Department of Conservation and Recreation (DCR)

NPDES Storm Water Management Plan for

Coverage Under the National Pollutant Discharge Elimination System (NPDES)

General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)

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NPDES Storm Water Management Plan for DCR Owned and Operated Facilities

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.[1,2]

Stephen H. Burrington, Commissioner

Stephen H. Burrington 10/20/05

Signature Date

[1] EPA's Response to Comments document for this general permit indicates that in regards to the Endangered Species Act, this certification "*should be based on the permittee's knowledge at the time of submission of the Notice of Intent (NOI). MS4 operators should make determinations based on current information. As a permittee implements its storm water management program, new information regarding locations of outfalls may become available. As the new information becomes available, the permittee may need to reevaluate the ESA certification criterion to ensure that permit eligibility with regards to ESA is maintained.*" DCR is not currently aware of any discharges that are impacting federal or state-listed endangered species habitat. As discussed in Section 3.0 of this Storm Water Management Plan, as discharges are identified during the permit, they will be reviewed for compliance with the endangered species programs.

[2] EPA's Response to Comments document also indicates that regarding the National Historic Preservation Act (NHPA) the permittee "*should submit the NOI based on the best information available at the time of submission. As the program develops new information may become available. As the new information becomes available, the permittee may need to reevaluate the National Historic Preservation Act (NHPA) certification to ensure that permit eligibility with regard to NHPA is maintained.*" DCR is not currently aware of any discharges that are impacting places listed or eligible for listing on the national Register of Historic Places. As discussed in Section 3.0 of this Storm Water Management Plan, as discharges are identified during the permit, they will be reviewed for compliance with NHPA.

1.0 INTRODUCTION

The Department of Conservation and Recreation (DCR) is committed to maintaining the important recreational, historical and water resources available to the people of Massachusetts at DCR parks, reservations, forest, beaches, rinks, pools and parkways. DCR understand the importance of storm water to all of these facilities and the threat of pollution from storm water and erosion. To ensure that DCR is taking all measures necessary to address these threats, they have produced the following Storm Water Management Plan (SWMP) and associated Notice of Intent (NOI) to fully comply with the National Pollutant Discharge Elimination System (NPDES) Phase II General Permit for Municipal Separate Storm Sewer Systems (MS4s). The plan outlines the many existing programs currently employed by DCR to address storm water and the additional programs which will be implemented in the next three years.

1.1 Department Organization

The Department of Conservation and Recreation (DCR) was created in July 2003 when the legislature merged the Metropolitan District Commission (MDC) and the Department of Environmental Management (DEM). DCR now includes four main divisions – the Division of Urban Parks and Recreation, Division of State Parks and Recreation, the Division of Water Supply and the Division of Planning and Engineering. DCR's organizational set-up is summarized in Figure 1 DCR Organizational Chart and described below.

The **Division of State Parks and Recreation** (DCRS) maintains nearly 300,000 acres of the state's forests, beaches, mountains, ponds, riverbanks, trails, and parks outside of the Greater Boston area. The Division protects land and resources on privately and municipally held land through technical assistance, grant and planning programs, policy development, and other services.

The **Division of Urban Parks and Recreation** (DCRU) has broad management responsibilities for the preservation, maintenance, and enhancement of the natural, scenic, historic, and aesthetic qualities of the environment within the Greater Boston area.

The **Division of Water Supply Protection** (DCRW) manages and protects the drinking water supply watersheds for Greater Boston. The Division provides technical support to other state agencies, monitors lakes and ponds, dam safety, well drillers, and rainfall throughout the state. The Division is made up of two sections - the **Office of Watershed Management** manages and protects the drinking water supply watersheds for approximately 2.2 million residents of Massachusetts, primarily in Greater Boston. The Quabbin Reservoir, Ware River, and Wachusett Reservoir watersheds are the sources of drinking water for distribution by the Massachusetts Water Resources Authority (MWRA). The Office also manages and protects the Sudbury

Reservoir system, which is the reserve drinking water supply for Greater Boston. The **Office of Water Resources** promotes water quality and conservation through several functions.

The **Division of Planning and Engineering** provides professional planning, engineering, design and construction management services in support of DCR's state parks and forests, urban parks and reservations, and water supply divisions.

The Department's facilities are comprised of urban, suburban and rural open space; forests; parks; reservations; recreational facilities; waterways; parkways; water bodies; and coastlines that are managed and maintained on behalf of the public for the purposes of natural, historic, and cultural resource protection, sustainable recreation, and education.

1.2 NPDES Phase II Storm Water Regulations

The U.S. Environmental Protection Agency (EPA) published the regulation entitled "National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule" on December 8, 1999 in the Federal Register. This program is often referred to as the National Pollutant Discharge Elimination System (NPDES) Phase II program.

Under the Phase II regulations [40 CFR Parts 9, 122, 123, and 124:], portions of the drainage systems owned and operated by DCR meet the definition of a regulated Municipal Separate Storm Sewer Systems (MS4s). According to 40 CFR 122.26(b)(8), "municipal separate storm sewer" is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

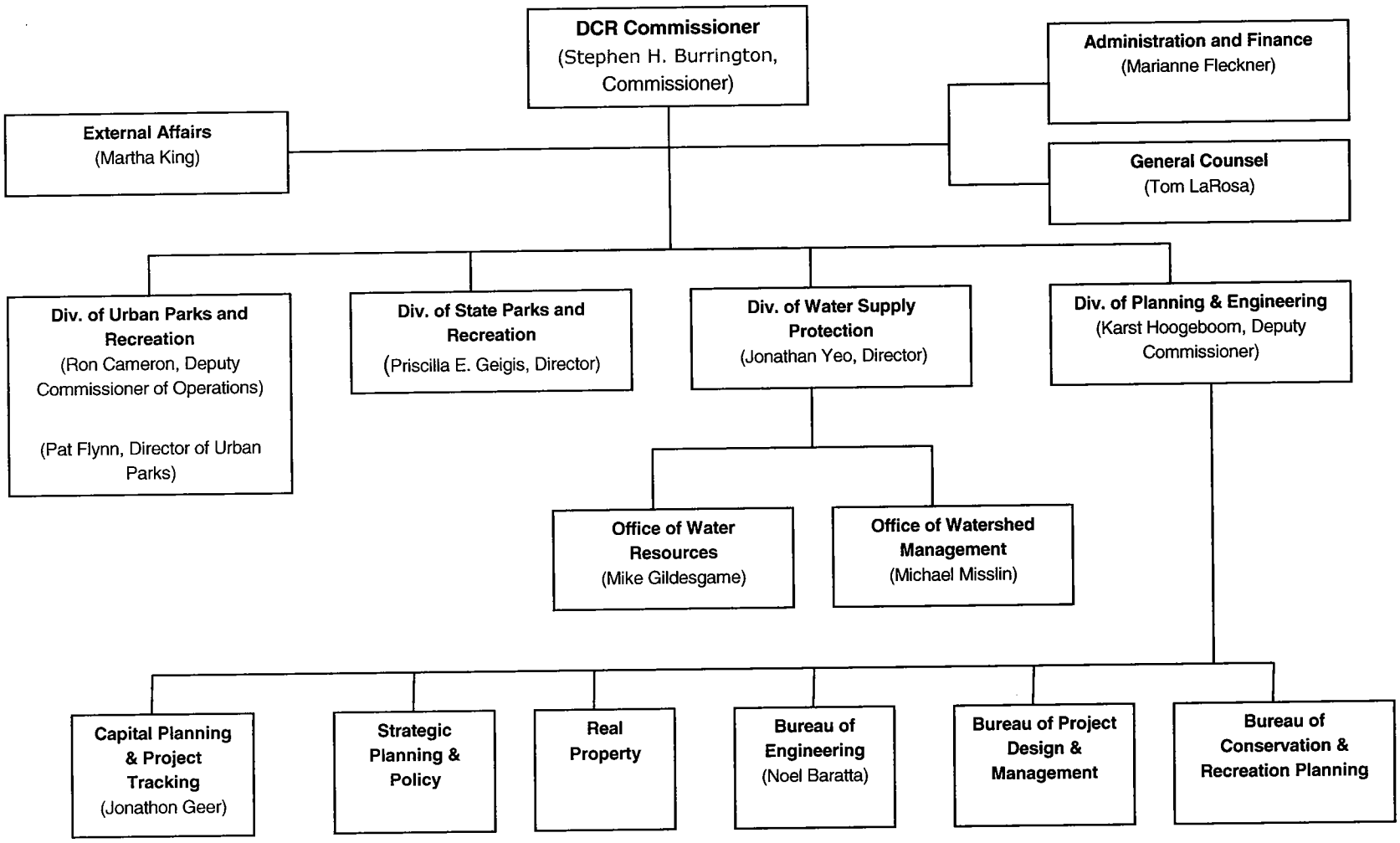
(i) "Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States;

(ii) Designed or used for collecting or conveying storm water;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

Figure 1 DCR Organizational Chart



Federal and State-operated small MS4s can include universities, prisons, hospitals, roads (i.e. departments of transportation), military bases (e.g. State Army National Guard), parks and office buildings/complexes.

Operators of regulated small MS4s are required to:

- Apply for National Pollutant Discharge Elimination System (NPDES) permit coverage;
- Develop a storm water management program which includes the six minimum control measures;
- Implement the storm water management program using appropriate storm water management controls, or "best management practices" (BMPs), by the end of the permit term (typically 5 years);
- Develop measurable goals for the program; and
- Periodically evaluate effectiveness of the program.

EPA Region 1 developed a "NPDES General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems". The permit was issued in the Federal Register on May 1, 2003 with a five year permit term ending May 1, 2008. In Massachusetts, the general permit has been issued jointly by EPA and the Massachusetts Department of Environmental Protection (DEP). The permit is issued as a NPDES permit under the Federal Clean Water Act by EPA and as a state Section 401 Water Quality Certification for MA DEP.

In recognition of the differences between federal or state-operated MS4 versus their municipal counterparts, the general permit includes separate requirements for Massachusetts Small MS4s, New Hampshire Small MS4s (including Indian Lands in MA, CT and RI), Non-Traditional MS4s (e.g., schools, prisons, hospitals) and Transportation MS4 owners. The Storm Water Management Program described in this document has been prepared to comply with the overall general permit and specifically Part IV - Non-Traditional Small MS4s and Part V - Transportation MS4 Storm Water Management Programs. MS4s within DCR parks, reservations, beaches, forests and other facilities in urbanized areas are subject to Part IV Non-Traditional Small MS4s. While MS4s within parkways and roadways in urbanized areas are covered by Part V.

In March of 2003, the Division of State Parks and Recreation (DEM at that time) submitted individual NOIs for ten state parks including:

1. Robinson State Park
2. Nickerson State Park
3. Myles Standish State Forest
4. Walden Pond State Reservation
5. Fall River Heritage State Park
6. Mt. Greylock State Reservation
7. Pilgrim Memorial State Park
8. Salisbury Beach State Reservation
9. Scusset Beach State Reservation
10. Quinsigamond State Park.

These submissions were reviewed by EPA and EPA authorized DCR to discharge storm water from the small MS4s serving these ten facilities in accordance with the provisions of the small MS$ General Permit. Once EPA issues authorization to discharge storm water in response to this Notice of Intent (NOI), the new authorization will supersede the individual facility authorizations.

The Division of Urban Parks and Recreation (the MDC at that time) submitted a NOI regarding its facilities within urbanized areas in July of 2003. EPA, in their August 23, 2004 letter regarding the NOI submittal, requested additional information and changes to the NOI. Instead of revising the MDC NOI, DCR has developed this comprehensive SWMP/ NOI to address all facilities owned and operated by DCR, including those of the former MDC.

As requested by EPA in their May 12, 2005 letter, DCR is submitting a comprehensive Notice of Intent (NOI) in order to seek coverage by the general permit for all of its regulated MS4s within urbanized areas. DCR currently implements many practices, policies, guidelines and programs that relate to pollution prevention and storm water management. This SWMP will outline each of these ongoing activities and discuss future activities, which will be implemented in the permit term. The program will cover all of the department's parkways and facilities within the urbanized areas.

1.3 Parkways and Facilities within Urbanized Areas

EPA has required that all regulated separate storm sewer system within urbanized areas owned and operated by DCR must be included in the SWMP. "Urbanized Area" is defined as a land area comprising one or more places —central place(s) — and the adjacent densely settled surrounding area — urban fringe — that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. The urbanized area (UA) designation is based on the results of the latest census – the 2000 Census for this permit.

Table 1 and Figure 2 summarize the facilities and parkways which are located entirely or partially within urbanized areas and include small MS4 systems and are therefore subject to the NPDES Phase II permit. These determinations were made based on the urbanized area GIS datalayers provided by EPA and DCR datalayers/databases indicating land owned and operated by the Department.

Table 1 DCR Parkways and Facilities in Urbanized Areas and Served by MS4s

(Subject to the General Permit)

State Forests	
Lowell-Dracut-Tyngsboro State Forest	Shawme-Crowell State Forest (Bourne, Sandwich)
Parks/Reservations	
Abigail Adams State Park (Weymouth)	Alewife Brook Reservation (Arlington, Belmont, Cambridge, Somerville)
Amelia Earhart Dam (Somerville)	Ames Nowell State Park (Abington)
Ashland State Park	Back River Reservation/Stodder's Neck (Hingham, Weymouth)
Blackstone River & Canal HSP (Blackstone, Millville, Northbridge, Uxbridge)	Blue Hills Reservation (Incl. Trailside Museum) (Braintree, Canton, Milton, Quincy, Randolph)
Breakheart Reservation (Saugus, Wakefield)	Brighton Upper Basin Facility
Bristol Blake State Park (Norfolk)	Buffumville State Park
Cannalouga Park (Watertown)	Canton Airport (Active remediation plans) (Canton)
Carson Beach (Boston)	Charles River Reservation (Medfield)
Charles River Reservation, Lower Basin (Boston, Cambridge)	Charles River Reservation, New Basin (Boston, Cambridge)
Charles River Reservation, Upper Basin (Boston, Cambridge, Brighton, Watertown)	Charlesbank Park (Boston)
Christian A. Herter Park (Boston)	City Point Beach (Boston)
City Square Park (Charlestown)	Cochituate State Park (Framingham, Natick, Sherborn, Wayland)
Columbia Road Park (Boston)	Dorchester Shore Reservation (Incl. Malibu, Tenean and Savin Hill Beaches)
Doyle Playground (Boston)	Draw Seven Park (Somerville)
Dugger Park (Medford)	Dunn Pond State Park (Gardner)
Fall River Heritage State Park	Fellsmere Park (Malden)
Five College Bikeway (Northampton)	Fort Phoenix State Reservation (Fairhaven)
Foss Park (Somerville - Fellsway)	Fowl Meadow, Hp (Dedham, Milton)
Great Falls Discovery Center (Turner Falls)	Greenwood Park (Stoneham)
Greycourt State Park (Methuen)	Hammond Pond Reservation (Newton)
Hampton Ponds State Park (Westfield)	Holyoke Heritage State Park (Holyoke)
Houghton's Pond Recreation Area (Milton)	Indian Line Farm (Active remediation plans) (Canton)
Jordan Marsh Service Center Area (served by Cmdr. Shea Blvd) (Quincy)	Landry Park (Waltham)
Lawrence Riverfront State Park	Leo J. Martin Memorial Golf Course (Weston)
Lowell Heritage State Park	Lowell Park (Cambridge)
Lower Neponset River Trail (Dorchester, Milton)	Lynn - Nahant Beach
Lynn Heritage State Park	Lynn Shore Reservation
Martini Shell (Hyde Park)	Medford Boat Club (Arlington)
Middlesex Fells Reservations (Malden, Medford, Melrose, Stoneham, Winchester)	Mother Brook Reservation (Boston, Dedham)
Moynihan Park (Hyde Park)	Msgr. John B. Condon Shell (Medford)

Table 1 DCR Parkways and Facilities in Urbanized Areas and Served by MS4s (Continued)

Parks/Reservations (Continued)	
Mystic Lakes Reservation (Medford, Winchester)	Mystic River Reservation (Arlington, Everett, Medford, Somerville)
Nashua Street Park (Boston)	Neponset River Reservation (Boston, Canton, Dedham, Milton)
New Charles River Dam (Boston)	Nickerson State Park (Brewster, Orleans)
North Point Park (Cambridge)	Oak Island Boat Ramp (Shrewsbury)
Paul Revere Park (Charlestown)	Pleasure Bay Beach (Boston)
Ponkapoag Golf Course (Canton)	Pope John Paul II Park (Dorchester)
Quincy Shore Reservation (Incl. Caddy Park, Wollaston Beach) (Quincy)	Quinsigamond State Park (Shrewsbury, Worcester)
Red Rock Park (Lynn)	Revere Beach Reservation (Revere)
Riverwalk Park (Waltham)	Robinson State Park (Agawam, West Springfield, Westfield)
Ryan Field (Mattapan)	Sandy Beach (Winchester)
Short Beach (Revere, Winthrop)	South Watuppa Boat Ramp (Fall River)
Squantum Point Park (Quincy)	State Fish Pier (Gloucester)
Stillwater Farm (Sterling)	Stony Brook Reservation (Incl. Thompson Center) (Boston, Dedham)
Teddy Ebersol - Lederman Field (Boston)	Tully Lake Recreation Area (Royalston)
Ventura Playground (Dorchester)	Wachusett State Park (Princeton)
Willis Fishing Pier (Lynn)	Winthrop Shore Reservation
Parkways/Roads	
Agassiz Road (Boston)	Alewife Brook- Concord Ave Rotary (Cambridge)
Alewife Brook Parkway (Cambridge, Somerville)	Arborway (Boston)
Arlington Road (Brookline)	Arlington Street (Medford)
Arsenal Street (Watertown)	Austin Street (Boston, Cambridge)
Babe Ruth Park Drive (Boston)	Beach Street (Medford)
Beacon Street (Boston)	Bellevue Hill Road (Boston)
Berkeley Street (Boston)	Birmingham Parkway (Boston)
Blue Hill River Road (Canton, Milton)	Blue Hill Street (Canton)
Blue Hills Parkway (Milton)	Boston University Bridge (Boston, Cambridge)
Boulevard Road (Wellesley)	Boundary Road (Malden)
Boylston Street (Boston)	Broad Sound Avenue (Revere)
Broadway (Chelsea, Revere)	Broadway (Everett)
Brook Road (Milton)	Brookline Avenue (Boston)
Brookline Street (Cambridge)	Brooks Street (Boston)
Brush Hill Road (Milton)	Bunker Hill Lane (Quincy)
Cambridge Parkway (Cambridge)	Cambridge Parkway Connector (Cambridge)
Cambridge Street (Boston)	Carroll Parkway (Highway) (Lynn)
Casassa Overpass (Revere)	Centre Street (Boston)
Charles Greenough Boulevard (Watertown)	Charles River Dam Road (Boston, Cambridge)

Table 1 DCR Parkways and Facilities in Urbanized Areas and Served by MS4s (Continued)

