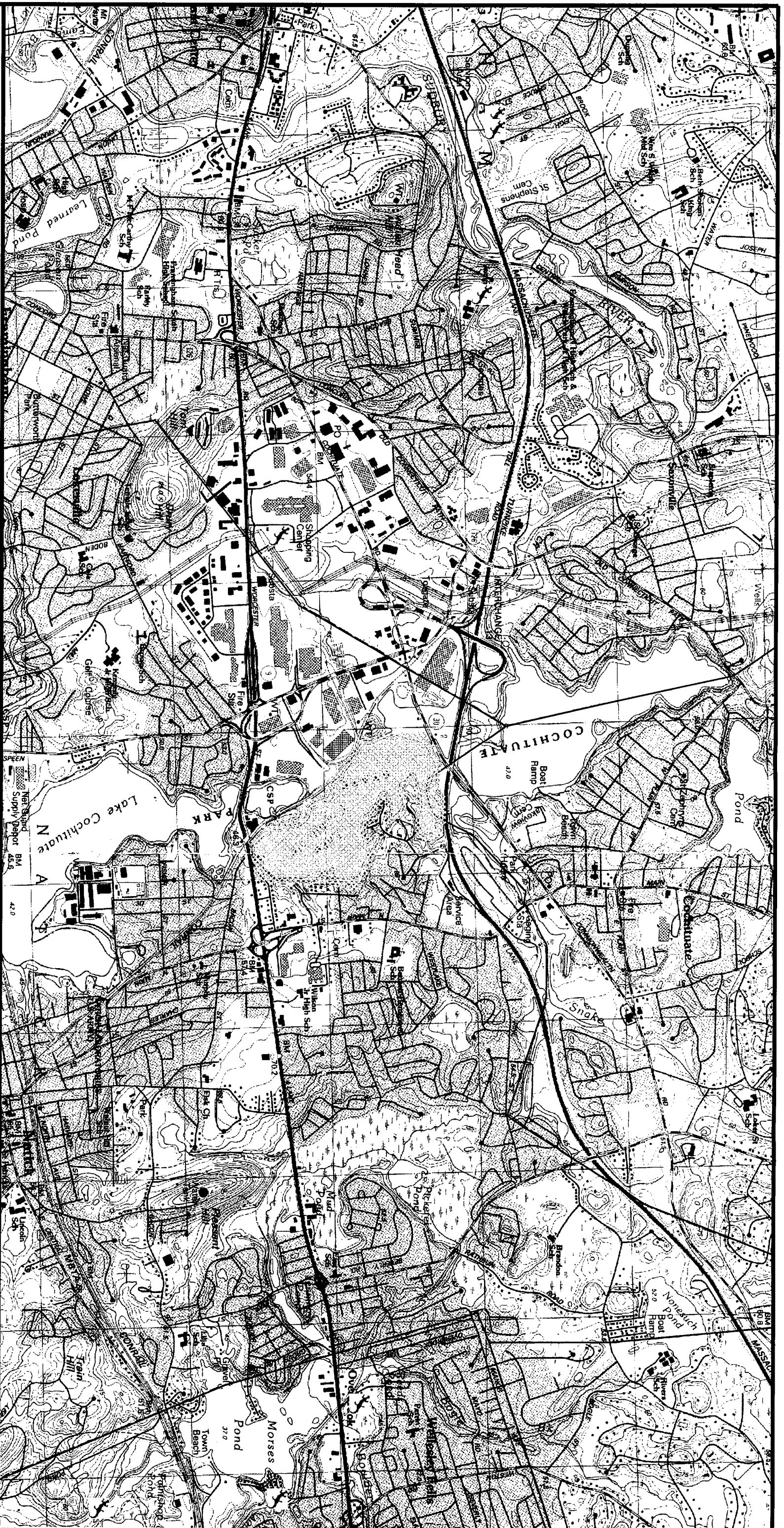
 Wayland Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 13,100  
Regulated Population: 11,792