Parkways/Roads (Continued)	
Charles River Road (Watertown)	Charles Street (Boston)
Charlesgate East (Boston)	Charlesgate Overpass (Boston)
Charlesgate West (Boston)	Charlestown Avenue (Cambridge)
Chestnut Hill Driveway (Boston)	Chestnut Street (Boston)
Chickatawbut Road (Braintree, Milton, Quincy)	Columbia Road (Boston)
Commandant'S Way (Chelsea)	Commercial Avenue (Cambridge)
Commonwealth Avenue (Boston)	Concord Avenue (Cambridge)
Connector Mystic Valley Parkway (Medford)	Connector To Eliot Bridge (Cambridge)
Constitution Beach Road (Boston)	Crowell State Forest Road (Sandwich)
Dam Road (Southborough)	David G Mugar Way (Boston)
Day Boulevard Extension (Boston)	Dedham Boulevard (Boston, Dedham)
Deer Park Road (Brewster)	Earhart Dam Road (Everett)
East Border Road (Malden, Medford)	East Broadway (Boston)
Eastern Avenue (Lynn)	Edwin H. Land Boulevard (Cambridge)
Eliot Bridge (Watertown, Brighton)	Elm Road (Saugus)
Elm Street (Medford)	Elm Street (Saugus, Wakefield)
Embankment Road (Boston)	Enneking Parkway (Boston)
Enneking Parkway Branch (Boston)	Everett Street (Boston)
Fellsway (Malden, Medford, Somerville, Stoneham)	Fellsway East (Malden, Melrose, Stoneham)
Fellsway West (Malden, Medford, Somerville, Stoneham)	Fenway (Boston)
Fenway Connector To Park Drive (Boston)	First Street (Cambridge)
Forest Grove Road (Waltham)	Forest Street (Saugus)
Fresh Pond Parkway (Cambridge)	Furnace Brook Parkway (Quincy)
Gallivan Boulevard (Boston)	Green Street (Canton, Milton)
Greenough Boulevard (Cambridge, Watertown)	Grove Street (Watertown)
Grove Street Extension (Watertown)	Hammond Pond Parkway (Brookline, Newton)
Harvard Avenue (Arlington, Medford)	Hawthorn Street (Cambridge)
Hayden Street (Quincy)	Hemlock Road (Saugus, Wakefield)
High Street (Medford)	Highland Avenue (Malden, Medford)
Hillcrest Parkway (Winchester)	Hillside Street (Canton, Milton)
Hull Shore Drive (Hull)	Humphrey Street (Swampscott)
Hyde Park Avenue (Boston)	Jamaicaway (Boston)
Jamaicaway Frontage Road (Boston)	JFK-Umass Station Road (Boston)
John F Kennedy Street (Cambridge)	Lagrange Street Ext. (Boston)
Longfellow Bridge (Boston)	Lynn Fells Parkway (Melrose, Saugus)
Lynn Shore Drive (Lynn, Nahant, Swampscott)	Lynnway (Lynn, Revere)
Lynnway Underpass - Rt 1A Sb To Lynnway (Revere)	Main Street (Cambridge)
Main Street (Everett)	Massachusetts Avenue (Boston, Cambridge)
Mcgrath O'Brien Highway (Somerville)	Medford Street (Arlington)
Medford Veterans Memorial Highway	Memorial Drive (Cambridge)
Memorial Drive Underpass (Cambridge)	Metropolitan District Commission Road (Southborough)
Metropolitan Road (Medford)	Middle Street (Randolph)

Table 1 DCR Parkways and Facilities in Urbanized Areas and Served by MS4s (Continued)

Parkways/Roads (Continued)	
Middlesex Avenue (Medford)	Middleton Street (North Andover)
Milton Street (Boston)	Monsanto Road (Everett)
Monsignor Casey Highway (Boston)	Monsignor Obrien Highway (Cambridge, Somerville)
Morrissey Service Road (Boston)	Morton Street (Boston)
Mount Auburn Street (Cambridge)	Mount Vernon Street (Dorchester)
Mystic River Road (Medford)	Mystic Valley Parkway (Arlington, Medford, Somerville, Winchester)
Mystic Valley Parkway Section V (Arlington)	Nahant Beach Boulevard (Nahant)
Nantasket Avenue (Hull)	Nash Hill Reservoir Road (Ludlow)
Neponset Avenue (Boston)	Neponset Valley Parkway (Boston, Milton)
New South Street (Stoneham)	Noble Street (Revere)
Nonantum Road (Boston, Newton, Watertown)	Nonantum Road Branch (Newton)
North Beacon Street (Boston, Watertown)	North Border Road (Stoneham)
North Harvard Street (Boston)	North Shore Road (Revere)
Norumbega Road (Weston)	Oak Island Street (Revere)
Ocean Avenue (Revere)	Ocean Street (Lynn, Swampscott)
Old Colony Avenue (Boston)	Park Drive (Boston)
Park Road (Weston)	Park Street (Stoneham)
Parkman Drive (Boston)	Pelton Street (Boston)
Perkins Street (Boston)	Pine Tops Road (Saugus)
Pond Street (Stoneham)	Quincy Shore Drive (Quincy)
Quinobequin Road (Newton)	Ravine Road (Melrose, Stoneham)
Recreation Road (Weston)	Reservation Road (Boston)
Reservoir Street (Winchester)	Revere Beach Boulevard (Revere)
Revere Beach Parkway (Chelsea, Everett, Medford, Revere)	Revere Street (Revere)
River Street (Boston, Cambridge)	Riverdale Road (Upton)
Riverway (Boston)	Riverway Frontage Road (Boston)
Rocky Woods Reservation Road (Medfield)	Saint Thomas Moore Road (Boston)
Santilli Circle Connector (Everett)	Sawmill Lane (Dedham)
Shirley Avenue (Revere)	Shore Drive (Somerville)
Shore Road (Boston)	Smith Field Road (Boston)
Soldiers Field Road (Boston)	Soldiers Field Road Extension (Boston)
Soldiers Field Service Road Eastbound (Boston)	South Border Road (Medford, Winchester)
South Street (Stoneham)	State Beach Road (Salisbury)
State Park Road (Ashland)	Storrow Drive (Boston)
Sumner Street (Milton)	Terminal Road (Cambridge)
Truman Highway (Boston, Milton)	Truman Parkway (Boston, Milton)
Turtle Pond Parkway (Boston)	Turtle Pond Parkway Branch (Boston)
Unquity Road (Milton)	Upper Arborway (Boston)
Veterans Of Foreign Wars Parkway (Boston, Brookline)	Wompatuck Road (Quincy)
Wave Avenue (Revere)	West Border Road (Malden)
West Boundary Road (Boston)	West Roxbury Parkway (Boston, Brookline)

Table 1 DCR Parkways and Facilities in Urbanized Areas and Served by MS4s (Continued)

Water Supply Facilities/Reservoirs	
Nash Hill Reservoir (Ludlow)	Sudbury Watershed Lands

DCR owns many recreational facilities within the urbanized areas which are single buildings. Since these facilities are single facilities, the associated storm water conveyance system associated do not qualify as an MS4. Many of these facilities include skating rinks and pools which DCR owns which are individual buildings. In accordance with Part 1.B.1 of the general permit, "a small municipal separate storm sewer system means all separate storm sewers that are:

> (a) owned or operated by the United States, a State, city town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity and Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
>
> (b) not defined as large or medium municipal separate storm sewer systems pursuant to 40 CFR §122.26(b)(4) and (b)(7) or designated under 40 CFR §122.26(a)(1)(v).
>
> (c) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospitals or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings."

These facilities which fall into this category are listed in Table 2 below. DCR requests EPA review the list below and document that since these facilities are individual buildings, any drainage system associated with the building does not qualify on its own as an MS4 and is therefore not included in the facilities covered by the general permit authorization.

Table 2 DCR Individual Facilities Located within Urbanized Area – Drainage Systems do not Qualify as a Small MS4 System

Parks/Reservations	
Attitash Public Access	Baker Chocolate Factory (Dorchester)
Barnstable Fire Tower	Blessing Of The Bay Boathouse (Somerville)
Brainard Street House (Boston)	Charles River Dam (Boston)
Ernestina Commissioned Schooner (New Bedford)	Essex Fire Tower
Granby Dinosaur Museum	Great Herring Pond Boat Ramp (Bourne)
Hatch Shell (Boston)	Hopkinton Boat Ramp
Leadmine Pond Public Access (Sturbridge)	National Monument To The Forefather (Plymouth)
Old Harbor Park (Boston)	Pilgrim National Monument (Plymouth)
Westgate Canoe Launch (Wellesley)	
Recreation Facilities (Pools/Rinks)	
Allied Veterans Mem. Swimming Pool/Rink/Rec Center (Everett)	Artesani Playground Wading Pool (Brighton)
Attleboro Pool (George I. Spatcher Memorial)	Auburn Rink (Daniel S. Horgan Memorial)
Bajko Rink (Hyde Park)	Beaver Brook Spray Deck (Belmont)
Bennett Field Swimming Pool (Worcester)	Bradley Palmer Wading Pool (Topsfield)
Brian Rink (Boston)	Brighton - Allston Pool
Brockton Pool (Frank A. Manning Memorial)	Brockton Rink (John G. Asiaf Memorial)
Cass Memorial Pool (Roxbury)	Cass Rink (Roxbury)
Chelsea Pool	Clinton Pool (Philip J. Weihn Memorial)
Connell Pool (Weymouth)	Connell Rink (Weymouth)
Connery Memorial Rink (Lynn)	Connors Pool (Waltham)
Cronin Memorial Rink (Revere)	Daly Recreation Center (Brighton)
Dealtry Memorial Pool (Watertown)	Dealtry Pool (Waltham)
Dilboy Pool And Stadium (Somerville)	Fall River Pool (Veteran's Memorial)
Fall River Rink (Arther R. Driscol Memorial)	Fitchburg Pool (Gustave Johnson Memorial)
Flynn Memorial Rink (Medford)	Franklin Rink (Veterans Memorial)
Gardner Rink (Gardner Veterans Rink)	Geisler Memorial Pool (Lawrence)
Gore Street (Simoni) Rink (Cambridge)	Greenfield Rink (Collins-Moylan Memorial)
Hall Memorial Pool (Stoneham)	Haverhill Rink (Veterans Memorial)
Higgins, Lt. Col. Edward J., Swimming Pool (Lawrence)	Holland Memorial Pool (Malden)
Holyoke Pool (Feldman Pool)	Holyoke Rink (Henry J. Fitzpatrick)
Kasabuski Rink (Saugus)	Kelly Rink (Jamaica Plain)
Latta Pool (Somerville)	Lee Memorial Pool - Wading Pool (West End)
Leominster State Pool	Lloyd Memorial Pool (Melrose, Lynn)
Loconte Memorial Rink (Medford)	Lord Pool (Raymond J. Lord Memorial) (Lowell)
Lowell Rink (John J. Janas Memorial)	Lt Col E.J. Higgins Memorial Pool (Lawrence)
Ludlow Pool (John J. Thompson Memorial)	Marlboro Rink (John J. Navin Rink)
Mason, Gerald J., Mem. Swimming Pool (Agawam)	McCrehan Mem. Swimming & Wading Pool (Cambridge)
Metropolis Rink (Canton)	Milford Pool (Casey Memorial)
Murphy Rink (S. Boston)	New Bedford Rink (Stephen Hetland Memorial)
Newburyport Rink (Harry Graf, Jr.)	Olsen Pool (Hyde Park)

Table 2 DCR Individual Facilities Located within Urbanized Area – Drainage Systems do not Qualify as a Small MS4 System (Continued)

Recreation Facilities (Pools/Rinks) (Continued)	
Olsen Rink (Boston)	Peabody Rink (Mcvann-O'Keefe Memorial)
Petro, Andrew J., Swimming Pool (Southbridge)	Phelan Pool (Boston)
Plymouth Rink (John A. Armstrong Memorial)	Porrazzo Memorial Rink (E. Boston)
Reilly Pool (Brighton)	Reilly Rink (Brookline)
Ryan Wading Pool (Mattapan)	Shea Rink (Quincy)
Sherman, Sara Jane, Mem. Swimming Pool (Chicopee)	Shine, Dennis F., Mem. Swimming Pool (Worcester)
Simoni Memorial Rink (Cambridge)	Somerville Veterans Rink
South Hadley Pool (Buttery Brook Memorial)	Springfield Pool (John H. Thomas Memorial)
Springfield Rink (Ray Smead Memorial)	Steriti Rink (North End)
Stony Brook Spray Deck (Jamaica Plain)	Thomas, John H. Memorial Swimming Pool (Springfield)
Ulin Rink (Milton)	Veterans Mem. Swimming & Wading Pool (Cambridge)
Veterans Memorial Pool (Waltham)	Veterans Rink (Waltham)
Vietnam Veterans Memorial Pool (Chelsea)	Weihn, Philip, Memorial Swimming Pool (Clinton)
Worcester Rink (Chester Buffone Mem.)	World War II Pool (Cambridge)

Finally, DCR also identified various parkways and facilities which are located entirely or partially within an urbanized area but the property does not include a formal storm water conveyance system and, therefore, is not subject to coverage under the general permit. In many cases, these facilities are forests with no development or where the developed portion of the facility is outside of the urbanized area. The facilities are listed in Table 3 below.

Table 3 DCR Parkways and Facilities Located Wholly or Partially within Urbanized Areas but Not Served by a Small MS4 System

Administrative Facilities	
DCR - Boston 251 Causeway Street	DCR - Cambridge 10 North Point Blvd.
DCR - Canton 2167 Washington Street	DCR - Charlestown 250 Warren Avenue
DCR - Hingham 349 Lincoln Street	DCR - South Boston 165 Day Blvd.
DCR - Stoneham 4 Woodland Road	DCR - Waquoit 149 Waquoit Hgwy.
DCR - West Boylston 180 Beaman Street	DCR Central Region Headquarters (Sterling/Clinton)
DCR Northeast Region Headquarters (Carlisle)	DCR Southeast Reg. Headquarters (S. Carver/Plymouth)
DCR Western Region Headquarters (Pittsfield)	Wachusett Section Ranger Station (Clinton)
Flood Control Facilities	
Brewer Brook Flood Retarding Facility (Berlin)	Cold Harbor Brook Flood Retarding Facility (Northborough)
Delaney Flood Retarding Facility (Boxborough, Harvard, Stow)	East Brookfield Flood Wall

Table 3 DCR Parkways and Facilities Located Wholly or Partially within Urbanized Areas but Not Served by a Small MS4 System (Continued)

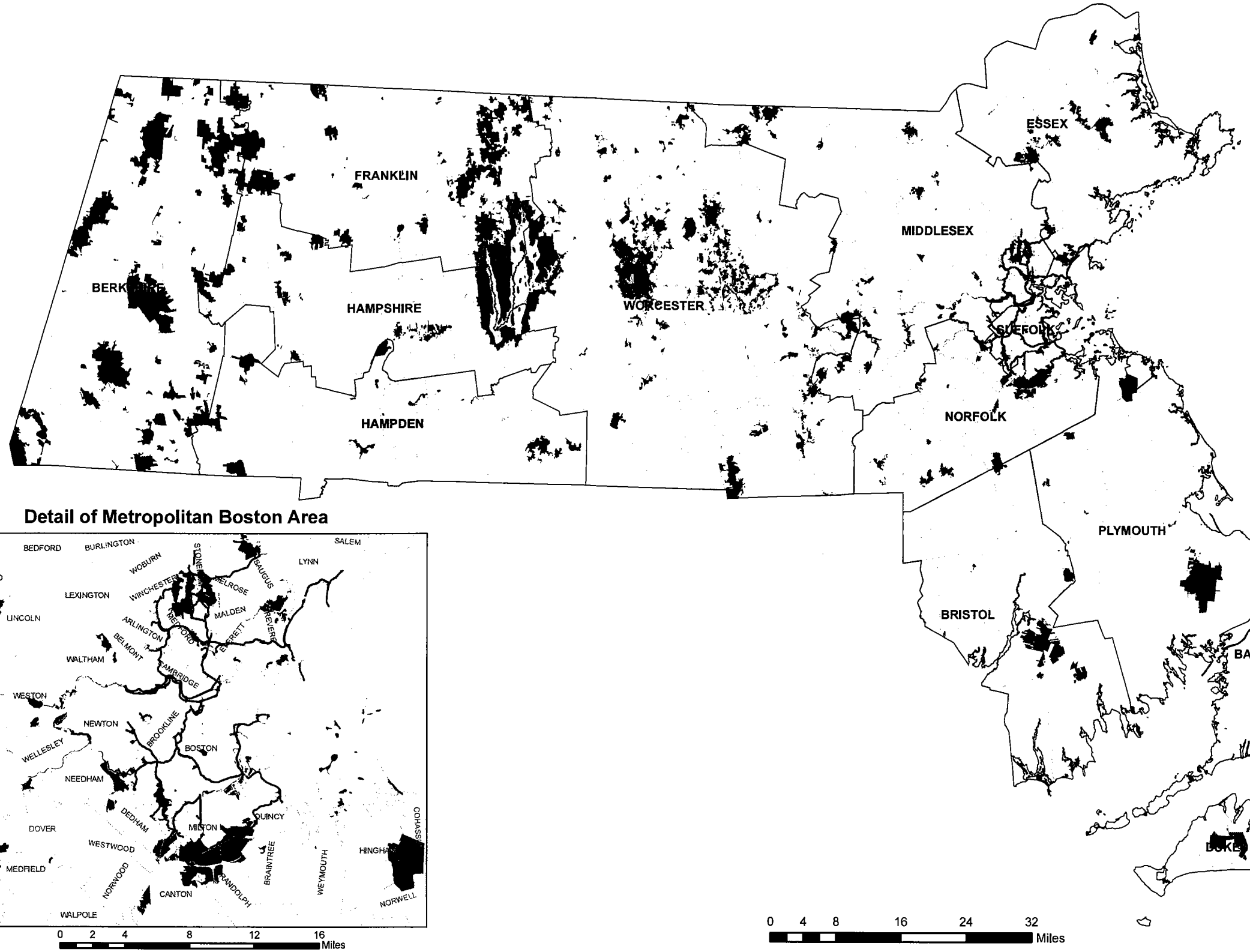
Flood Control Facilities (Continued)	
Hop Brook (A-3C) Flood Retarding Facility (Northborough)	Moose Hill Flood Retarding Facility (Leicester, Spencer)
Nichols (A-1) Flood Retarding Facility	North Silver Flood Retarding Facility (Sandisfield)
Rawson Hill (A-4C) Flood Retarding Facility (Shrewsbury)	Ross Flood Retarding Facility (Berlin)
South Silver Flood Retarding Facility (Sandisfield)	Town Brook Flood Control (Braintree)
Tyler Flood Retarding Facility (Northborough, Marlborough)	
State Forests	
Barnstable State Forest	Billerica State Forest
Boxford State Forest	Brewster State Forest
East Branch State Forest	F. Gilbert Hills State Forest (Foxborough)
Falmouth State Forest	Franklin State Forest
Freetown-Fall River State Forest	Georgetown-Rowley State Forest
Harold Parker State Forest (Andover, N. Andover, N. Reading)	Kingston State Forest
Leominster State Forest	Marlboro State Forest
Marlborough-Sudbury State Forest	Myles Standish State Forest (Plymouth, Carver)
Otter River State Forest (Templeton)	Pittsfield State Forest
Raynham State Forest	Rich, J. Harry State Forest (Groton)
Sandwich State Forest Lands	South Mountain State Forest
Spencer State Forest	Squannacook Brook State Forest (Townsend)
Sudbury State Forest	Townsend State Forest
UMass/Demonstration Forest	Upton State Forest
Warren Manning State Forest	West Bridgewater State Forest
Willard Brook State Forest (Townsend)	Willowdale State Forest (Topsfield)
Wrentham State Forest	
Parks/Reservations	
Acushnet Cedar Swamp State Reservation (Dartmouth, New Bedford)	Appalachian Trail (Berkshire County)
Bay Farm State Park (Kingston)	Beaver Brook Little Pond Reservation (Beaver Brook Reservation)
Belle Isle Marsh Reservations (Boston, Winthrop)	Borderland State Park
Bradley Palmer State Park (Topsfield)	Brook Farm (Boston)
Calf Island	Callahan State Park (Framingham, Marlborough, Southborough)
Camp Meigs (Boston)	Cape Cod Rail Trail (Eastham)
Castle Island (S. Boston)	Cedar Swamp (Hopkinton, Westborough)
Chelsea Creek Beach (Boston)	Chicopee Memorial State Park
Chicopee State Boat Ramp	Commercial Point (Boston)
Conley and Tenean State Park (Boston)	Constitution Beach (Boston)

Table 3 DCR Parkways and Facilities Located Wholly or Partially within Urbanized Areas but Not Served by a Small MS4 System (Continued)

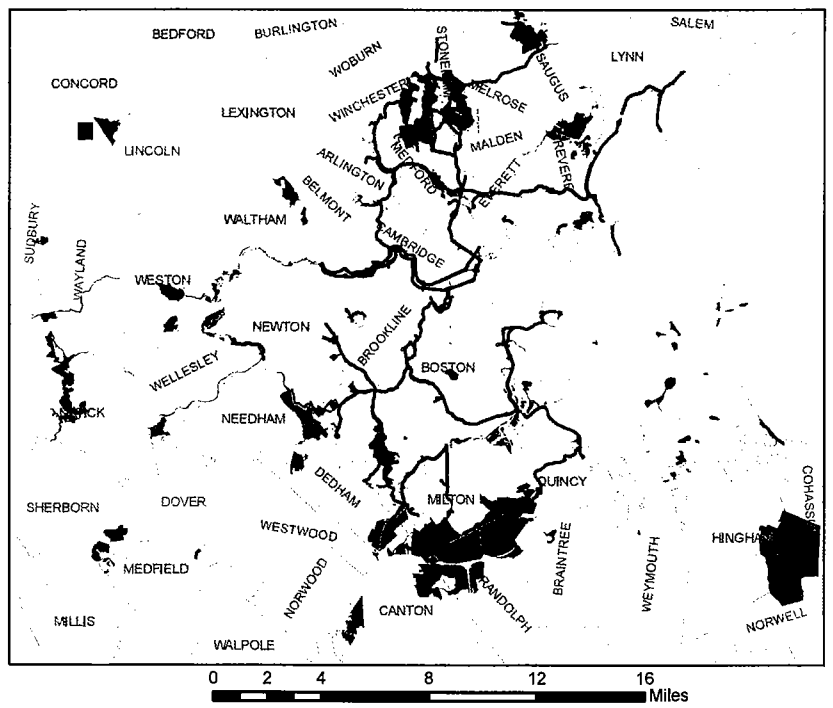
Parks/Reservations (Continued)	
Crane Swamp (Northborough, Southborough, Westborough)	Cushing Memorial State Park (Scituate)
Cutler Park (Dedham, Needham, Newton)	Dennis Fire Tower
Dorothy Quincy House (Quincy)	Ellisville Harbor State Park (Plymouth)
Elm Bank Reservation (Dover, Wellesley)	Elwell State Recreation Area (Northampton)
Esplanade (Boston)	Fall River State Pier
Forest Grove (Waltham)	Fort Revere (Hull)
Gallops Island	Gardner Heritage State Park
Georges Islands	Gloucester State Pier
Governor Thomas Dudley State Park (Billerica)	Great Brewster Island
Great Brook Farm State Park (Carlisle, Chelmsford)	Green Island
Halibut Point State Park (Rockport)	Hancock Woods (Boston)
Hangman Island	Havey Beach (Boston)
Hawksnest State Park (Harwich)	Hemlock Gorge Reservation (Needham, Newton, Wellesley)
Hopkinton State Park	J. Elwell Conservation Area (Northampton)
JFK Park (Cambridge)	Johnny Appleseed State Park (Leominster)
Kings Beach (Lynn)	Lake Dennison Recreation Area (Winchendon)
Lake Lorraine State Park (Springfield)	Lawrence Heritage State Park
Linden And Town Line Brook (Revere)	Little Calf Island
Lost Pond Reservation (Brookline)	Magazine Beach (Cambridge)
Maple St MDC Land (Marlborough)	Marine Park (Boston)
Mary O"Malley Waterfront Park (Chelsea)	Massasoit State Park (Middleborough, Taunton)
Maudslay State Park (Newburyport)	McMorrow Playground (Boston)
Met State Hospital (Lexington)	Met State Lot 1 (Belmont, Waltham)
Met State Lot 4 (Waltham)	Middle Brewster Island
Moore State Park (Paxton)	Mount Holyoke Range State Park (Amherst)
Mt. Tom State Reservation (Easthampton, Holyoke)	Myles Standish Monument (Duxbury)
Nantasket Beach Reservation (Hull)	Nasketucket Bay State Reservation (Fairhaven, Mattapoisett)
New Bedford State Pier	Newton Lower Falls Park (Newton, Weston)
Norwottuck Rail Trail (Hadley, Northampton)	Old Harbor Reservation (Boston)
Outer Brewster Island	Pattens Cove (Boston)
Perry Lot (Falmouth)	Pilgrim Memorial State Park
Pine Swamp (section of Willowdale State Forest) (Ipswich)	Plum Island State Reservation (Newburyport)
Plymouth Fire Tower	Poutwater Pond (Holden)
Quashnet Woods State Reservation (Mashpee)	Raccoon Island
Red Bridge State Park (Ludlow, Palmer, Wilbraham)	Red Wing Bay (Needham)
Riverdale Park (Dedham)	Roxbury Heritage State Park
Rumney Marsh Reservation (Saugus)	Salisbury Beach State Reservation
Saugus River Reservation	Scusset Beach State Reservation (Bourne)

Table 3 DCR Parkways and Facilities Located Wholly or Partially within Urbanized Areas but Not Served by a Small MS4 System (Continued)

Parks/Reservations (Continued)	
Sheep Island	Sherrin And Dale St Playground (Boston)
Slate Island	South Cape Beach State Park (Mashpee)
South New England Trunk Line Trail (Blackstone)	Southwest Corridor Park (Boston)
Spot Pond Brook (Malden, Melrose)	Springfield Heritage State Park
Streeter Point Recreation Area (Sturbridge)	Sudbury River (Hopkinton, Southborough)
Town Line Brook (Everett, Malden, Revere)	Twoohig Park (Dorchester)
Victory Road Park (Boston)	Village Falls Park (Needham)
Waquoit Bay National Estuarine Reserve (Falmouth, Mashpee)	Watson Pond State Park (Taunton)
Webb Memorial State Park (Weymouth)	West Island State Reservation (Fairhaven)
Whitehall State Park (Hopkinton)	Wilson Mountain Reservation (Dedham)
Wompatuck State Park (Norwell, Hingham)	
Parkways/Roads	
Community Field Road (Holyoke)	Eli Rogers Road (Orleans)
Joe Long Road (Brewster)	Ober Road (Brewster)
Scott Tower Road (Holyoke)	Turtle Lane (Dover)
Recreation Facilities (Pools/Rinks)	
Devine Rink (Dorchester)	Emmons Horrigan O"Neill Memorial Rink (Charlestown)
Johnson Playground Spray Deck (Jamaica Plain)	Mission Hill Spray Deck (Roxbury)
Moynihan Wading Pool (Hyde Park)	
Water Supply Facilities/Reservoirs	
Chestnut Hill Reservoir	Chestnut Hill Reservoir, Boston
Cochituate Aqueduct	Framingham Reservoir 1
Framingham Reservoir 2	Framingham Reservoir 3
Middlesex Fells Reservoir	Norumbega Reservoir (Weston)
Rice Reservoir Site (Brookfield)	Sudbury Aqueduct
Sudbury Reservoir	Wachusett Aqueduct
Wachusett Reservoir	Wachusett Reservoir Watershed
Ware River Watershed	Weston Aqueduct
Weston Reservoir	



Detail of Metropolitan Boston Area



Legend

- Urbanized Area
- DCR Facility in UA
- DCR Facility Outside UA

DCR Facilities and Roads Located in Urbanized Areas

August 2005

ENSR INTERNATIONAL

Figure Number

2

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2.0 MINIMUM CONTROL MEASURES

The following section describes control measures DCR will implement to satisfy conditions of the National Pollution Discharge Elimination System (NPDES) Phase II permit requirements for transportation and non-traditional MS4s. EPA requires compliance with six minimum control measures including:

- Public education and outreach;
- Public involvement/participation;
- Illicit discharge detection and elimination;
- Construction site runoff controls;
- Post-construction runoff controls; and
- Pollution prevention/good housekeeping.

The BMPs and measurable goals for each control measure are addressed in detail within this section. Appendix A includes DCR's Notice of Intent (NOI) and program schedule. The NOI summarizes the BMPs and measurable goals identified for each minimum control measure and outlines the DCR Office/ Division responsible for implementing each of the programs and meeting the measurable goals.

2.1 Public Education and Outreach

EPA Minimum Control Requirement: In accordance with the NPDES Phase II permit, the Public Education and Outreach minimum control requirement requires the operator of the small MS4 to implement a public education program to distribute educational material to the community. For the purposes of this permit, a community consists of the people who use the facility. The public education program must provide information concerning the impact of storm water discharges on water bodies. It must address steps and/or activities that the community can take to reduce the pollutants in storm water runoff.

According to the general permit, the following should be included in education and outreach efforts:

(a) information regarding activities that occur within the facility, including illegal dumping into storm drains.

(b) coordinate activities with local groups (i.e. watershed associations, or schools).

(c) materials for outreach/education may include, but are not limited to, pamphlets; fact sheets; brochures; public service announcements; storm drain stenciling and newspaper advertisements.

(d) encourage cooperative efforts with neighboring municipalities, watershed associations and others.

DCR Programs: The DCR recognizes the role of public education in the protection of public drinking water supplies, public waterways, aquatic habitat, recreational enjoyment and associated resources. DCR already has in place an extensive, state-wide education program targeting a wide range of ages and facility/ park users. Formal and informal interpretive programs are provided for the general public, school groups and special interest groups. Staff also disseminates information about access policies and recreational use on DCR lands. By raising awareness and appreciation for these precious resources, DCR is helping to protect, conserve and enhance the resources of the Commonwealth. DCR will continue on-going programs and adapt many others to include a storm water education component. DCR will provide additional impact by implementing new programs during the permit term. The programs are described below:

BMP 1-1: DCR Storm Water Web Page - DCR will develop a storm water web page on the DCR web site. This web page will be used to post the SWMP, NOI and annual reports. The web page will also be used to post information on storm water related issues and programs developed during the SWMP implementation.

Measurable Goal/ Schedule: DCR will develop a web page by the end of spring 2006 and will post a copy of the SWMP and NOI at that time.

BMP 1-2: Lower Charles River Middle School Educational Program - DCR will implement a program to educate the teachers and middle school students in the towns included in the Lower Charles River watershed including Boston, Weston, Wellesley, Dedham, Needham, Newton, Waltham, Watertown, Brookline and Cambridge. The program will focus on educating the teachers and students about storm water effects on the river and how they can help.

Measurable Goal/ Schedule: DCR or its agent will offer the program to each middle school once a year.

BMP 1-3: Catch Basins Stenciling/ Plaques – DCR's catch basin specification includes stenciling of existing catch basins or addition of plaques on new catch basins on new or redevelopment project to include "Do Not Dump", "Drains to the Ocean", "Drains to ..." or similar message on all catch basins which drain to a waterbody. DCR will provide all park facility staff with stencils. Staff will mark or review the marking of all catch basins within park facilities each year as part of the annual spring cleaning tasks.

Measurable Goal/ Schedule: Park facility staff to mark all catch basins each spring (or as necessary).

BMP 1-4: Publish Water Quality Reports and Post Beaches – DCR publishes water quality reports on a daily basis during the summer swimming season for all of the coastal beaches (including northeast, north shore, south shore and southeast state parks, forests and reservations). The water quality reports are available at http://www.boston.com/travel/newengland/beaches/summer/livereport/. DCR has worked with boston.com to place this important information on a highly visible website as a means to disseminate the information to a wider audience and provide real time data on the beach water quality information. The web page also has a link to Charles River Watershed Association for information on Charles River water quality. DCR also provides a hotline with the same information at 617-626-4972.

Measurable Goal/ Schedule: Continue to post water quality reports for coastal beaches on web site and provide information on hotline number during summer months.

BMP 1-5: Interactions with Boat Club Programs – DCR will add a requirement to Boat Clubs along the Lower Charles River indicating that they must post "No Wake Zone" signs and enforce this limitation on their members in order to maintain their permit from DCR.

Measurable Goal/ Schedule: This requirement will be added to permits by the end of Spring 2006.

BMP 1-6: Speed Limit Signs – DCR will post speed limit signs, as in compliance with local regulations, along the Lower Charles River banks and at bridges along the river in an effort to reduce the speed of boats and aid in combating the erosive waves along the banks.

Measurable Goal/ Schedule: DCR will post signs on 50% of the river in Summer 2006 and the remainder of the river in Summer 2007.

BMP 1-7: Muddy River Volunteer Clean Up Program – DCR will continue to jointly sponsor spring and winter clean ups of the Muddy River with Boston Parks and Recreation Department and the Town of Brookline. DCR provides in-kind services (e.g. trucks, staff) for the clean up days as well as staff to help coordinate and plan the clean up days.

Measurable Goal/Schedule: Continue to jointly sponsor spring and winter clean up days.

BMP 1-8: Charles River Conservancy Clean Up Program – DCR partners with Charles River Conservancy to provide in-kind services (e.g. trucks, staff, disposal of material) and space for Charles River Conservancy staff within DCR offices to coordinate the clean up of the Charles River. This program is on-going throughout the year.

Measurable Goal/Schedule: Continue to partner with Charles River Conservancy on Clean Up Program.

BMP 1-9: Charles River Reservation School Program - The DCR Ranger's stationed at the Charles River Reservation provide educational programs to schools in Eastern Massachusetts. The focus is on developing relationships with schools that have easy access to the Charles River for continued study. Current programs include the following storm water/ water quality related programs:

Introduction to the Charles River - How long is the Charles River? Where does it begin? How clean is the river? This program focuses on the many changes to the river, including storm water pollution, and the recent successful efforts to improve the water quality of the Charles.

Charles River Basin Boat Tour - Explore the Charles River Basin up close with the assistance of the Charles Riverboat Company. The tour is a follow up to the Introduction to the Charles River Boat tours.

Branching Out - What is a watershed? This program introduces students to the idea of watersheds and how they work by building a model watershed. We will investigate how water flows through watersheds and how pollutants can affect them.

Sum of the Parts - Where does water pollution come from? This program introduces the difference between point and non-point pollution. The activity helps students recognize that we all contribute to pollution and that we can all reduce pollution.

Related programs include:

Fashion a Fish - Why do birds have wings? Why do fish have gills? In this program the students discover how wildlife has adapted to the environment they live in. Then they use the information to design their own fish.

Charles River Dam Tour - Why is this dam one of the most important buildings in Boston? Students will explore the dam and learn about its main functions; flood control, navigation and fish migration. The tour also focuses on the dam's greater role in the human management of the Charles River.

Measurable Goal/ Schedule: Continue to provide this program. Provide one program related to water quality, water resources and/or storm water each year.

BMP 1-10: The Boston Harbor Islands Alliance – The Boston Harbor Islands Learning Center provides an important resource to the public in discovering the major natural and cultural resources of the

Harbor Islands and how to connect these resources to students. The learning center includes lesson plans developed by area teachers, descriptions of programs offered by park partner organizations, and student quizzes and exhibitions. In addition, the Center allows participants to connect to more in-depth information about the park, including research reports and detailed island maps. Lesson plans and programs administered by the Boston Harbor Island Alliance directly related to storm water/ water quality include:

Dwayne the Storm Drain - "Dwayne" takes students through each season explaining how natural and human impacts affect the storm water system. After reading the colorful big book, students understand their connection to the system. All students receive a Dwayne the Storm Drain coloring/activity book.

Related programs include:

Water from Source to Sea - One of the benchmarks for any community is the quality of its water resources. "Running water" means, to most people, the availability of potable water at the tap. However, we must also have water running away from our communities, to dispose of many kinds of waste common to our daily lives. The MWRA School Education staff conducts classroom presentations covering the flow of water from the Quabbin Reservoir (source) to the discharge of cleaned wastewater from Deer Island into the deep ocean waters of Massachusetts Bay (sea).

Flush Back Time - This is a slide show presentation that documents the history of the toilet and plumbing systems and the changes in technology through the centuries. See and discuss slides of garderobes used in medieval times to present-day vacuum toilets. History and technology meet in this original MWRA production.

Down the Drain - Down the Drain is an interactive presentation which answers the questions...What is wastewater? Where does it come from and where does it go? The 30" X 40" presentation boards depict each stage of the wastewater treatment process. Props are attached to the boards to demonstrate what gets stopped along the way. Students see actual samples of wastewater as it progresses through the system.

Deer Island Tour - Come see the operation of the new wastewater treatment facility on Deer Island. Visitors will see the wastewater treatment facility, including twelve towering egg-shaped digesters that are part of the process of recycling sewage sludge into fertilizer.

Harbor Bound - The Boston Harbor Association's (TBHA) "Harbor Bound" education program introduces inner city high school students to job opportunities and skills in the environmental field and educates them about environmental issues confronting Boston Harbor. This innovative, free program brings high school age students on a boat tour of Boston Harbor and provides them with hands-on opportunities to conduct water quality tests, tour the Massachusetts Water Resources

Authority's wastewater treatment facility on Deer Island, and hear from career speakers in the maritime and environmental fields.

Measurable Goal/ Schedule: Continue to sponsor these programs. Provide one program related to water quality, water resources and/or storm water each year.

BMP 1-11: Camp Nihan - Camp Nihan is managed by the Division of Urban Parks & Recreation. The camp offers free environmental education programs for schools and nonprofit organizations. The center is located adjacent to Breakheart Reservation in Saugus. Camp Nihan is an ideal facility for nature exploration embracing sixty five acres of woodland forest, marsh and a spring-fed pond. The Saugus River flows through the camp property providing ideal habitats for animals such as heron and mallards. A variety of mammals reside in and around the area, including fox, deer and river otter.

During the Month of August, the Camp Nihan Environmental Education Center hosts "Focus on Environmental Education", a free series of workshops for educators. In this workshop series, educators learn hands-on interdisciplinary environmental education lessons for children of grades K-12. Programs offered for the summer of 2005 include ground water and water resources related seminars.

Measurable Goal/ Schedule: Continue to provide this program. Provide one educational program related to water quality, water resources and/or storm water each year.

BMP 1-12: George's Island Boston Fort Warren Harbor School Programs –The Division of Urban Parks and Recreation's Harbor Islands Rangers on George's Island provide school programs at the reservation usually in May, June and September. Water resource related programs currently offered include:

On the Ocean's Edge - This program focuses on the harbor environment. Through a series of hands-on activities students learn about the geologic formation of the harbor and the physical forces that shape it. Students will discuss the importance of the harbor as an "edge community" and explore the intertidal zone for signs of a wide variety of marine life. Students will "learn who dirtied the water" and how changes at the Deer Island Sewage Treatment facility are affecting water quality.

Measurable Goal/ Schedule: Continue to provide this program. Provide one educational program related to water quality, water resources and/or storm water each year.

BMP 1-13: Quabbin Educational Programs - The Quabbin Interpretive Services program operates the Quabbin Visitor Center, Education Programs, Teacher Workshops, and provides general information about DCR resources. Educational programs are offered for school groups from the watershed area and to communities which receive water from Quabbin. The programs focus on water quality, water

awareness, watersheds, natural history and Quabbin area history. Water related programs are also offered by the Visitor Center staff specifically for teachers including workshops on water quality testing, watersheds, Project WET, Project WILD, Project Learning Tree, Quabbin history, and other topics.

Measurable Goal/ Schedule: Continue to provide this program. Provide one educational program related to water quality, water resources and/or storm water each year.

BMP 1-14: Wachusett Educational Programs – The Wachusett/ Sudbury Watershed Ranger Program, along with educators from DCR's Division of State Parks, offers classroom programs and field trips to schools and groups in or bordering the watershed areas, and to MWRA service communities. Topics range from water's behavior and physical properties, watersheds, cultural and natural history of the watershed areas. The Wachusett Ranger staff also offers teacher workshops on watersheds, Project WET, water system history, and other topics.

In Spring 2005, the Wachusett/ Sudbury Watershed Ranger Program offered a watershed education program for 4th graders in Holden and Princeton. Students experienced a series of activities focusing on watersheds, water supply, local history and forests. The participating teachers were previously trained in the curriculum and were provided with material for each lesson. The DCR staff offered four different programs to the students at each school. DCR Watershed Rangers presented a slide program on the history of the Wachusett Reservoir watershed. Next, staff from DCR State Parks provided a forest awareness session using literature and visual cues. The third activity was led by Office of Watershed Management staff and utilized maps of the watershed to focus on the flow of water from the school to the ocean. Finally, the kids were involved in a day-long field trip following the flow of water from Wachusett Mountain along the Stillwater River.

Measurable Goal/ Schedule: Continue to provide this program, or similar, on an annual basis to two schools in the Wachusett Reservoir watershed.

BMP 1-15: Stillwater Farm - The Stillwater Farm Interpretive Site in Sterling is an environmental education facility jointly managed by the Office of Watershed Management and the Friends of the Wachusett Watershed, Inc. This 55 acre site on the Stillwater River hosts an 18th century farmhouse, 19th century dairy barn, and a self-guided interpretive trail. These facilities provide individuals and group an opportunity to better understand the connections between land use and community character, and between natural resource protection and land management. Stillwater Farm, through scheduled programs and volunteer events, demonstrates both past and present interactions between the working landscape and resource stewardship. Particular emphasis is given to watershed related issues and dynamics.

Measurable Goal/ Schedule: Continue to provide this program. Provide one educational program related to water quality, water resources and/or storm water each year.

BMP 1-16: Project WET - Project WET (Water Education for Teachers) is a national nonprofit water education program for educators and young people located on the campus of Montana State University in Bozeman, Montana. The goal of Project WET is to facilitate and promote the awareness, appreciation, knowledge and stewardship of water resources through the development and dissemination of classroom ready teaching aids and through the establishment of state and internationally sponsored Project WET programs. Project WET is active in all 50 states, the District of Columbia, the U.S. islands and select provinces of Canada. In Massachusetts, Project WET is sponsored by the DCR's Division of Water Supply - Office of Watershed Management.