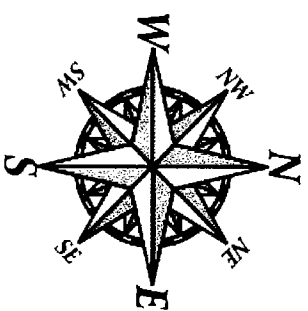


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



BASED ON  
USGS TOPOGRAPHIC MAP FOR  
NATICK, MA  
QUADRANGLE

**FIGURE 1**  
SITE LOCUS

MASSACHUSETTS TURNPIKE AUTHORITY  
WAYLAND, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**Tighe & Bond**

SCALE: 1:25000

JULY 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to 'Significant Habitat' as designated under Massachusetts Endangered Species Act.  
NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

**APPENDIX T**  
**WESTON, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Weston, Massachusetts is listed as a wholly urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Weston, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Weston Portion)	NA	NA
Interchange Facility	Int. #14	60 South Avenue, Weston, MA 02493
Interchange Facility	Int. #15	12 Riverside Road, Weston, MA 02493
Maintenance Depot	M-6	668 South Avenue, Weston, MA 02493
Engineering Office	Div-III	668 South Avenue, Weston, MA 02493
State Police Barracks	NA	668 South Avenue, Weston, MA 02493

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Weston, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Cherry Brook	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, There are no water bodies that receive storm water discharges from the Massachusetts Turnpike Authority, that are subject to a Total Maximum Daily Load (TMDL) Limit in the City of Weston. See Section 5 of this submittal for the Best Management Practices (BMP's) to be implemented by the Massachusetts Turnpike Authority. Section 6 of this submittal contains an implementation time frame table for these BMP's.



Area of Focus:



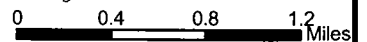
**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas**  
*Weston, Massachusetts*



Weston Town Boundary

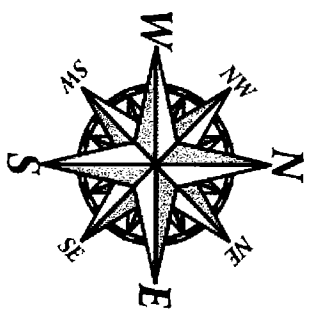
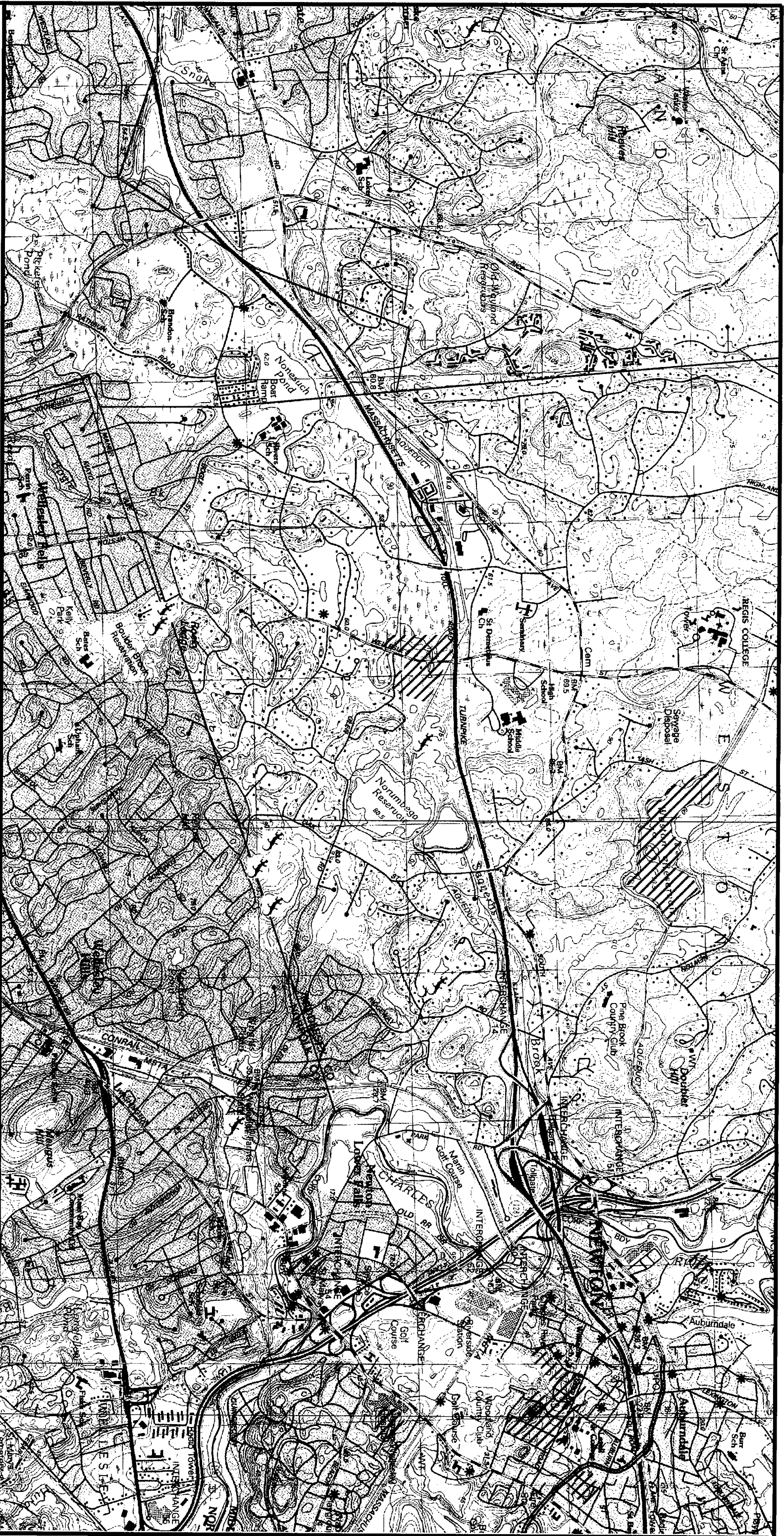
Regulated Area (2000 Urbanized Area)