Project WET is grounded in the belief that when informed, people are more likely to participate in the decision making process and to make a difference through their actions. The development of a water ethic should begin at an early age. Children benefit from parents, teachers and mentors who recognize not only the scientific but also the social and cultural aspects of water resource education.

Certified Project WET facilitators conduct workshops where educators, community leaders and natural resource managers receive instruction in the use of Project WET materials. Workshop participants attending the 6-hour workshop receive the highly acclaimed Project WET Curriculum and Activity Guide, a 500 page publication filled with over 90 innovative, interdisciplinary activities for grades K - 12 that are hands-on, easy to use and fun. Designed with a commitment to state and national standards, the Guide addresses the following content areas:

- Water has unique physical and chemical characteristics.
- Water is essential for all life to exist.
- Water connects all Earth systems.
- Water is a natural resource.
- Water resources are managed.
- Water resources exist within social contexts.
- Water resources exist within cultural contexts.

Workshop participants are then encouraged to integrate activities from the Guide into existing curricula of a school, museum, university pre-service class, community organization, or other appropriate forums.

Measurable Goal/ Schedule: Maintain sponsorship of state water education for teachers program.

BMP 1-17: "Downstream" Newsletter – DCR's Division of Water Supply produces and disseminates a newsletter to residents of the Wachusett Reservoir/ Ware River/ Quabbin Reservoir watershed system. The flyer is produced twice a year and includes articles of interest to residents of the watershed system communities. The goal of the newsletter is to inform the public about watershed protection issues and

activities; provide a conduit for public input; and promote environmentally responsible land management practices.

Measurable Goal/ Schedule: Continue to produce newsletter twice a year.

BMP 1-18: Adopt-a-Stream - The Adopt-A-Stream Program supports groups who want to "adopt" a river or stream by working to improve water quality and protect lands adjacent to rivers. The Adopt-a-Stream staff provides assistance to get new groups started, or to maintain and revitalize existing groups. DCR will begin to participate in this program with DCR staff and in-kind services.

Measurable Goal/ Schedule: Begin to participate in this program in the Fall of 2005.

BMP 1-19: Massachusetts Drinking Water Education Partnership (MADWEP) - DCR is a member of the Massachusetts Drinking Water Education Partnership, which provides year-round educational programs and information to increase public understanding of drinking water issues. The Partnership is dedicated to protecting drinking water supplies and public health through collaborative projects, culminating in Drinking Water Week events each May.

Measurable Goal/ Schedule: Maintain membership in program. Review opportunities to tie the impacts of storm water on drinking water issues.

2.2 Public Participation/Involvement

EPA Minimum Control Requirement: The NPDES Phase II permit requires all public involvement activities to comply with state public notice provisions including that "the permittee must provide opportunity for the public to participate in the development, implementation and review of the storm water management program. In Massachusetts, the public notice requirements are at Chapter 39, Section 23B."

DCR Programs: DCR understands the importance of including the public in the storm water related activities of the department. DCR has worked hard to develop partnerships with watershed advocacy groups within the watersheds which include water supply reservoirs and the urban parks. The following is a list of the current programs which involve public participation and involvement, as well as a summary of the programs proposed to enhance DCR program to meet this minimum control measure.

BMP 2-1: Formalize Partnerships with CRWA and CLF – DCR has entered into a Memorandum of Understanding (MOU) with Charles River Watershed Association (CRWA) and Conservation Law Foundation (CLF) committing to certain permit related issues. In essence the parties have agreed to

forebear legal action provided that the DCR maintains a strong commitment to its stormwater management program.

Measurable Goal/ Schedule: DCR will continue to work together with CLF and CRWA to abide by the MOU.

BMP 2-2: Water Quality Monitoring – DCR currently works with University of Massachusetts' (UMass) students to provide long-term water quality monitoring of waterbodies in the Wachusett watershed. Previous projects have included storm water related sampling as it impacts the reservoir's water quality. UMass students monitor water quality at specific target areas and work with DCR to summarize and analyze results.

Measurable Goal/ Schedule: DCR will continue this program.

BMP 2-3: Public NPDES Meetings to Discuss Annual Report – DCR will hold a presentation open to the public once a year after the annual report is submitted to EPA.

Measurable Goal/ Schedule: Hold a presentation open to the public in May or June at three key locations throughout the state each year to maximize ability for public and watershed advocacy groups from across the state to attend. Track and record comments received.

BMP 2-4: Annual Newsletter to Members in Partnership and Friends Database– DCR will send an annual newsletter to the groups/ people listed on their partnership and friends' database. This database includes all groups/ people who have expressed interest on working together with DCR on watershed/ reservoir/ park projects. The newsletter will discuss the water resource related projects, including storm water projects, undertaken by DCR in the previous year and upcoming projects.

Measurable Goal/ Schedule: Send annual newsletter.

BMP 2-5: Storm Water Related Concerns Reported on DCR Web Page – DCR's web site includes a place for the public to notify DCR of problems including those related to storm water, construction or erosion control problems. Once a comment is submitted under the "Contact Us" link to mass.parks@state.ma.us, the issue is reviewed by a DCR External Affairs staff member and forwarded to the appropriate division for response. The response to the concern is tracked by External Affairs until resolved.

Measurable Goal/ Schedule: Continue to provide this link and include on storm water web page created under BMP 1-1.

BMP 2-6: DCR Stewardship Council –The Department of Conservation and Recreation (DCR) Stewardship Council is a thirteen member citizen council appointed by the Governor. The Stewardship Council shall develop an oversight strategy of park management plans, capital planning and policy development. Also, the Commissioner of Conservation and Recreation shall submit management plans to the Stewardship Council for the Council's adoption with respect to all reservations, parks, and forests under the management of the Department, regardless of whether such reservations, parks, or forests lie within the urban parks district or outside the urban parks district. Said management plans shall include guidelines for the operation and land stewardship of the aforementioned reservations, parks and forests, shall provide for the protection and stewardship of natural and cultural resources and shall ensure consistency between recreation, resource protection, and sustainable forest management.

Measurable Goal/ Schedule: Continue to provide this forum. Look for opportunities to use this forum to provide public participation and interaction for this permit on an agency wide basis.

BMP 2-7: Massachusetts Water Resources Commission (MWRC) – The MWRC is a Commission within the Executive Office of Environmental Affairs which consists of the Secretary of Environmental Affairs as chair, the Commissioner of the Department of Environmental Protection, the Commissioner of the Department of Conservation and Recreation, the Commissioner of the Department of Fish and Game, the Commissioner of the Department of Food and Agriculture, and the Director of Housing and Community Development, all of whom serve ex officio, and 5 members appointed by the Governor. The 5 appointees each represent a major type of water user, at least one area of water resource management and one member of the groundwater industry and represent state and environmental interest.

The responsibilities and duties of the commission include:

(a) development of a water resources management policy framework within which the water resource policies, plans and management programs of the several Agencies and Departments under the Secretary shall function;

(b) coordination of water resources planning and management functions among the several Agencies and Departments under the Secretary;

(c) review and comment on all policies brought before the commission;

(d) annual review and comment on all programs relating to water resource management of the several Agencies and Departments under the Secretary;

(e) establishment of criteria and priorities for all water resource-related cooperative programs with the Federal Government, with any other State, or with any Executive Office, Department, or Division of the Commonwealth;

(f) development and periodic updating of comprehensive water resource management plans for river basins, giving consideration to regional and statewide needs and to integration of waste-water management into water resource planning;

(g) development of water allocation criteria which takes into account demographic, hydrologic, and environmental characteristics;

(h) development of a management information system and data processing capability for the central collection, storage and retrieval of water resource management information. Further, the commission may be responsible for dissemination of said information to the several Agencies and Departments under the Secretary, to other State Agencies and to the public on request;

(i) development of an education program which encouraged broad public participation at both municipal and regional levels, with emphasis on encouragement of long term water resource and wastewater planning and management by municipalities and by regional planning agencies;

(j) updating the Massachusetts water supply policy statement.

In addition the MWRC approves any increase over the present rate of interbasin transfers of the surface or groundwater of the river basins under the Interbasin Transfer Act,, M.G.L. Chapter 21 § 8B-8D.

DCR's Office of Water Resources provides technical and staff support to the MWRC. The DCR staff includes scientists, hydrologists and water policy specialists who undertake to oversee the activities of the Commission.

Measurable Goal/ Schedule: Continue to be involved in program and provide technical and staff support to MWRC.

BMP 2-8: Lakes and Ponds Program - The DCR Lakes and Ponds Program works with local groups and municipalities to protect, manage and restore these valuable aquatic resources. The program

provides technical assistance to communities and citizen groups, help to monitor water quality at various public beaches to ensure public safety, and provide educational materials to the public about various lake issues. The program strives to ensure a safe future for Massachusetts' waterbodies through a watershed approach and citizen education and involvement.

Measurable Goal/ Schedule: Continue to sponsor program.

2.3 Illicit Discharge Detection and Elimination

EPA Minimum Control Requirement: The NPDES Phase II permit requires the permittee to develop, implement and enforce a program to detect and eliminate illicit discharges. An illicit discharge is any discharge to a municipal separate storm sewer system (MS4) that is not composed entirely of storm water. Exceptions are discharges that have been previously permitted under NPDES, allowable non-storm water discharges described at Part I.F (see Table 4 for examples) and discharges resulting from fire fighting activities. The minimum control measures include:

(a) If not already existing, the permittee must develop a storm sewer system map. At a minimum, the map must show the location of all outfalls and the names of all waters that receive discharges from those outfalls.

Additional elements may be included on the map, such as, location of catch basins, location of manholes, and location of pipes within the system. Initial mapping should be based on all existing information available to the permittee including project plans, agency records, city records, and drainage maps. Field surveys may be necessary to verify existing records and locate all outfalls.

(b) To the extent allowable under state law, the permittee must effectively prohibit, through a regulatory mechanism, non storm water discharges into the system and implement appropriate enforcement procedures and actions. If a regulatory mechanism does not exist, development and adoption of such a mechanism must be included as part of the storm water management program.

The permittee should evaluate existing procedures, policies and authorities pertaining to connections to its separate storm sewer system. If an illicit discharger fails to comply with procedures or policies established by the agency, the permittee may seek assistance from EPA or the state environmental agency in enforcing this provision of the permit.

(c) The permittee must develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, into the system. The illicit discharge plan must contain the following elements:

i. Procedures to identify priority areas. This includes areas suspected of having illicit discharges, for example: older areas of a city, areas of high public complaints, and areas of high recreational value or high environmental value such as beaches and drinking water sources.

ii. Procedures for locating illicit discharges (i.e. visual screening of out falls for dry weather discharges, dye or smoke testing).

iii. Procedures for locating the source of the discharge and procedures for the removal of the source.

iv. Procedures for documenting actions and evaluating the impact on the sewer system subsequent to the removal.

(d) The permittee must inform users of the system and the general public of hazards associated with illegal discharges and improper waste disposal. The permittee must train field inspectors to recognize illicit discharges.

(e) The non-storm water discharges listed in EPA's Part I.F. (see Table 4 for examples) must only be addressed if they are identified as significant contributors of pollutants.

Table 4 EPA Allowable Non-Storm Water Discharges

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising groundwaters;
- Uncontaminated groundwater infiltration (e.g. highway subdrains);
- Uncontaminated pumped groundwater;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensation;
- Residential building wash waters, without detergents.
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Individual resident car washing;
- Flows from riparian habitats and wetlands;
- Dechlorinated swimming pool discharges;
- Street wash water; and

Discharges or flows from fire fighting activities occur during emergency situations. The permit does not require that fire fighting discharges be evaluated with regard to pollutant contributions and are

authorized as non-storm water discharges by the permit unless identified by EPA as significant sources of pollutant to Waters of the United States.

DCR Programs: DCR has developed the following program elements to identify illegal connections and to investigate and enforce removal of connections that are identified.

BMP 3-1: Drainage Inventory – The drainage inventory of DCR facilities within urbanized areas has been completed. This GIS map was created using a compilation of existing mapping based on facility information of record and field inventories. DCR will verify the locations (including re-surveying with GPS) and conditions of outfalls located from paper maps during the illicit discharge detection review task and the GIS map will be updated accordingly.

Measurable Goal/ Schedule: Outfalls from facilities owned and operated by DCR within urbanized areas have been located by DCR. DCR will verify the location and condition of outfalls located from paper maps during illicit discharge detection field tasks.

BMP 3-2: Drainage Inventory Specification – In order to keep the drainage outfall inventory accurate and expand it beyond urbanized areas, DCR will develop and add a Drainage Inventory Specification to future construction and redevelopment projects statewide. The specification will require that the designer or contractor provide an electronic map of the drainage system included in the project which can be added to the FAMIS asset management program discussed in Section 2.6. Redevelopment projects subject to this specification will be limited to pavement resurfacing, reclamation, shoulder widening with drainage improvements; intersection redesign; road profile improvements; drainage improvements; culvert replacement; and footprint bridge projects.

Measurable Goal/ Schedule: A Drainage Inventory Specification will be developed by the end of winter 2006. The specification will be included in contracts beginning in the Spring of 2006.

BMP 3-3: Illicit Drainage Connection Policy – DCR is creating an Illicit Drainage Connection Policy prohibiting illicit discharges to the DCR storm water system. The Policy prohibits illicit discharges to its system and sets up a procedure for notifying the dischargers of the illicit connection. The Department will notify the discharger of the illicit connection and indicate a specified date for removing the illicit connection. If this date is not met, the DCR will work with the Massachusetts Attorney General's office to provide enforcement of the policy. EPA and DEP will also be notified of the violation.

Measurable Goal/ Schedule: The policy will be finalized and issued in the fall of 2005.

BMP 3-4: Drainage Infrastructure Inventory – DCR will expand the drainage outfall inventory to include all drainage infrastructure (e.g. pipes, catch basins, manholes, water quality inlets, grit traps) on all DCR roadways, parkways and boulevards. Developing this map will aid DCR in identifying

interconnections with MS4s owned and operated by others. As interconnections are identified, a Storm Water Agreement will be developed with the other MS4 as discussed in BMP 3-8.

Measurable Goal/ Schedule: The inventory will be completed by September 2006.

BMP 3-5: Illicit Connection Sampling Program – During the outfall inventory for DCR, field work included reviewing the outfalls for signs of illicit connections. The crew teams were asked to note any suspect flows but no signs of illicit discharges were identified. Although the field inventory was not necessarily performed during dry weather conditions, DCR and ENSR felt it was an opportune time to screen the pipes for illicit flows.

For the remainder of the permit term, DCR will review twenty (20) percent of their mapped system each permit year for potential illicit connections once the Drainage Inventory has been completed (BMP 3-4). The review will be modeled after EPA's Charles River Illicit Discharge Detection and Elimination (IDDE) Protocol. The work for each drainage system reviewed will be performed in four phases as discussed below:

Phase I – Mapping: To create a prioritized list/map of potential illicit connection locations, DCR will expand upon the mapping developed in BMP 3-4 to incorporate as many of the layers suggested in the Lower Charles River IDDE which are available and/or applicable. DCR will gather sewer information from municipalities, MWRA and Boston Sewer and Water to the extent practicable in the areas where DCR has storm sewer systems. The IDDE protocol suggests the following information and features should be considered for inclusion in the mapping:

1. Infrastructure:
   - Storm sewer system (including inter-municipal and private connections where available)
   - Sanitary sewer system where they are in the nearby vicinity to the storm sewer alignment
   - Combined sewer system
   - Thematic representation of sewer material, size and age
   - Sewer flow direction and flow type (pressure vs. gravity)
   - Rim and invert elevations for select structures (for comparison with watertable and vertical separation between systems)
   - Sewer interceptor alignment(s) and connect point(s)
   - Aerial delineations of major separate storm sewer catchment areas, sanitary sewersheds, combined sewersheds, and areas served by on-site subsurface disposal systems
   - Common manholes or structures (structures serving or housing both separate storm and sanitary sewers)
   - Sanitary and storm sewer alignments served by known or suspected underdrain systems

- Sewer alignments with common trench construction and major crossings representing high potential for communication due to watertable
- Lift station (public and private), siphons, and other key sewer appurtenances
- Sewersheds or sewer alignments experiencing inadequate level of service (LOS) (with indication of reason(s))
- Location(s) of known sanitary sewer overflows (SSO) with indication of cause

2. Water Resources and Topographic Features:
   - Water bodies and watercourses identified by name
   - Seasonal high watertable elevations or sanitary sewer alignments impacted by groundwater
   - Topography
   - Digital Orthophotographs

3. O&M, Investigations, Remediation and Capital Projects
   - Alignments, dates and thematic representation of work competed (with legend) of past illicit connection investigations (e.g. flow isolation, dye testing, CCTV, etc.)
   - Locations of suspected, confirmed and corrected illicit connections (with dates and flow estimates)
   - Water quality monitoring locations with graphical indication of indicator concentrations
   - Recent and planned storm sewer infrastructure cleaning and repair projects
   - Alignments and dates of past and planned I/I investigations
   - Planned capital projects relative to utility and roadway rehabilitation or replacement
   - Proposed phasing of future IDDE investigations

Phase II – Drainage Area/ Outfall Prioritization

DCR will create an inventory of drainage systems to be reviewed during each winter. Creation of this list will begin in Permit Year 4 once DCR, or its consultant, completes large portions of the drainage infrastructure inventory (BMP 3-4). DCR will prioritize the systems to be reviewed based on the following criteria:

1. known illicit discharges,
2. suspected illicit connections based on discussion with DCR maintenance crews and EPA or ENSR's site visits during drainage inventory,
3. direct discharges to critical or impaired waters (e.g. water supplies, swimming beaches),
4. served by common/twin-invert manholes or underdrains,
5. significantly impacted by inflow or infiltration,

6. scheduled for near-term capital improvements or studies (e.g. infrastructure improvements, paving or I/I investigations), and
7. areas with increased potential for illicit connections including highly urbanized areas and commercial and industrial adjacent land owners.

The screening process is intended to rapidly establish an understanding of the potential extent and degree of illicit contributions throughout the system, especially identification of discharges of significant and immediate concern.

Once the priority list is created, DCR will begin drainage area investigations in accordance with each year's priority list. DCR will attempt to perform the investigations soon after the catchbasins have been cleaned as part of annual maintenance. This will facilitate the removal of material to the extent possible prior to the investigation. Investigations will be performed during antecedent dry weather conditions defined as 48 hours with less than 0.1 inches of rain or snowmelt.

DCR will prepare and send letters to the residents and businesses within the storm sewer's watershed. The letter will provide an overview of the project, its purpose, the activities to be performed and a number to call with any questions.