Town Population: 11,469  
Regulated Population: 11,469



Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/





**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to Significant Habitat, as designated under Massachusetts Endangered Species Act.  
 \* NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 NATICK, MA  
 QUADRANGLE

**FIGURE 1**  
 SITE LOCUS

MASSACHUSETTS TURNPIKE AUTHORITY  
 WESTON, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JUL Y 2003

**APPENDIX U**  
**UPTON, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Upton, Massachusetts is listed as a partially urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

### Regulated Entities

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Upton, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Upton Portion)	NA	NA

### Receiving Streams/Outfalls/Impairments

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Upton, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

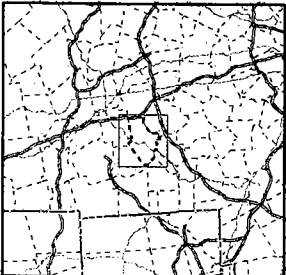
Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.

### Best Management Practices

According to the Massachusetts Year 2002 Integrated List of Waters, There are no water bodies that receive storm water discharges from the Massachusetts Turnpike Authority, that are subject to a Total Maximum Daily Load (TMDL) Limit in the City of Upton. See Section 5 of this submittal for the Best Management Practices (BMP's) to be implemented by the Massachusetts Turnpike Authority. Section 6 of this submittal contains an implementation time frame table for these BMP's.




Area of Focus:

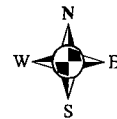


NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas  
*Upton, Massachusetts*

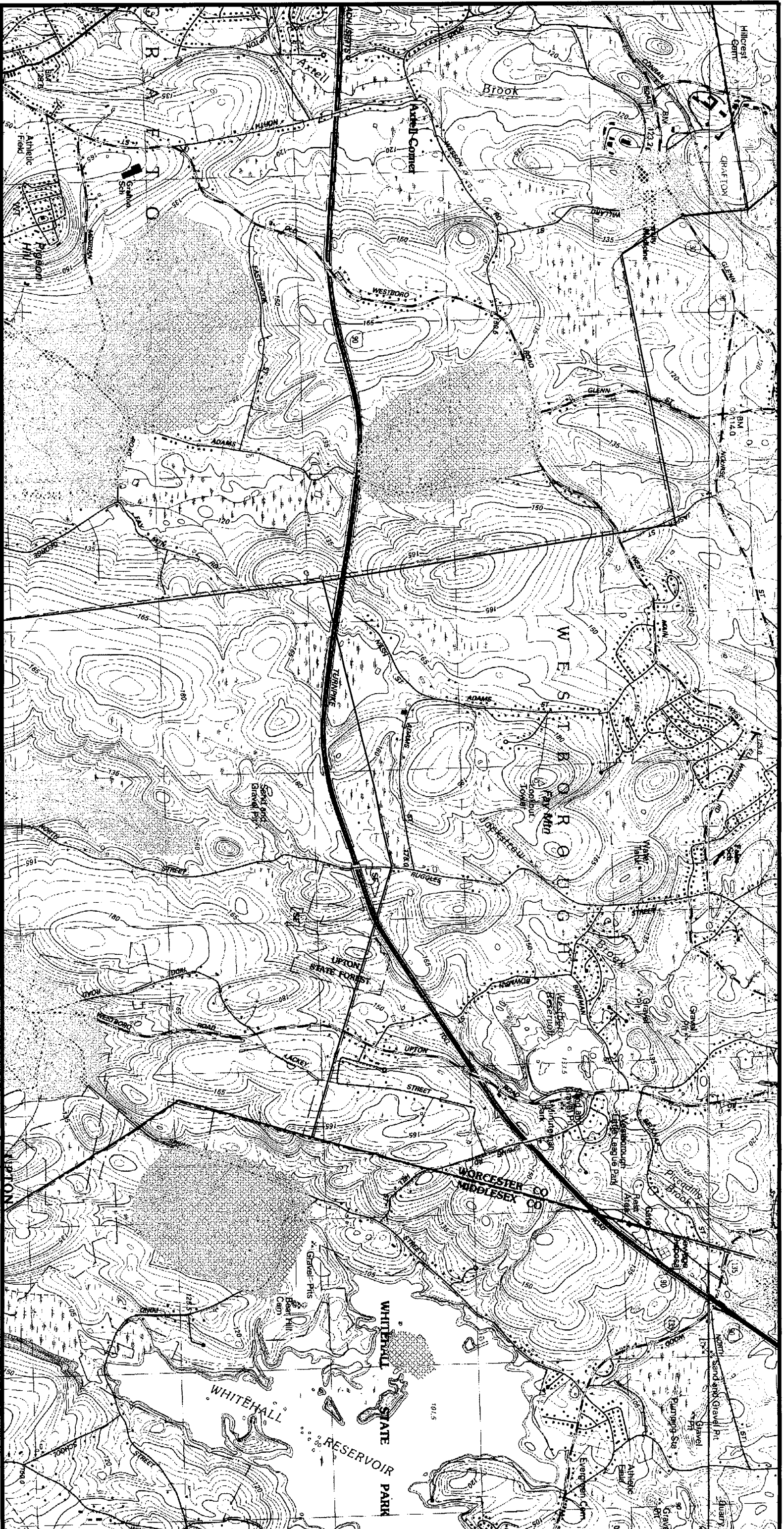
 Upton Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 5,642  
Regulated Population: 2,623

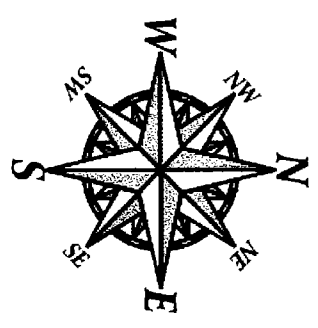


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/25/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



**FIGURE 1**  
**SITE LOCUS**

BASED ON  
USGS TOPOGRAPHIC MAP FOR  
MILLFORD, MA  
QUADRANGLE

MASSACHUSETTS TURNPIKE AUTHORITY  
UPTON, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to "Significant Habitat" as designated under Massachusetts Endangered Species Act.  
\* NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).

SCALE: 1:25000

**Tighe & Bond**

JULY 2003

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**APPENDIX V**

**NEWTON/BOSTON, MASSACHUSETTS**

Based on Urbanized Areas calculated from the 2000 Census and the 1990 Census, Newton/Boston, Massachusetts is listed as a wholly urbanized area. The Municipal Separate Storm Sewer Systems (MS4's) of this town is automatically designated as being regulated by NPDES Phase II. The Massachusetts Turnpike Authority operates within this MS4 and, therefore, must comply within the Urbanized Area.