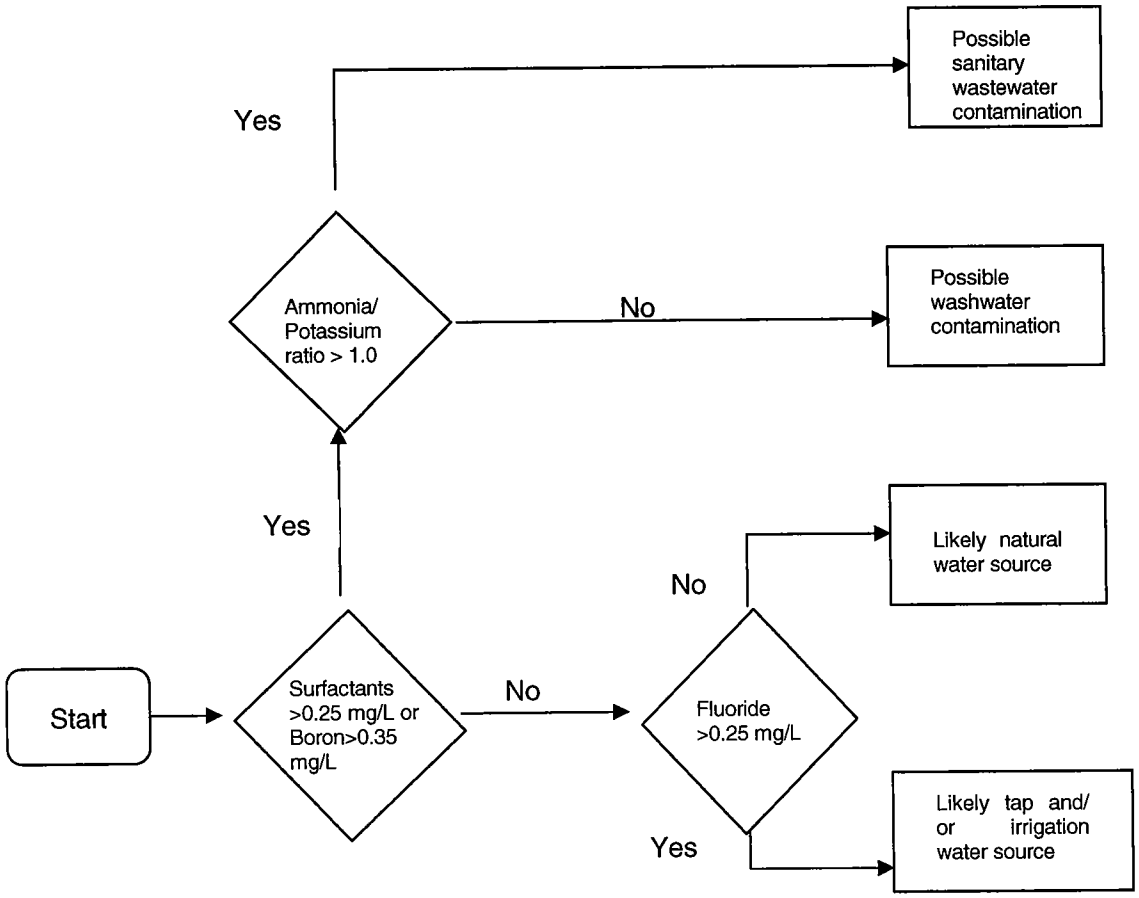
DCR will begin at the uppermost junction manhole(s) within each tributary area. A juncture manhole is a manhole where flows from two or more storm drains enter. DCR staff, or its consultant, will open drainage manholes and inspect for visual evidence of contamination after antecedent dry weather conditions are satisfied. Where flow is observed, and determined to be contaminated through visual observation (e.g. excrement or toilet paper present) or field monitoring, the tributary storm sewer alignment will be isolated for investigation. No additional downstream manhole inspections will be performed unless the observed flow is determined to be uncontaminated or until all upstream illicit connections are identified and removed.

Where flow is not observed in a junction manhole, all inlets to the structure will be partially dammed for the next 48 hours when no precipitation is forecasted. DCR will dam inlets by blocking a minimal percentage (approximately 20%+/- depending on pipe slope) of the pipe diameter at the invert using sandbags or other temporary barriers. The manholes will be re-inspected (prior to any precipitation or snow melt) for the capture of periodic or intermittent flows behind any of the inlet dams. Any captured flow will be visually observed and field tested. If contamination is identified, DCR will take all necessary actions to identify the source and remove the discharge prior to inspecting downstream manholes.

When flow is observed, it will first be reviewed for obvious olfactory evidence of contamination. If contamination is not obvious, the field staff will collect and analyze samples with field instruments. DCR will then compare measured values with benchmark values using the flow chart in Figure 3 to determine the likely prominent source of the flow. Benchmark values may be refined over the course

of investigations when compared with actual incidences of observed flow sources. If an industrial batch discharge is suspected in periodic or intermittent flow, DCR will include additional laboratory testing (e.g. toxicity, metals, etc.).

Figure 3: Flow Chart for Determining Likely Source of Discharge (Pitt, 2004)



If the source of the flow is determined to be washwater, tap water or sanitary wastewater, DCR will perform targeted internal plumbing inspections/ dye testing or CCTV inspections to efficiently confirm discrete flow sources. First, a section of the storm drain will be isolated for further testing by opening manholes upstream of the juncture manhole to look for evidence of contamination until an uncontaminated manhole is identified. DCR will identify the buildings between the uncontaminated manhole and the downstream contaminated manhole and notify the owners by mail that their buildings and houses will be tested. Once the source is identified, the property owner will be notified of the problem by DCR and the illicit discharge will be discontinued. If the property owner fails to correct the problem in a timely fashion and effective manner, DCR will coordinate with the municipal DPW and

disconnect the connection. If the source of the flow is from a DCR property, correcting the illegal connection will become a priority project for the Department.

After completing the removal of the illicit discharge and before beginning the investigation of downstream areas, the subdrainage area will be re-inspected to verify corrections. The manhole will again be reviewed during antecedent conditions and the inlet dammed and re-inspected after 48 hours of dry weather conditions to verify that the flow has been removed.

Since verification of illicit discharges removals is required prior to progressing downstream through the sewer system, DCR will provide adequate staffing and equipment resources to initiate investigations in other sub-areas to facilitate progress while awaiting completion of corrections.

Measurable Goal/ Schedule: Review twenty (20) percent of DCR's mapped system each permit year starting in Permit Year 4. This review will begin once DCR, or its consultant, completes large portions of the drainage infrastructure inventory (BMP 3-4) and will focus on the systems outlined in the list of priority areas above. DCR will identify the systems reviewed, the outcome of the reviews and any proposed follow up work in each annual report. The annual report will also include the priority areas list for the next permit year.

BMP 3-6: Illicit Discharge Flyers – Develop informational flyers to inform public of hazard associated with illicit discharges and improper waste disposal. Discuss with MWRA the possibility of sending flyers through water/ sewer mailing to inform public of hazards associated with illicit discharges and improper waste disposal.

Measurable Goal/ Schedule: Develop flyers during Winter of 2006. Discuss with MWRA dissemination of flyers through water/ sewer bill mailing. Mail flyer once every two years. Post flyer on DCR storm water web site.

BMP 3-7: Drainage Tie-In Standard Operating Practice - DCR will develop a Standard Operating Practice (SOP) to address drainage tie-ins from private entities to the department's MS4s. Applicants who wish to connect to DCR's drainage system are currently required to apply for a permit. The DCR's SOP will incorporate the submittal information currently required, including review of capacity within the receiving drainage system, and indicate that the discharge must meet Massachusetts Storm Water Policy guidelines.

Measurable Goal/ Schedule: The Policy will be created and issued by the winter of 2007.

BMP 3-8: Develop Storm Water Agreements with Municipal Storm Water Contributors –. When discharges from municipalities into a DCR MS4 are identified during field work or projects, DCR will work with the municipality to develop a control agreement or memo of understanding (MOU) regarding

maintenance, water quality, sharing the mapping of interconnections and resolving issues (e.g. illicit connections) associated with the interconnections. DCR will develop a protocol for reviewing these interconnections.

Measurable Goal/ Schedule: DCR will develop the protocol for reviewing interconnections by Spring 2006. Storm water agreements will be created as contributors are identified during field inventories or project related work.

2.4 Construction Site Runoff Control

EPA Minimum Control Requirement: The NPDES Phase II permit requires the permittee to develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The permittee must include disturbances less than one acre if part of a larger common plan.

The permittee does not need to apply its construction program provisions to projects that receive a waiver from EPA under the provisions of 40 CFR§122.26(b)(15)(i).

At a minimum, the program must include:

(a) To the extent allowable under state law, a regulatory mechanism to require sediment and erosion control at construction sites. If such a mechanism does not exist, development and adoption of a mechanism must be part of the program. If attempts to enforce this part of their program are ineffective, the permittee may seek assistance from EPA or the state agency for enforcement of this provision.

(b) Sanctions to ensure compliance with the program. Sanctions may include both monetary or non-monetary penalties. The permittee can consider withholding payment to contractors who fail to implement appropriate sediment and erosion control plans.

(c) Requirements for construction site operators to implement a sediment and erosion control program that includes best management practices that are appropriate for the conditions at the construction site. The Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas may be used as a tool to implement this provision.

(d) Require control of wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes.

(e) Procedures for site plan review including procedures which incorporate consideration of potential water quality impacts. The site plan review should include procedures for pre-construction review.

(f) procedures for receipt and consideration of information submitted by the public. This may include the opportunities for public comment during the project development process.

(g) Procedures for inspections and enforcement of control measures at construction sites.

DCR Programs: DCR is responsible for the construction and maintenance of DCR parkways and facilities. DCR understands the importance of managing construction projects in an environmentally sensitive manner and the potential for significant pollution to occur if proper erosion and sediment controls are not implemented and maintained during construction. DCR has many programs already in place and will add more programs to strengthen its commitment to reducing pollution from construction sites – these programs are summarized below:

BMP 4-1: NPDES Storm Water Construction General Permit -- In Massachusetts, the EPA is the responsible for issuing coverage of discharges from construction sites under the NPDES construction general permit. This permit is required for all construction sites which disturb more than one acre during the overall development. The key condition of the CGP is the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP includes outlining the sediment and erosion control measures to be implemented on the project.

Measurable Goal/ Schedule: DCR will review all fiscal year 2006 projects and submit NOI permit applications during the fall of 2005 for construction projects which disturb more than one acre and are not currently covered by a the construction general permit. DCR will summarize the number of construction sites which filed for coverage under the Construction General Permit each year. DCR commits to fully meeting the requirements of the permit at all sites which disturb more than once acre.

BMP 4-2: Contract Bid Item and Special Provisions – DCR will prepare a Contract Bid Item and Special Provision for inclusion in construction contracts to be advertised for bids which exceed the one-acre disturbance threshold. The Bid Item and Special Provision will address preparation of a Storm Water Pollution Prevention Plan (SWPPP) and compliance with the Construction General Permit provisions. When EPA sunsets the Construction General Permit, this bid item and special provision will continue to require the same level of erosion and sediment control at DCR sites. The specification will also reference the construction erosion and sediment control guidelines outlined in the Storm Water Handbook which will mimic those in the Construction General Permit.

Measurable Goal/ Schedule: DCR will finalize this bid item and special provision by the end of Winter 2006. The item will be included in all new projects which disturb more than one acre bid after that time.

BMP 4-3: Construction Storm Water Pollution Prevention Plan (SWPPP) Template - DCR has begun to prepare a Storm Water Pollution Prevention Plan (SWPPP) template for use by Contractors and/or DCR on DCR construction projects. The template will be placed on the DCR website for downloading by Contractors.

Measurable Goal/ Schedule: Develop Construction SWPPP Template by February 2006.

BMP 4-4: Construction Site Monitoring – DCR will continue to staff each construction project with either a Resident Engineer (RE) or Inspector. Their responsibilities will include completion of the weekly NPDES Construction General Permit inspections when required. DCR will actively pursue compliance with the general permit.

Measurable Goal/ Schedule: DCR will continue to staff each project at these levels.

BMP 4-5: On-going Construction Projects Web Page – DCR will continue to maintain the construction related web page that includes information regarding on-going DCR construction projects (http://www.mass.gov/dcr/construction.htm).

Measurable Goal/ Schedule: Continue to maintain web site.

BMP 4-6: Annual Erosion and Sediment Control Training – DCR will provide annual training to DCR construction management staff on erosion and sediment controls.

Measurable Goal/ Schedule: DCR will provide annual training to all construction management staff. The annual report will include a summary of the number of attendees, topics covered and training dates.

BMP 4-7: Add VMP Requirements to Restoration Specification – DCR will add the Vegetation Management Practices (VMP) requirements to the restoration specification.

Measurable Goal/ Schedule: DCR will begin to include the VMP requirements in new projects by spring 2006.

BMP 4-8: Technical Assistance to Conservation Commissions – DCR provides technical assistance to Conservation Commissions within municipalities included in the Division of Water Supply Protection's watersheds. Conservation Commissions are encouraged to request written comments from the DCR on projects which may impact their reservoirs.

Measurable Goal/ Schedule: Continue to provide technical assistance and the staffing level necessary to provide timely responses.

2.5 Post-Construction Runoff Control

EPA Minimum Control Requirement: The general permit requires that the permittee must develop, implement and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than one acre and discharge into the MS4. The program must include projects less than one acre if the project is part of a larger common plan of development.

The general permit indicates that the program must include:

(a) To the extent allowable under state law, a regulatory mechanism to address post construction runoff from new development and redevelopment. If such a mechanism does not exist, development and adoption of a mechanism must be part of the program. If attempts to enforce this provision of the program are ineffective, the permittee may seek assistance from EPA or the state agency in enforcing this provision.

(b) Procedures to ensure adequate long term operation and maintenance of best management practices.

(c) Procedures to ensure that any controls that are in place will prevent or minimize impacts to water quality.

DCR Programs: DCR designs all proposed projects within its parkways, roadways and/or facilities to meet all state and federal regulations. Most projects are subject to the Wetlands Protection Act (WPA) in Massachusetts and therefore must have their storm water treatment system designed to meet the MA Stormwater Management Policy. This policy provides criteria to reduce the pollutants discharging to the Commonwealth's waterbodies. Through development of a Storm Water Handbook, DCR plans to provide guidance on meeting the Policy guidelines at DCR facilities and extending these design guidelines to all DCR projects. The development of the Handbook in addition to the on-going programs described below will provide a strong post-construction runoff control program.

BMP 5-1: MA DEP Stormwater Management Policy -- Most new construction and redevelopment activities undertaken by DCR are currently subject to the Massachusetts DEP's Stormwater Management Policy and Performance Standards through the Wetlands Protection Act (WPA). Projects within 200-feet of a perennial stream or 100 feet of a wetland resource area are subject to the WPA. The DEP Stormwater Management Policy meets the minimum requirements set forth by the EPA for construction runoff control. DCR will begin to apply the Stormwater Management Policy Performance Standards to all projects regardless if they are subject to the WPA. As standard practice, DCR employs the use of sediment and erosion control measures throughout its construction projects.

Measurable Goal/ Schedule: Apply Stormwater Management Policy Performance Standards to all development/ redevelopment projects.

BMP 5-2: DCR Storm Water Handbook – DCR is in the process of creating a Storm Water Handbook for roadway designers, public works personnel, and other people involved in the design, permitting, review, and construction of projects for DCR. The handbook will be tailored from the MassHighway Storm Water Handbook, recently approved by DEP, to address DCR parkways and expanded to address facility related projects and construction projects. The objective of this Handbook is to provide guidance in the development of cost-effective storm water management strategies for proposed highway and facility projects to comply with the DEP Stormwater Management Policy and to continue the Construction General Permit requirements during construction. Design criteria will include:

- designing groundwater recharge BMPs in high or medium stress level basins;
- minimizing the loss of annual recharge to groundwater from new development and redevelopment consistent with Performance Standard No. 3 of MA DEP's Stormwater Policy;
- require that projects with post-construction BMPs submit Operation and Maintenance plans consistent with Performance Standard No. 9 of MA DEP's Stormwater Policy;
- protocol for illicit connection identification and procedures for removing connection;
- construction erosion and sediment control practices to meet Standard 8 of the MA Storm Water Policy; and
- Low Impact Development (LID) practices.

Measurable Goal/ Schedule: DCR will create and issue this Handbook by the end of August 2006.

BMP 5-3: Storm Water Handbook Training – Once the DCR Storm Water Handbook is issued, DCR will provide training seminars for staff members to educate them on the Handbook.

Measurable Goal/ Schedule: DCR will provide annual training each winter once the Handbook is issued.

BMP 5-4: BMP Long-Term Operation and Maintenance – DCR has committed the budget necessary to provide long-term maintenance of BMPS on the Maintenance Activity Schedule (BMP 6-18).

Measurable Goal/ Schedule: DCR has committed 1.9 million dollars a year in the budget for drainage system operation and maintenance for the next three years.

BMP 5-5 and 5-6: Silver Lake Demonstration Projects – The Town of Wilmington and DCR are collaborating on a series of Silver Lake Demonstration projects which will use low-impact development techniques to improve the water's quality by reducing polluted storm water runoff that currently discharges to the lake.

The first project (BMP 5-5) will include:

- the addition of landscaped areas designed as filter berms which use special soils and plantings to retain and filter storm water;
- replacing direct storm drain discharges into the lake with overland flow;
- reconstructing the parking lot for Silver Lake using two types of porous paving materials which allow storm water to drain in to the ground instead of discharging directly to the lake; and
- elimination of a goose habitat – goose droppings on the lawn are considered a source of the natural bacteria that has polluted the lake in the past.

Measurable Goal/ Schedule: Design and permitting of the Low Impact Development techniques project are on-going. Construction is slated to begin in September 2005 and continue through the fall of 2006.

A second project (BMP 5-6) includes rain water harvesting. The_DCR and the Town of Wilmington, through a grant from EPA, are offering rainwater harvesting systems consisting of tanks that collect rainwater from rooftop downspouts and then store the water for late use outdoors, such as in the lawn or garden. These systems are being offered by a random lottery of Wilmington residents but the Town hopes to place most in the Silver Lake watershed.

Measurable Goal/ Schedule: Complete distribution of rain water harvesting systems.

BMP 5-7: Walden Pond Storm Water Improvements- Walden Pond, a kettle hole and public swimming area, is bounded on the northerly side by a busy town owned road and the state park parking lot. Storm water flows from the parking lot to the road catch basins and is then piped to the pond. The parking lot is made up of several separate paved areas with many wooded traffic islands having a pervious gravel subgrade. Selected unpaved areas were cleaned, regraded, swaled and excavated for retention basins to maximize infiltration. DCR is in the process of designing and installing new catch basins, piping and infiltrators to replace and eliminate the old piped system to the pond.

Measurable Goal/ Schedule: Complete installation of storm water improvements.

2.6 Pollution Prevention/Good Housekeeping

EPA Minimum Control Requirement: In recognition of the benefits of pollution prevention practices, the NPDES Phase II permit requires an operator of a regulated MS4 to:

(a) Develop and implement a program with a goal of preventing and/or reducing pollutant runoff from transportation and community/facility operations. The program must include an employee-training component.

(b) Include, at a minimum, maintenance activities for the following facilities associated with the transportation system: rest areas along interstates; weigh stations; material storage yards; new construction and land disturbance; roadway drainage system maintenance, and storm water system maintenance and the following non-traditional systems: parks and open space; fleet maintenance, building maintenance; new construction and land disturbance; road way drainage system maintenance, and storm water system maintenance.

(c) Develop schedules for maintenance activities described in paragraph (b) above.

(d) Develop inspection procedures and schedules for long term structural controls.

DCR Programs: DCR employs pollution prevention/ good housekeeping policies at each of its facilities. As described in the programs below, DCR will work during the permit term to formalize pollution prevention/ good housekeeping policies and make sure they are standardized for state wide implementation. DCR will also implement regular review of facilities to identify erosion or storm water problems and rectify. The following is a summary of those programs:

BMP 6-1: Vehicle Washing Policy – DCR will maintain its current policy on vehicle washing which requires DCR vehicles to be washed at off-site stations. DCR will formalize the policy into a written agency-wide SOP.

Measurable Goal/ Schedule: Maintain current policy. Formalize written SOP by February 28, 2006 and implement.

BMP 6-2: Floor Drain Policy – DCR will maintain its current policy formalized under the Clean State Initiative on floor drain use and servicing.

Measurable Goal/ Schedule: Maintain current policy. Formalize written SOP by February 28, 2006 and implement.

BMP 6-3: Catch Basin Cleaning Policy – DCR will develop an agency wide written plan for regular catch basin cleaning. The SOP will document cleaning of catch basins on an annual schedule and prioritize areas to be cleaned based on the sensitivity of the area and receiving waters.

Measurable Goal/ Schedule: Formalize written SOP by February 28, 2006 and begin to implement.

BMP 6-4: Catch Basin Inspection/ Repair Policy – DCR will develop an agency wide written plan for inspection and repair of catch basins. The SOP will formalize a schedule for catch basin inspections and provide guidelines for prioritizing the repair of those catch basins in need of repair. DCR will maintain records that document catch basin inspection and cleaning (as well as any maintenance activities for other drainage structures), including executed contracts, certificates of completion, contractor invoices, or other types of maintenance logs.

Measurable Goal/ Schedule: Formalize written SOP by February 28, 2006 and begin to implement.

BMP 6-5: Street Sweeping Policy – DCR will develop an agency wide written policy regarding the frequency of street sweeping at its facilities. The SOP will include guidelines for prioritizing the sweeping of roads, parkways and facility parking lots.

Measurable Goal/ Schedule: Formalize written SOP by February 28, 2006 and begin to implement.

BMP 6-6: Integrated Pest Management Policy – DCR will continue to investigate Integrate Pest Management as a pilot program in the Division of Water Supply Protection. As a general policy, DCR avoids the use of pesticides including fungicides, insecticides and herbicides.

Measurable Goal/ Schedule: The Division of Water Supply Protection will continue to investigate IPM as a pilot program.