**Regulated Entities**

Regulated entities, operated by the Massachusetts Turnpike Authority, located within Newton/Boston, Massachusetts include the following:

Facility Type	Nomenclature	Facility Address
Massachusetts Turnpike (Newton/Boston Portion)	NA	NA
Maintenance Depot	M-8	370 D Street, South Boston, MA 02127
Maintenance Depot	NA	Unavailable
Administration Building	NA	145 Harve Street, East Boston, MA 02128
Storm Water Pump Station	SW #3	1 West Sixth Street, South Boston, MA 02127
Storm Water Pump Station	SW #4	D Street, South Boston, MA 02127
Storm Water Pump Station	SW #5	Harborside Drive, East Boston, MA 02128
Storm Water Pump Stations - Central Artery	NA	Unknown at this time
State Police Barracks	NA	145 London Street, East Boston, MA 02128
Toll Administration Office	NA	145 London Street, East Boston, MA 02128
Interchange 18, 19, 20	NA	Boston, MA 02128
Callahan Tunnel Vent Building	NA	89 London Street, East Boston, MA 02128
Sumner Tunnel Vent Building	NA	55 Liverpool Street, East Boston, MA 02128
Callahan Tunnel Vent Building	NA	201 North Street, Boston, MA 02109
Sumner Tunnel Vent Building	NA	328 North Street, Boston, MA 02109

Ted Williams Tunnel Toll Plaza	ERS-1	Harborside Drive, East Boston, MA 02127
Ted Williams Tunnel Toll Plaza	ERS-2	100 Massport Haul Road, South Boston, MA 02127
Ted Williams Tunnel Vent Building #6	NA	2 FID Kennedy Drive, South Boston, MA 02127
Central Artery Northbound Tunnel	NA	Not Applicable
Operations Control Center (OCC)	NA	50 Massport Haul Road, South Boston, 02127
<p><b>Note:</b> Due to the nature of the construction activities associated with the Central Artery Tunnel additional facilities will be in operation within one to three years. Those facilities are not made a part of this list.</p>		

**Receiving Streams/Outfalls/Impairments**

Outfalls have not yet been determined. The Massachusetts Turnpike Authority is proposing to identify and map these outfalls during the duration of this permit. Receiving streams located along the Massachusetts Turnpike (Interstate 90) in Newton/Boston, Massachusetts that are currently known to receive storm water discharges from the MS4 are as follows:

Receiving Stream	No. of Outfalls	Listed as Impaired	Impairment
Charles River	Not yet determined	Yes	Cause Unknown, Unknown Toxicity, Priority Organics, Metals, Nutrients, Organic Enrichment/Low DO, Pathogens, Oil & Grease, Taste, Odor and Color, Noxious Aquatic Plants, Turbidity
Muddy River	Not yet determined	Yes	Priority Organics, Metals, Nutrients, Siltation, Organic Enrichment/Low DO, Pathogens, Oil & Grease, Taste, Odor and Color
Boston Inner Harbor	Not yet determined	Yes	Priority Organics, Pathogens
Fort Point Channel	Not yet determined	No	Not Applicable
Unnamed tributaries of the Charles River	Not yet determined	No	Not Applicable
Unnamed isolated ponds, wetlands, and streams	Not yet determined	No	Not Applicable

Note: Waters were identified using USGS topographic quadrangles as the standard. Unnamed waters were given a designation that indicates where the water goes, using the first named water downstream.



**Best Management Practices**

According to the Massachusetts Year 2002 Integrated List of Waters, the Cities of Newton/Boston have three (3) water bodies listed as "Waters requiring a TMDL". These three (3) water bodies are as follows:

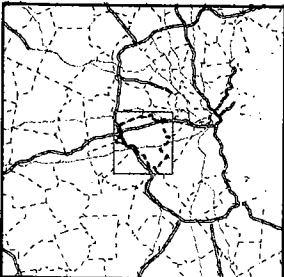
- The targeted pollutants for Charles River are Unknown Toxicity, Metals, Nutrients, Organic Enrichment/Low DO, Pathogens, Noxious Aquatic Plants, and Turbidity. Sources of these pollutants may include but are not limited to: lawn care products, improper handling of yard wastes, pet waste, illicit sewer discharges, construction activities, and failing septic systems;
- The targeted pollutants for Muddy River are Priority Organics, Metals, Nutrients, Siltation, Organic Enrichment/Low DO, Pathogens, Oil & Grease, Taste, Odor and Color. Sources of priority organics may include but are not limited to: road surfaces, inadequate fueling areas or practices, illegal dumping. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems.
- The targeted pollutants for Boston Inner Harbor are Priority Organics and Pathogens. Sources of priority organics may include but are not limited to: road surfaces, inadequate fueling areas or practices, illegal dumping. Sources of pathogens may include but are not limited to: pet waste, winter road maintenance materials, illicit sewer discharges, and failing septic systems.

The Stormwater Management Program includes many BMPs to address reduction of contaminants from these sources under all Six (6) Minimum Control categories. The City will implement these BMPs under the responsible department and timeframes as previously described.

J:\M\0270\MSGP-MS4\MS4\APPENDIXTEXT.DOC



Area of Focus:

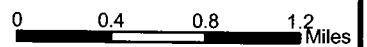


**NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas**  
*Newton, Massachusetts*

 Newton Town Boundary

 Regulated Area (2000 Urbanized Area)

Town Population: 83,829  
Regulated Population: 83,810

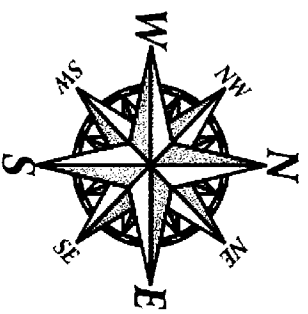


Data Sources: Urbanized Areas from US Census Bureau (2000). Political boundaries from MassGIS. Hydrography from NHD. Transportation data from GDT at 1:24,000. Map Created: 11/15/02; US EPA- New England GIS Center L:/projects/stormwater/phase2/matowns/new/



**LEGEND:**

- \* State Registry of Historic Places 1999-2001 (Points)
- State Registry of Historic Places 1999-2001 (Areas)
- NHESP 1999-2001 Massachusetts Certified Vernal Pools
- NHESP 1999-2001 Priority Habitats for State-Protected Rare Species and Estimated Habitats for Rare Wildlife \*
- Town Boundary



**FIGURE 1**  
**SITE LOCUS**

BASED ON  
USGS TOPOGRAPHIC MAP FOR  
NEWTON, MA  
QUADRANGLE

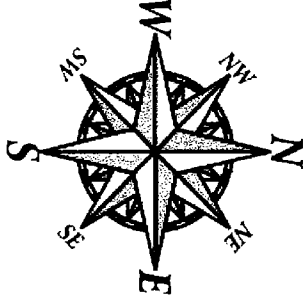
MASSACHUSETTS TURNPIKE AUTHORITY  
NEWTON, MASSACHUSETTS  
NPDES STORM WATER PERMITTING  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

**Tighe & Bond**

SCALE: 1:25000

JULY 2003

\* NHESP 1999-2001 Priority Habitats for State-Protected Rare Species: NOT equivalent to 'Significant Habitat' as designated under Massachusetts Endangered Species Act.  
NHESP 1999-2001 Estimated Habitats for Rare Wildlife: For Use with the MA Wetlands Protection Act Regulations (310 CMR 10).



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BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 SOUTH BOSTON, MA  
 QUADRANGLE

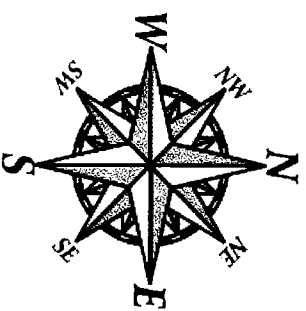
**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY,  
 BOSTON, MASSACHUSETTS  
 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

SCALE: 1:25000

**Tighe & Bond**

JULY 2003



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BASED ON  
 USGS TOPOGRAPHIC MAP FOR  
 SOUTH BOSTON, MA  
 QUADRANGLE

**FIGURE 1**  
**SITE LOCUS**

MASSACHUSETTS TURNPIKE AUTHORITY,  
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 NPDES STORM WATER PERMITTING  
 SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM

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**Tighe & Bond**

JULY 2003