BMP 6-7: VMP Training – Train staff on DCR's Vegetation Management Plan. The VMP outlines methods of minimizing the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers, applied by DCR's employees or contractors on DCR facilities or parkways. The training will also include landscaping and stream buffer best management practices

Measurable Goal/ Schedule: Provide training for maintenance staff once every two years.

BMP 6-8: Chemical Applications Review Meetings – DCR meets with railroad and utility companies which have property, easements or access privileges within the Division of Water Supply Protection's

(DWSP) watershed lands on an annual basis. The use of chemicals for vegetation management on the easements is discussed at these meetings and DCR reviews and approves/disapproves all chemicals to be used.

Measurable Goal/ Schedule: Continue annual meetings.

BMP 6-9: Emergency Management System (EMS) Team – The DCR subcontracts emergency spill response services to trained sub-contractors. The EMS Team responds to spills, accidents and other such emergencies on DCR property or which drains to DCR water supply reservoirs. Clean Harbors responds to spills to the Charles River and other non-reservoir waterways controlled by DCR. On parkways, DCR coordinates response activities with Massachusetts State Police and with its authorized contractors.

Measurable Goal/ Schedule: Continue to provide specialized team.

BMP 6-10: Proper Waste Disposal - DCR properly disposes of waste materials at all of its facilities and complies with all state regulations. Waste materials comprise of catch basin cleaning, street sweeping, pipe cleaning and sediment removal material from BMPs.

Measurable Goal/ Schedule: Continue to properly dispose of waste.

BMP 6-11: Beneficial Use Determination – DCR currently disposes of waste materials removed from drainage structures and storm water BMPs during maintenance in compliance with DEP's "Reuse and Disposal of Contaminated Soil at Massachusetts Landfills" DEP Policy #COMM-97-001. DCR is actively exploring options for the beneficial reuse of catch basin and street sweeping materials instead of disposing of them at landfills. DCR will prepare a plan for the alternate use of the materials for review by DEP.

Measurable Goal/ Schedule: Prepare plan for review by DEP by the end of the Winter of 2007.

BMP 6-12: Maintain Spill Prevention Control and Countermeasure Plans (SPCC) – DCR has prepared site specific SPCC plans for each of its facilities subject to the Industrial Multi-Sector General Permit. These facilities include:

1. Charles River Dam (Boston/Charlestown)
2. Amelia Earheart Dam (Everett/Somerville)
3. Stoneham North Central Garage/ Central Supply
4. Devine Rink

The plans indicate the operation and maintenance measures which should be followed at the site to maintain compliance with the permit. DCR will continue to maintain compliance with the requirements in these plans.

Measurable Goal/ Schedule: Maintain compliance with SPCC plans.

BMP 6-13: Roadway and Drainage Infrastructure Assessment – DCR will perform a state wide assessment of its roadway and infrastructure conditions each year. DCR will create an assessment report summarizing the drainage infrastructure and roadway in need of repair and/ or maintenance. This report will be used to set maintenance budgets for the following year. The report will also summarize the actions taken to address areas identified in the previous year's report.

Measurable Goal/ Schedule: Perform a pilot project in select areas during the fall of 2005. Begin agency-wide assessment of roadway and drainage infrastructure report annually during the fall of 2006.

BMP 6-14: CB Repair/ Discharge Pipe Cleaning Needs Assessment – During annual CB cleaning, DCR will perform an assessment of the condition and cleaning requirements of visible proximate DCR lateral piping and catch basin repair needs for it's state wide drainage system. Annual reports will summarize piping requiring cleaning and catch basin to be repaired. This report will be used to set repair budgets for the following year. The annual report will also report on progress from the previous year's needs assessment report.

Measurable Goal/ Schedule: Create an annual catch basin repair and lateral pipe cleaning assessment of DCR's drainage system.

BMP 6-15: Wet Weather Review and Repairs – DCR will perform an annual review of roads and parking lots within urbanized areas during wet weather conditions to identify areas of ponding or flooding each year. From this review, DCR will develop a priority list, budget and schedule for necessary repairs identified. This repair budget will be included in the following year's requested budget. The annual report will also report on progress from the previous year's review.

Measurable Goal/ Schedule: Create an annual wet weather review report.

BMP 6-16: Implement Short Term Measures Identified for Fenway, Riverway, Jamaica Way and Blue Hill Parkway – CLF and CRWA identified some areas of known problems to EPA during DCR's development of the SWMP. The actions requested included:

- Assess condition of curbing and pavement along Fenway, Riverway and Jamaica Way (especially in the Leverett Pond area) to determine whether there are measures that could

be implemented in the short term to address such conditions and resultant conditions including ponding on roads resulting in repeated splashing causing erosion;

- Assess Blue Hill Parkway in the area of the Pine Tree Brook where storm water discharges through a manhole directly into the brook to determine whether there are measures that could be implemented in the short term to address such conditions; and
- GPS locate areas in need of future work based upon the above assessments.

Preliminary assessment of the curbing and pavement along Fenway, Riverway and Jamaicaway was performed by DCR staff during June 2005. The assessment indicated a number of problematic catch basins with poorly draining lateral piping. Poor functioning of catch basins is partly related to the extensive tree canopy along the parkways with structures clogged by fallen leaves being a frequent problem. Obstruction or failure of lateral piping from catch basins was identified in several areas along the Fenway and Riverway. Further consideration of issues associated with the drainage system in this area, including the roles of DCR and other stakeholders' needs to be reviewed and addressed.

Measurable Goal/ Schedule: DCR will continue to follow up on these concerns and summarize its progress on addressing these issues in periodic reports to CLF and CRWA until the issues are fully addressed.

BMP 6-17: Maintenance Tracking System – DCR is developing a maintenance tracking system (FAMIS) which will record information on DCR assets (e.g. catch basins, manholes, signs, pavement, etc.) including location, condition, maintenance schedule, maintenance performed, repairs performed, etc. The storm water infrastructure information inventoried in BMP 3-4 will be added to this system. System will include inspection/ maintenance schedule and create reports of BMPs that are "scheduled" for maintenance.

Measurable Goal/ Schedule: The tracking system is scheduled for roll-out to DCR staff during the fall of 2005. Storm water infrastructure will be added to the system and the maintenance activity schedule integrated into the program by June of 2006.

BMP 6-18: Maintenance Activity Schedule – DCR has created the following maintenance activity schedule to formalize their inspection and maintenance schedule. This schedule will be integrated into SOPs when written and the Storm Water Handbook.

Measurable Goal/ Schedule: Maintain infrastructure and roadways in compliance with maintenance activity schedule.

Table 5 DCR Maintenance Activity Schedule

Maintenance Activity	Inspection Schedule			Cleaning Schedule					Notes
	Weekly	Twice a Year	Annual	Daily	Every Two Months	Annual	Every 2 years	Per Inspection Recmndn.	
Street Sweeping - Parkways					X				Swept every two months from April to October
Street Sweeping - All other facilities						X			
Street Sweeping – Priority Beaches				X					During Summer Season
Catch Basins/ Ancillary Piping-Parkways			X			X			
Catch Basins/ Ancillary Piping - All other facilities							X		
Catch Basin Rehabilitation and Repair			X					X	
Detention Ponds			X					X	
Water Quality Swales			X					X	
Drainage Swales			X					X	
Water Quality Inlets		X						X	
Infiltration Systems		X						X	
Material Storage Yards			X						
New Construction – NPDES Compliance	X							X	
Parks – Review for Erosion/ SW Issues	X							X	
Fleet Maintenance		X?						X	
Building Maintenance	X							X	
Rinks – Review for Erosion/ SW Issues	X					X		X	
Pools – Review for Erosion/SW Issues	X					X		X	

3.0 ADDITIONAL REQUIREMENTS

3.1 General

Parts I, V and IX of the General Permit include additional requirements beyond the minimum control measures discussed in Section 3.0. The following sections describe in greater detail each of the additional requirements and how DCR will comply with the requirements during the permit term.

3.2 Endangered Species Act

General Permit Requirement: Part I.B.2(a) of the general permit states that discharges or discharge related activities can only be covered by this permit if they meet the following requirements:

i. Coverage under this permit is available only if the storm water discharges, allowable non-storm water discharges, and discharge related activities are not likely to jeopardize the continued existence of any species that are listed as endangered or threatened ("listed") under the ESA or result in the adverse modification or destruction of habitat that is designated as critical under the ESA ("critical habitat"). Submission of a signed NOI will be deemed to constitute certification of eligibility.

ii. "Discharge related activities" include: activities which cause, contribute to, or result in storm water point source pollutant discharges; and measures to control storm water discharges, including the siting, construction and operation of best management practices (BMPs) to control, reduce or prevent storm water pollution.

iii. In order to demonstrate eligibility, the permittee must use the most recent Endangered and Threatened Species County-Species List available from EPA. Eligibility must be determined prior to submission of the NOI. The most current list is available at http://www.epa.gov/npdes/. The permittee must meet one or more of the criteria described below for the entire term of the permit. The information used to determine eligibility must be maintained as part of the Storm Water Management Program.

- Criteria A: No endangered or threatened species or critical habitat are in proximity to the MS4 or the point where authorized discharges reach the receiving waters; or
- Criteria B: In the course of a separate federal action involving the MS4, formal or informal consultation with the Fish and Wildlife Service (FWS) and/or the National Marine Fisheries Service (NMFS) under Section 7 of the ESA has been concluded and that consultation:

- Addressed the effects of the MS4 storm water discharges, allowable non-storm water discharges, and discharge related activities on listed species and critical habitat; and

- The consultation resulted in either a no jeopardy opinion or a written concurrence by FWS and/or NMFS on a finding that the storm water discharges, allowable non-storm water discharges, and discharge related activities are not likely to adversely affect listed species or critical habitat; or

- Criteria C: The activities are authorized under Section 10 of the ESA and that authorization addresses the effects of the storm water discharges, allowable non-storm water discharges, and discharge related activities on listed species and critical habitat; or

- Criteria D: Using best judgment and knowledge, the effects of the storm water discharges, allowable non-storm water discharges, and discharge related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by the permittee that there is no reason to believe that the storm water discharges, allowable non-storm water discharges, and discharge related activities will jeopardize the continued existence of any species or result in the adverse modification or destruction of critical habitat; or

- Criteria E: The storm water discharges, allowable non-storm water discharges, and discharge related activities were already addressed in another operator's certification of eligibility which includes the MS4 activities. If certification is under this criterion, the permittee agrees to comply with any measures or controls upon which the other operator's certification was based.

iv. The permitting authority may require any permittee or applicant to provide documentation of the determination of eligibility for this permit where the EPA or the FWS and/or NMFS determines that there is a potential impact on listed species or critical habitat.

v. A discharge is not authorized if the discharge or discharge related activities cause a prohibited "take" of endangered or threatened species (as defined under Section 3 of the ESA and 50 CFR 17.3), unless such actions are authorized under sections 7 or 10 of the ESA.

vi. Discharges are not authorized where the discharge or discharge related activity are likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the ESA or result in the adverse modification or destruction of habitat that is designated as critical under the ESA.

DEP Requirement: According to Part IX.C.1 of the General Permit, the permittee shall comply with the Massachusetts Endangered Species Act (MESA) (MGL c, 131A and regulations at 321 CMR

10.00) and any actions undertaken to comply with this storm water permit shall not result in non-compliance with MESA.

DCR Programs: Figure 4 illustrates the DCR facilities that are located within urbanized areas and within areas designated as potential habitat for the shortnose sturgeon or dwarf wedge mussel (federally listed species). These are the two federal species of concern currently identified during EPA's consultation with Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS). DCR will continue to review outfalls identified in urbanized areas to determine if they have an adverse impact on federal or state endangered species as described in the programs below:

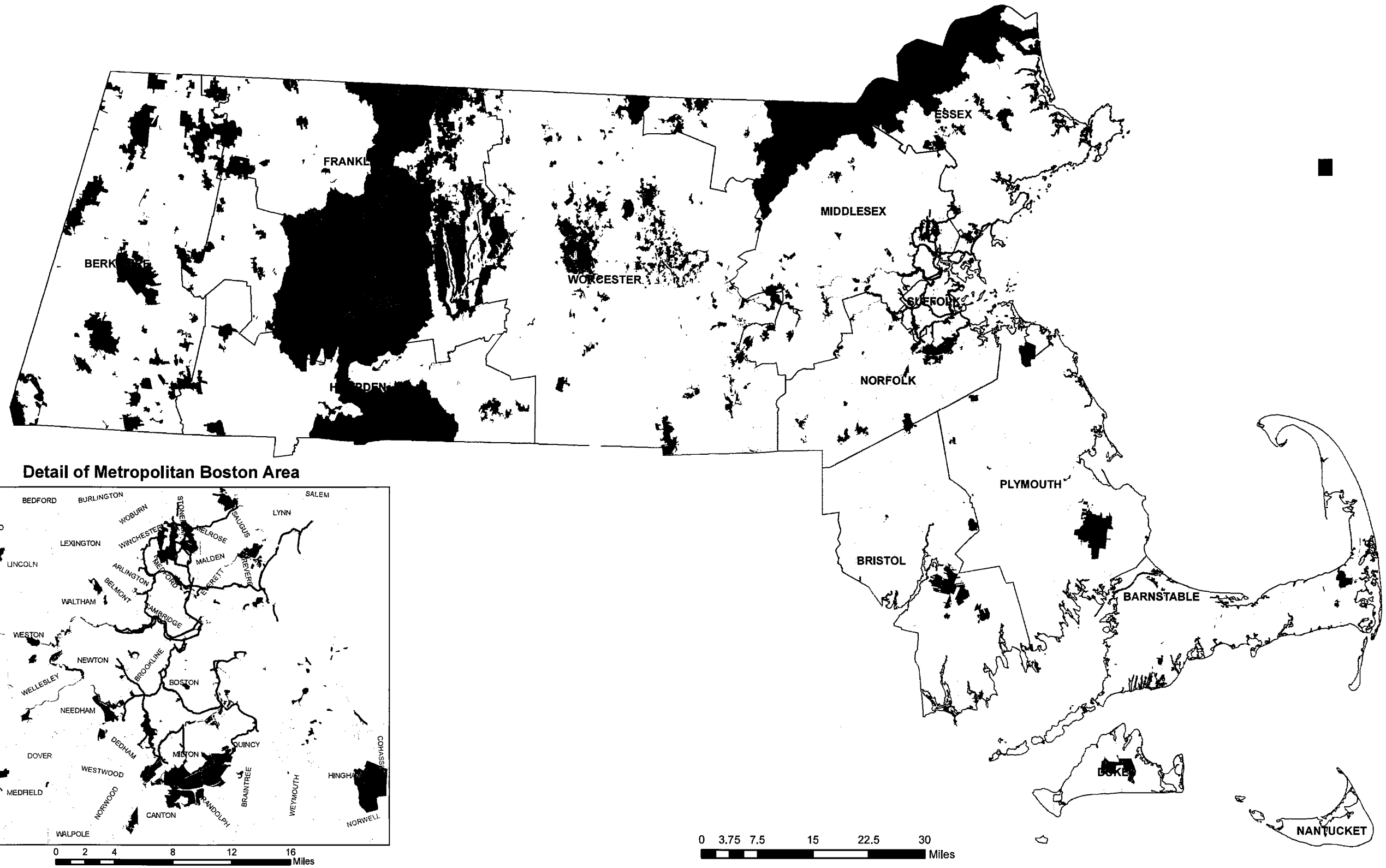
BMP 7-1: Wetland Protection Act Compliance – Most projects undertaken by DCR are subject to the Wetland Protection Act (WPA). As required by the Wetland Protection Regulations under this Act, DCR or its consultant submits a Notice of Intent for review by the local Conservation Commission and DEP. Part of this submittal includes compliance with the Massachusetts Endangered Species Act (MESA). DCR routinely contacts Massachusetts Natural Heritage and Endangered Species Program (NHESP) and US Fish and Wildlife to review the projects if they are in the vicinity of endangered species habitat, in order to assess whether the project could potentially impact federal or state endangered species habitat. If a potential impact is identified, DCR works with the agencies to design the project to minimize the impacts.

Measurable Goal/ Schedule: Continue to comply with WPA.

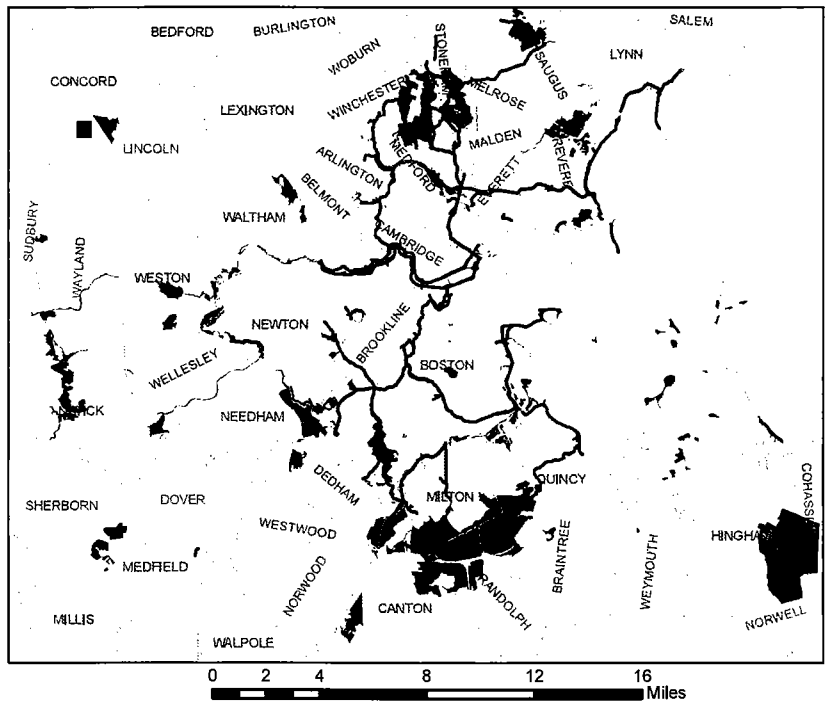
BMP 7-2: 401 Water Quality Certification – Certain bridge projects are exempt from the Wetlands Protection Act but are subject to the state 401 Water Quality Certification. As part of this certification application, DCR must review compliance with MESA (Massachusetts Endangered Species Act). The projects are reviewed with Massachusetts Natural Heritage and Endangered Species Act Program (NHESP) and US Fish and Wildlife if endangered species habitat is mapped in the vicinity of the project. If the agencies identify a potential impact, DCR works with the agencies to modify the project design to minimize the impacts.

Measurable Goal/ Schedule: Continue to comply with 401 Water Quality Certification.

BMP 7-3: Review of Drainage Outfall Inventory with Federal and State Listed Habitat- DCR will review the recently completed urbanized area drainage outfall inventory with the federal and state listed species GIS coverage to determine areas where DCR outfalls are located within critical habitat. DCR will review these areas with Massachusetts Natural Heritage and Endangered Species Act Program (NHESP) to determine if the outfall has a potential adverse impact on the species. DCR is not currently aware of any discharges which are impacting federal or state-listed endangered species habitat. If potential adverse impacts are identified by NHESP, DCR will work with the NHESP to address the impacts.



Detail of Metropolitan Boston Area



Legend

- Urbanized Area
- DCR Facility in UA
- DCR Facility Outside UA
- Watershed to Fed. T&E Species Habitat

DCR Facilities and Roads Located in Urbanized Areas with Federally Listed Endangered Species Habitat Short Nose Sturgeon and Dwarf Wedge Mussel

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Measurable Goal/ Schedule: Create summary of drainage outfalls within urbanized areas which are located within critical habitat according to state and federal species habitat mapping by the Spring of 2006. Review outfalls within critical habitat with NHESP during the Summer of 2006. If outfalls are identified which are adversely impacting critical habitat, DCR will develop a method and schedule for remedying the impact during the Fall of 2006.

3.3 Essential Fish Habitat

General Permit Requirement: According to Part I.B.2(f), discharges whose direct or indirect impacts would jeopardize any Essential Fish Habitat will not be permitted.

EPA's *Response to Comments* (dated 5/16/03) document determined that essential fish habitat is not jeopardized by discharges in Massachusetts. No further action is necessary by DCR to comply with this requirement.

3.4 National Register of Historic Places Properties

General Permit Requirement: Part I.B.2.(g) of the general permit states that discharges, or implementation of a storm water management program, which adversely effects properties listed or eligible to be listed on the National Register of Historic Places will not be authorized by this permit. Discharges may be eligible for coverage under this permit if the permittee is in compliance with requirements of the National Historic Preservation Act and has coordinated any necessary activities to avoid or minimize impacts. These requirements must be coordinated with the State Historic Preservation Officer. Information used to determine eligibility must be maintained as part of the Storm Water Management Program.

DCR Programs: Figure 5 illustrates the DCR roads and facilities within urbanized areas and the historic properties as listed in the MassGIS datalayer. DCR will continue to review outfalls identified during the recently completed drainage inventory to determine if they potentially have an adverse impact on historic properties as described in the programs below:

BMP 7-4: Cultural Resources Review – DCR, or its consultant, reviews all projects for impacts to historic properties during the conceptual design stage. If a potential impact is found, the Department works with the designer (DCR or consultant) and consults with Massachusetts Historical Commission to alter the design to mitigate or avoid adverse effects.

Measurable Goal/ Schedule: Continue to review projects for impacts to historic properties during conceptual design stage.

BMP 7-5: Review Drainage Inventory for Potential Impacts to Historical Properties- DCR will review the recently completed drainage outfall inventory for potential impacts to historic properties listed with Massachusetts Historical Commission. Figure 5 illustrates the DCR roads and facilities within urbanized areas and the historic properties as listed in the MassGIS datalayer. DCR is not currently aware of any discharges that are impacting places listed or eligible for listing on the National Register of Historic Places. If outfalls are identified which might have a negative impact on historic properties, they will be reviewed with Mass. Historical Commission and will implement action as appropriate to maintain permit eligibility with regard to NHPA.

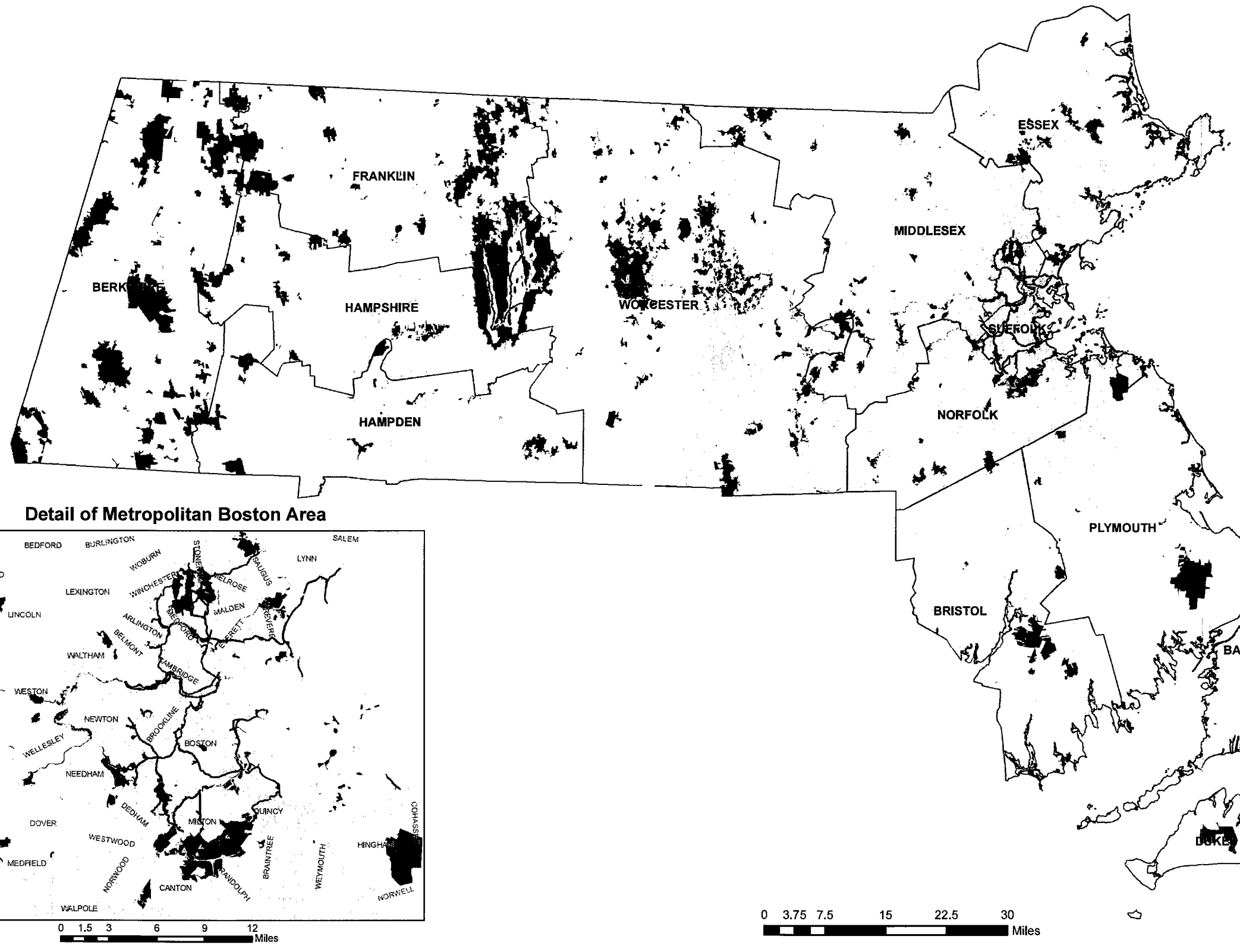
Measurable Goal/ Schedule: Create summary of drainage outfalls within urbanized areas which may be impacting historic properties by Spring 2006. Review potential impacts with Mass. Historical Commission during Summer 2006. Identify outfalls which are potentially adversely impacting historic properties and develop a method and schedule for remedying the impact during the Fall of 2006.

3.5 Discharges to Water Quality Impaired Waters

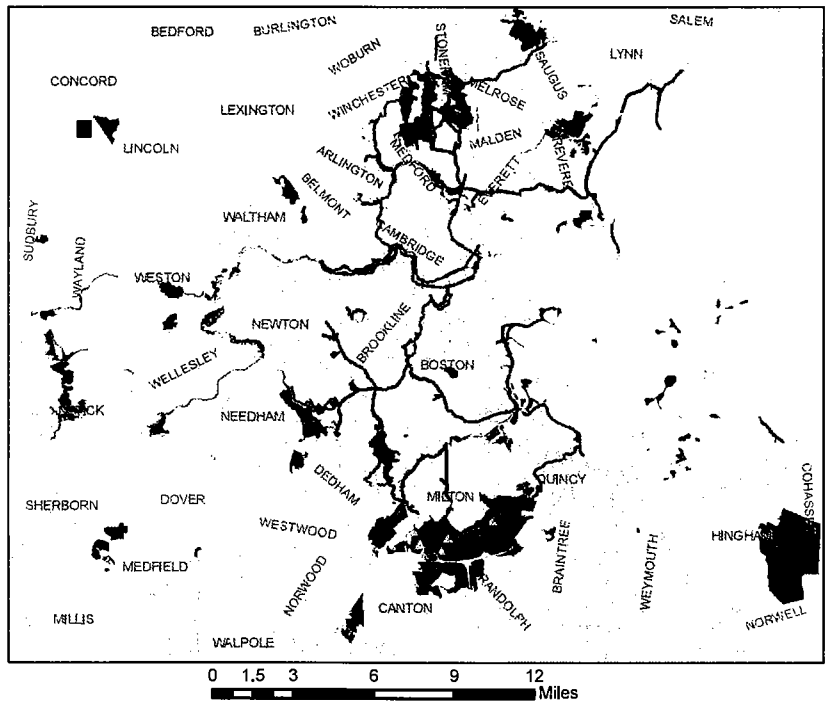
General Permit Requirement: Part I.C of the permit indicates that if a discharge from the MS4 is within the watershed of a 303(d) listed water body, then the permittee must evaluate the discharge for a series of additional requirements. Waters listed on the 303d list have been determined by Massachusetts DEP to be impaired based on monitoring data. The DEP is then responsible for creating a "pollution budget" designed to restore the health of the impaired waterbody in accordance with the Federal Clean Water Act. This pollution budget is also referred to as a Total Maximum Daily Load budget (TMDL) and includes identifying the causes (types of pollutant) and source(s) (where the pollutants come from) of the pollutant from direct discharges (point sources) and indirect discharges (non-point sources), determining the maximum amount of the pollutant that can be discharged to a specific water body to meet water quality standards, and developing a plan to meet that goal.

1. The permittee must determine whether storm water discharges from any part of the MS4 contribute; either directly or indirectly, to a 303(d) listed water body.

2. The storm water management program must include a section describing how the program will control the discharge of the pollutants of concern and ensure that the discharges will not cause an instream exceedance of the water quality standards. This discussion must specifically identify control measures and BMPs that will collectively control the discharge of the pollutant(s) of concern. Pollutant(s) of concern refer to the pollutant identified as causing the impairment.



Detail of Metropolitan Boston Area



Legend

- Urbanized Area
- DCR Facility in UA
- DCR Facility Outside UA
- Historic Properties

DCR Facilities and Roads Located in Urbanized Areas with Massachusetts Histoirc Properties

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Figure Number

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DCR Programs: Most new construction and redevelopment activities undertaken by DCR are currently subject to the MA DEP's Stormwater Management Policy and Performance Standards (BMP 5-1) through the Wetlands Protection Act and Clean Water Act Section 401 Water Quality Certification. DCR will continue to comply with this policy and will develop a Handbook (BMP 5-2) which provides guidance in the design of projects to fully comply with the Policy. DCR will also implement the following programs during the permit term to address discharge to impaired waterbodies.

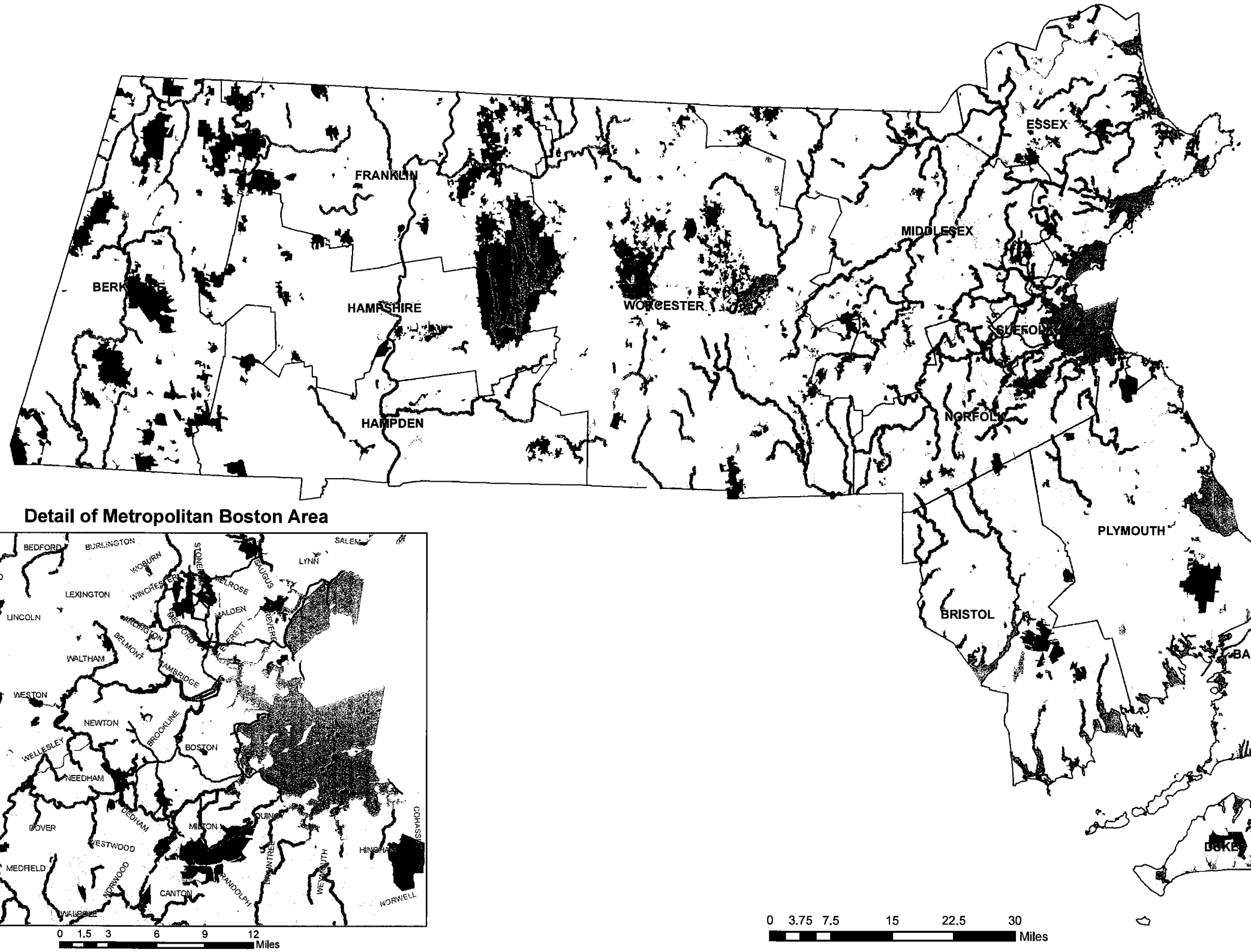
BMP 7-6: Review of Drainage Inventory for Outfalls which Drain to Impaired Waterbodies - DCR has completed the inventory of drainage outfalls within urbanized areas. This inventory has been cross-referenced with DEP's sub-basin watershed boundaries and impaired waterbodies GIS shape files to develop Table A in the NOI which summarizes the number of outfalls per receiving waterbody and if the waterbody is impaired. Figure 6 summarizes DCR facilities within urbanized areas and impaired waterbodies within Massachusetts for reference. DCR will continue to review outfalls as they are identified and determine the receiving waterbodies. Table A in the NOI will be updated annually in the annual report. This outfalls per receiving waterbody estimate will aid DCR in identifying waterbodies where DCR may be a major contributor of storm water runoff (and therefore potentially to the pollutant load). DCR will focus on working with EPA, DEP and watershed advocacy groups for these waterbodies in developing appropriate implementation measures in waterbody's TMDL reports. The Storm Water Handbook will include requiring projects which drain to an impaired waterbody to include BMPs which control the pollutants of concern so that discharge will not cause instream exceedance of water quality standards.

Measurable Goal/ Schedule: Continue to update outfalls per receiving waterbody table as new outfalls are identified. Review table to determine impaired watersheds within DCR outfalls. Work with EPA, DEP and watershed advocacy groups during the remainder of the permit term to develop appropriate implementation measures to address pollution to impaired waterbodies for those waterbodies where DCR is determined to be a significant contributor of storm water in the watershed.

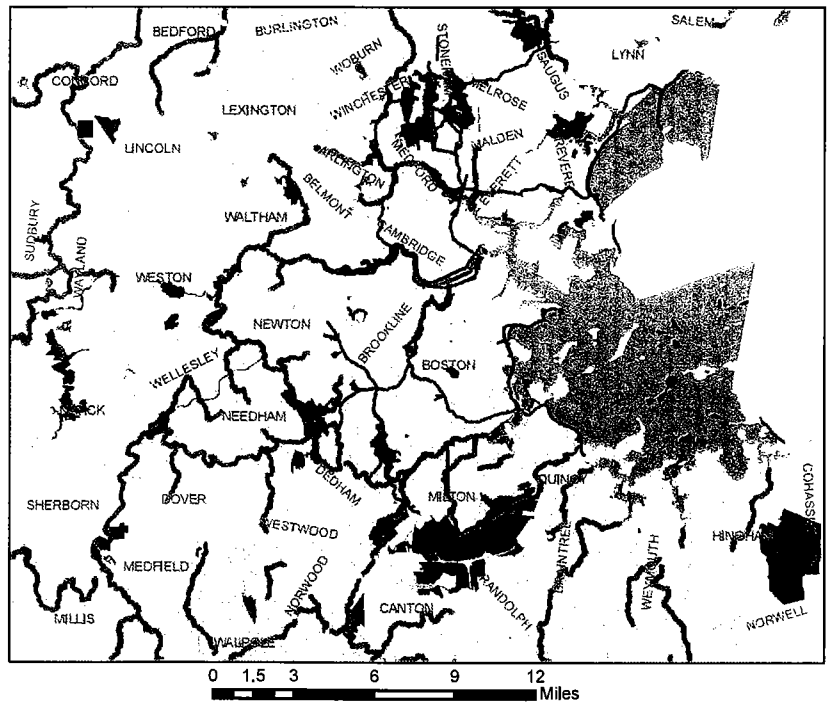
3.6 Discharge to Waterbodies with an Approved TMDL

General Permit Requirement: According to Part I.D of the permit, if a discharge drains to a listed waterbody for which a Total Maximum Daily Load (TMDL) has been developed and approved by EPA, the permittee must comply with the requirements below:

1. Determine whether the approved TMDL is for a pollutant likely to be found in storm water discharges from the MS4.



Detail of Metropolitan Boston Area



Legend

- **Urbanized Area**
- **DCR Facility in UA**
- **DCR Facility Outside UA**

Mass 303d Listed Waterbodies (2002)

- Category 4a - TMDL Completed
- Category 5 - Impaired - TMDL Required

DCR Facilities and Roads Located in Urbanized Areas which Potentially Discharge to Impaired Waterbodies

August 2005

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Figure Number

6

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2. Determine whether the TMDL includes a pollutant waste load allocation (WLA), BMP recommendations or other performance requirements for storm water discharges. This storm water WLA may be expressed in the TMDL as a gross allotment for the impaired water body. Or, provided no specific WLA for the MS4 exists, determine if a Performance Agreement or Memorandum of Understanding has been established between the MS4, EPA, and MA DEP or NH DES which modifies the BMPs or performance standards of the TMDL. Such Memoranda are posted on the TMDL websites. The Massachusetts site is: http://www.state.ma.us/dep/brp/wm/tmdl.html.

3. If the MS4 is required to implement storm water waste load allocation provisions of the TMDL, the permittee must assess whether the WLA is being met through implementation of existing storm water control measures or if additional control measures are necessary. The permittee's assessment of whether the WLA is being met is expected to focus on the adequacy of the permittee's storm water controls (implementation and maintenance), not on the response of the receiving water.

4. Highlight in the storm water management program and annual reports all control measures currently being implemented or planned to be implemented to control pollutants of concern identified in approved TMDLs. Also include a schedule of implementation for all planned controls. Document the assessment which demonstrates that the WLA will be met including any calculations, maintenance log books, or other appropriate controls.

DCR Programs: In reviewing the TMDL reports currently approved by EPA, DCR has identified the following actions necessary to meet the TMDL implementation recommendations:

BMP 7-7: Chicopee Basin, French Basin, Mill River Basin, Northern Blackstone and Connecticut Basin TMDLs – These TMDL Reports recommended that during timber harvesting practices, DCR shall check that an approved forest cutting plan and BMPs for erosion are followed. DCR already meets this recommendation with current timber harvesting practices. DCR prepares a forest cutting plan for any cutting proposed within the state forests. This plan includes appropriate BMPs for erosion.

Measurable Goal/ Schedule: DCR will continue to follow approved forest cutting plans for any cutting proposed within the DCR forests. DCR will provide a summary table of timber harvesting activities, date forest cutting plan was approved and proposed BMPs in each annual report.

BMP 7-8: Connecticut Basin TMDL – Provide training to local Conservation Commissions on timber harvesting BMPs.

Measurable Goal/ Schedule: DCR will present a short seminar on timber harvesting BMPs for each Conservation Commission where DCR has facilities within the Connecticut Basin.

In addition to these programs, DCR proposes the following program to proactively participate in the development of TMDL for watersheds where DCR has facilities.

BMP 7-9: Permit Year TMDL Summary – Annual reports submitted to EPA will summarize any TMDL reports approved by EPA during the permit year which include recommendations for actions by DCR.

Measurable Goal/ Schedule: Include summary in annual report.

3.7 Part V – Additional Resources

Part V of the General Permit includes three requirements that will be addressed by DCR current or proposed programs outlined in this section.

3.7.1 Discharges to Coastal Waters with Public Swimming Beaches

Part V.A.8 of the permit indicates that MS4s which discharge to coastal waters with public swimming beaches should consider these waters a priority in implementation of the storm water management program.

3.7.2 Groundwater Recharge and Infiltration

In accordance with Part V.A.9 of the permit, the permittee should consider opportunities for groundwater recharge and infiltration in the implementation of the minimum control measures described in Section 3 of this report. The permittee must evaluate physical conditions, site design, and best management practices to promote groundwater recharge and infiltration where feasible in the implementation of the control measures described above. During the implementation of the storm water management program, the permittee must address recharge and infiltration for the minimum control measures as well as any reasons for electing not to implement recharge and infiltration. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable.

Permittees in areas identified as "high" or "medium" in the most recent Massachusetts Water Resources Commission's *Stressed Basins in Massachusetts* report in effect at the time the permittee submits a Notice of Intent and accompanying storm water management program, must minimize the loss of annual recharge to groundwater from new development and redevelopment, including but not limited to drainage improvements done in conjunction with road improvements, street drain improvement projects and flood mitigation projects, consistent with Standard 3 of the Storm Water Management Policy in areas both within and outside of the jurisdiction of the Massachusetts' Wetlands Protection Act.

3.7.3 Public Drinking Water Supplies

According to Part V.C of the permit,

1. MS4s which discharge to public drinking water sources and their protection areas (Class A and B surface waters used for drinking water and well head protection areas) should consider these waters a priority in implementation of the storm water management program.

2. Discharges to public drinking water supply sources and their protection areas (wellhead protection areas, Class A and Class B waters) should provide pretreatment and spill control capabilities to the extent practicable.

3. Discharges to Class A waters, Zone 1 wellhead protection areas, and the sanitary radius to supply wells should be avoided to the extent feasible.

DCR Programs: •DCR has completed the inventory of drainage outfalls within urbanized areas and has mapped the above resources in Figure 6. Most new construction and redevelopment activities undertaken by DCR are currently subject to the Massachusetts DEP's Stormwater Management Policy (BMP 5-1) and Performance Standards through the Wetlands Protection Act and Clean Water Act Section 401 Water Quality Certification. The Policy includes:

- Standard 3 which requires that the permittee meet certain requirements to minimize the loss of recharge to groundwater from a site.
- Standard 6 which provides additional protection for critical areas including ORWs (which include surface drinking water supplies) and public swimming beaches.

DCR will continue to comply with this policy and will develop a Handbook (BMP 5-1) which provides guidance in the design of projects to fully comply with the Policy and meet the public drinking water supply requirements listed above for the NPDES permit. All projects which discharge to public drinking water supply sources and their protection areas will be designed in accordance with the Storm Water Handbook. The Storm Water Handbook (BMP 5-1) will also incorporate public drinking water supply resources in prioritizing projects to be funded/ designed.

BMP 7-10: Priority Resource Area Review Program: DCR will implement a program to review the outfalls identified in the outfall inventory which discharge to one or more of the resources outlined in Part V and IX of the permit. The program will include:

- Identify outfalls which discharge to priority resource areas using the GIS database created in the outfall inventory

- Review available water quality data for these outfalls
- Capture water quality data if determined necessary
- Determine if BMPS are needed to achieve water quality standards
- Review planned construction or redevelopment within the area which could address the development of BMPs for the outfall
- If no construction project is scheduled in the near future, schedule design of BMPs in overall DCR construction schedule
- Construct BMPs as annual budgets allow.

DCR feels that the implementation of the Handbook to all new construction and redevelopment projects statewide and the implementation of BMP 7-10 will adequately address the priority resources in Part V of the permit.

Measurable Goal/ Schedule: Implement program by March 2006. Begin to include projects for construction of BMPs in 2007 fiscal budget. Include construction of two projects in each fiscal year's initial budget.

3.8 Part IX – Resource Areas Required for Priority Consideration

MA DEP Requirement: According to Part IX – 401 Water Quality Certification Requirements Section D of the permit, the permittee shall identify discharges to the following resource areas as a priority and indicate in their storm water management programs how storm water controls will be implemented. Identified priority areas include:

(a) public water supplies,

(b) public swimming beaches,

(c) Outstanding Resource Waters (as designated in 314 CMR 4.00),

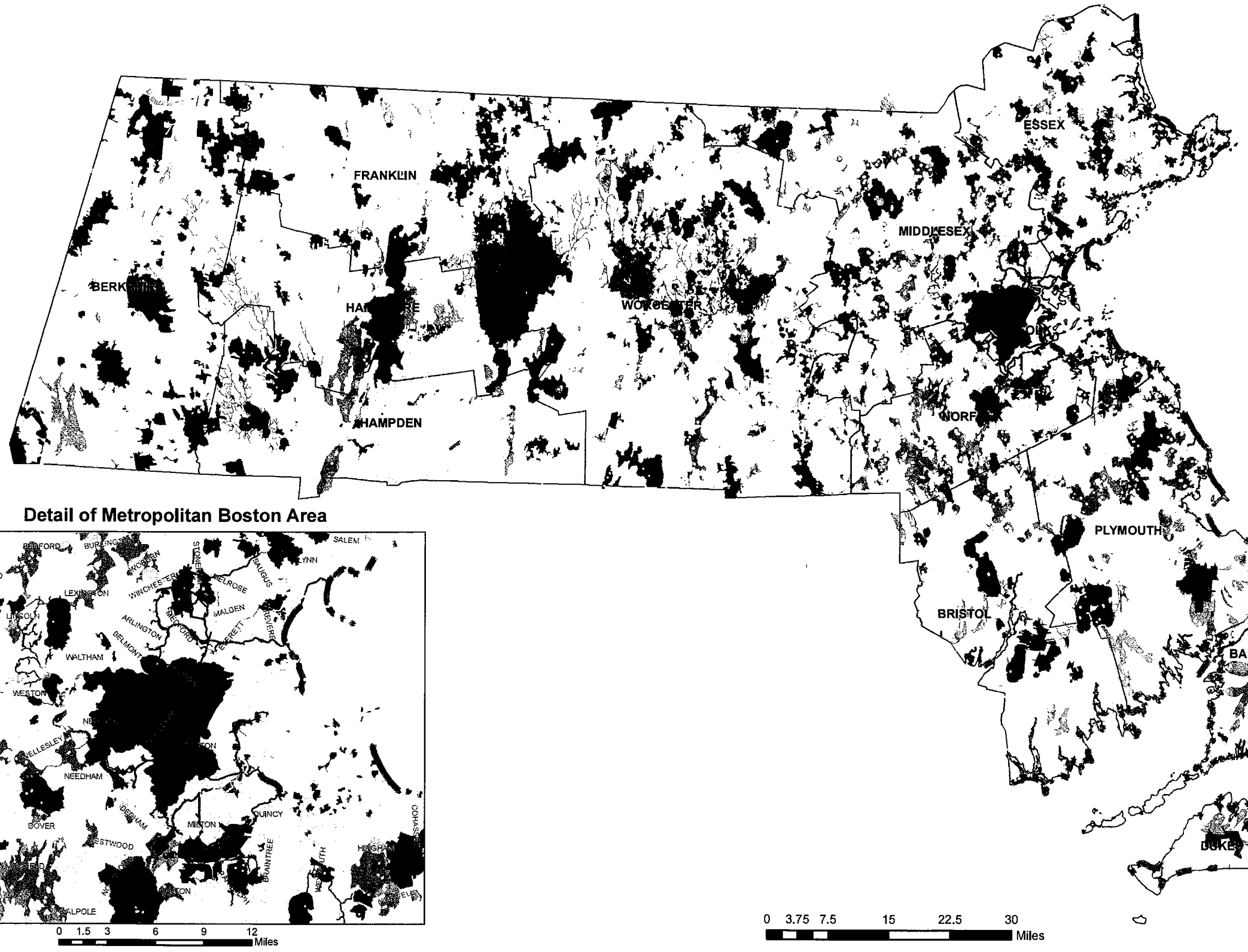
(d) shell fishing areas (open versus closed areas)

(e) rivers, ponds, lakes and coastal waters which are on the Department 303d list of impaired waters, and

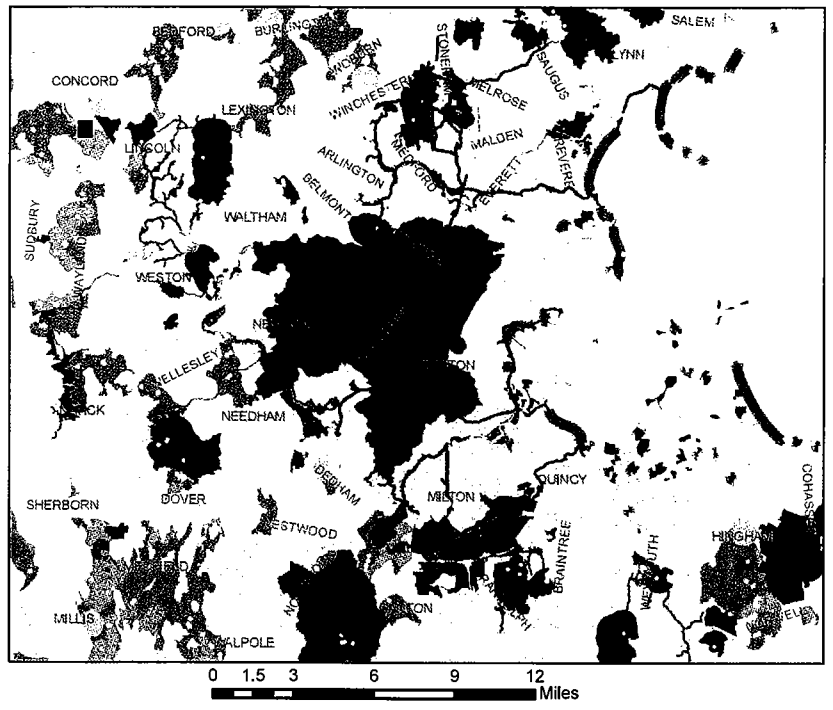
(f) cold water fishery river segments as identified in 314 CMR 4.00.

DCR has completed the inventory of drainage outfalls within urbanized areas and has mapped the above resources in Figure 8. DCR will incorporate prioritizing projects to be funded/ designed to incorporate these resources in the Storm Water Handbook (BMP 5-2). The Priority Resource Area Review Program (BMP 7-10) will also address priority resource areas covered under this part of the general permit. The review will include all 303d listed waterbodies which are impaired for non-point source or storm water impairments.

DCR feels that the implementation of the Handbook to all new construction and redevelopment projects statewide and the development of the Priority Resource Area Review Program (BMP 7-10), will adequately address the resources in Part IX of the permit.



Detail of Metropolitan Boston Area



Legend

- DCR Facility in UA
- DCR Facility Outside UA
- Urbanized Area
- Public Swimming Beaches

MWRC Stressed Basins

- High
- Medium

Public Water Supplies

- Zone II Wellhead Protection Areas
- Interim Wellhead Protection Areas
- Surface Water Supply Protection Zone A
- Surface Water Supply Protection Zone B

DCR Facilities and Roads Located in Urbanized Areas with Additional Resources

August 2005

ENSR INTERNATIONAL

Figure Number

7

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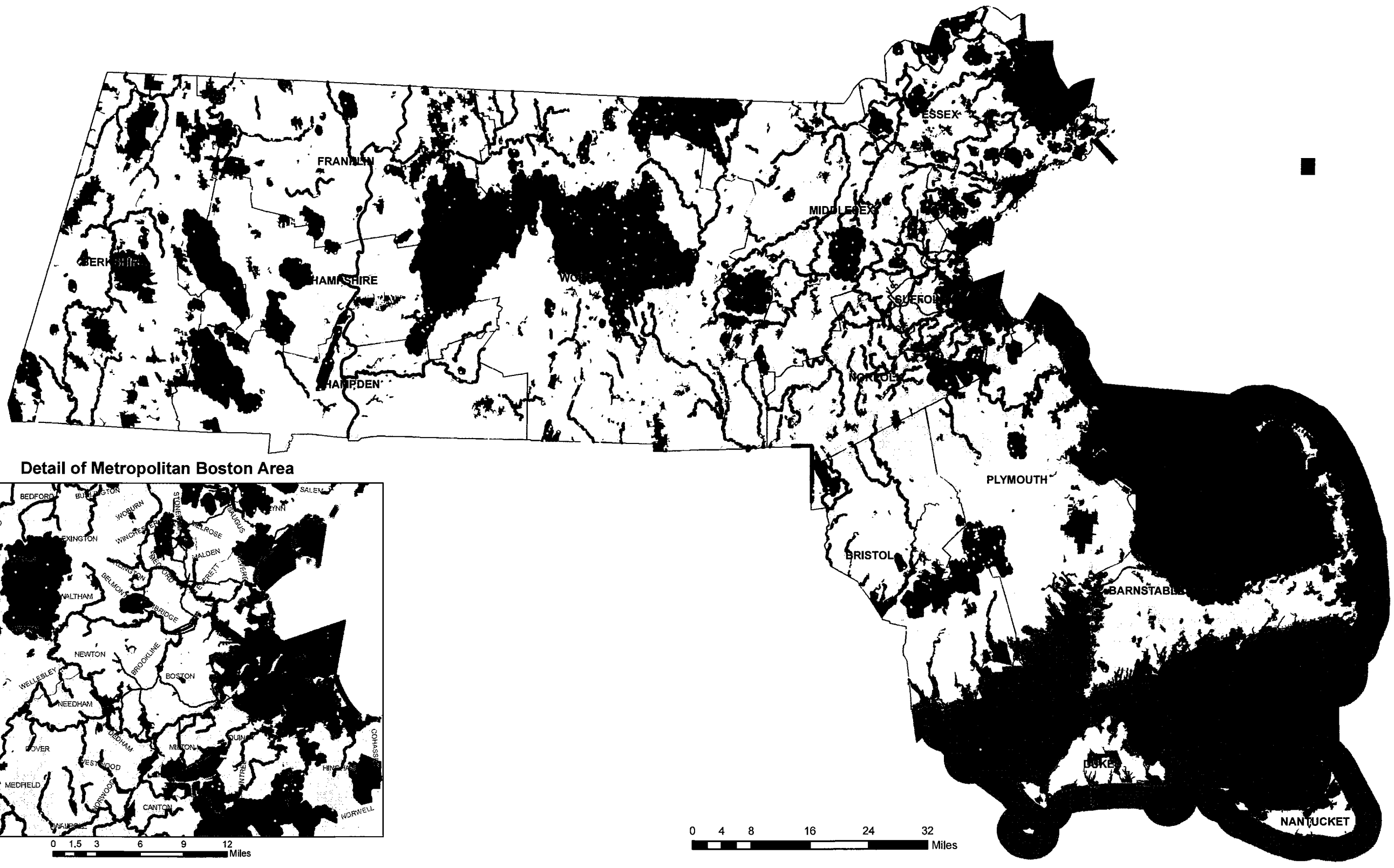
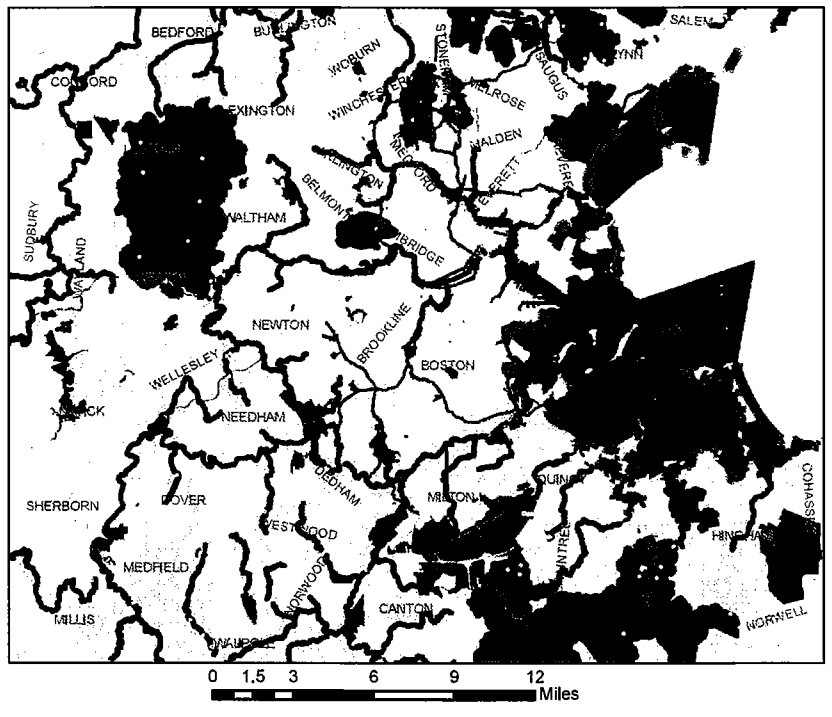


Detail of Metropolitan Boston Area



Legend

- **DCR Facility in UA**
- **DCR Facility Outside UA**
- Public Swimming Beaches
- **Urbanized Area**
- Public Water Supplies
- PWS Protection Areas
- Shell Fishing Areas
- Outstanding Resource Waters
- 303d Impaired Waterbodies

DCR Facilities and Roads Located in Urbanized Areas with Priority Consideration Resources

August 2005

ENSR INTERNATIONAL

Figure Number

18

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4.0 EVALUATION AND ASSESSMENT

This section describes procedures for evaluation and assessment of plan implementation and effectiveness against the identified measurable goals, as well as reporting and record retention requirements.

4.1 Plan Evaluation

DCR will evaluate program compliance with the required minimum control standards, the appropriateness of our identified best management practices, and progress towards achieving our identified measurable goals on an on-going basis as part of implementation of programs and during preparation of the annual report.

4.2 Plan Updates

If upon evaluation, improved, additional or different controls are deemed necessary to meet the required standards or provide a more effective program, DCR will update the storm water management program plan and submit revisions to the EPA and DEP. The submission will meet the following permit requirements:

(a) Changes adding (but not subtracting or replacing) components, controls or requirements to the SWMP may be made at any time upon written notification to EPA and MA DEP.

(b) Changes replacing an ineffective or unfeasible BMP specifically identified in the SWMP with an alternative BMP may be requested in writing to EPA and MA DEP at any time. Unless denied, changes proposed in accordance with the criteria below shall be deemed approved and may be implemented 60 days from submittal of the request. If the request is denied, EPA or MA DEP, as applicable, will send a written explanation of the denial.

(c) Modification requests, must include the following information:

- an analysis of why the BMP is ineffective or infeasible (including cost prohibitive),
- expectations on the effectiveness of the replacement BMP, and
- an analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced.

Change requests or notifications will be in writing and signed in accordance with the signatory requirements of the permit.

The permit allows EPA or MADEP to require changes to the SWMP as needed to:

(a) Address impacts on receiving water quality caused or contributed to by discharges from the MS4;

(b) Include more stringent requirements necessary to comply with a new Federal statutory or regulatory requirement; or

(c) Include such other conditions deemed necessary to comply with the goals and requirements of the CWA.

According to the permit, any changes requested by EPA or MADEP will be in writing and will set forth the time schedule for the permittee to develop the changes and offer the opportunity to propose alternative program changes to meet the objective of the requested modification.

4.3 Record Keeping

Records required by the NPDES Phase II permit and related to the implementation of this Storm Water Management Program will be maintained at 251 Causeway Street, Suite 600 Boston, MA 02114-2104. The records will include information used in the development of the storm water management program, any monitoring, copies of reports and all data used in the development of the notice of intent. DCR will retain these records for at least five (5) years. DCR will make such records accessible to the public at reasonable times during regular business hours. A reasonable fee may be charged for copying requests. DCR will not submit records to the EPA or DEP unless specifically requested to do so, except as summarized in the annual reports.

4.4 Annual Reports

Annual reports will be prepared and submitted to Region 1 EPA and MA DEP. In accordance with the general permit, the report will include:

- A self assessment review of compliance with the permit conditions;
- An assessment of the appropriateness of the BMPs included in the current plan;
- An assessment of the progress towards achieving the selected measurable goals for each minimum control measure;
- A summary of results of any information collected and analyzed (including any type of data);
- A summary of the storm water activities planned for the next reporting cycle;

- A discussion of any changes in identified Best Management Practices or measurable goals for each minimum control measure; and
- Notice of reliance on another governmental entity to satisfy some of the permit obligations (if applicable).

The report shall be submitted annually and summarize the activities of the previous permit year and planned activities for the subsequent year.

5.0 REFERENCES

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DEP. 1997a. Stormwater Management Volume One: Stormwater Policy Handbook. (March 1997), MA Department of Environmental Protection and MA Office of Coastal Zone Management, Boston, MA.

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Federal Register, December 8, 1999. 40 CFR Parts 9, 122, 123, and 124 National Pollutant Discharge Elimination System--Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule. pg. 68721-68851.

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MassHighway. January 2002. The MassHighway Storm Water Handbook. MassHighway Department, Boston, MA.

USEPA. April 18, 2003. National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

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