



OFFICE OF WATER RESOURCES ANNUAL REPORT, FISCAL YEAR 2019



MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

DIVISION OF WATER SUPPLY PROTECTION

OFFICE OF WATER RESOURCES

MA DEPARTMENT OF CONSERVATION AND RECREATION

The mission of the **Department of Conservation and Recreation (DCR)** is to protect, promote, and enhance our common wealth of natural, cultural, and recreational resources for the well-being of all. DCR fulfills its mission through the stewardship of over 450,000 acres of parks and forests, beaches, bike trails, watersheds, dams, and parkways. DCR also promotes conservation efforts throughout the state, including water resource protection, beach re-nourishment, aquatic invasive species management, and flood hazard mitigation.



Wallum Lake, Douglas State Forest

DCR OFFICE OF WATER RESOURCES

The DCR **Office of Water Resources (OWR)** works on behalf of people and the environment to protect the water resources on which we all depend. By providing science-based policy, technical assistance, and resource management, our four program areas work to ensure that Massachusetts has plentiful water to support a healthy environment and economic development for generations to come, and that those generations will be better prepared to face extreme weather and will have access to lakes, ponds, and rivers that are healthy.

On the following pages we invite you to learn more about our:

- Flood Hazard Management Program
- Lakes and Ponds Program
- Water Resources Assessment and Planning Program and
- USGS Cooperative Program

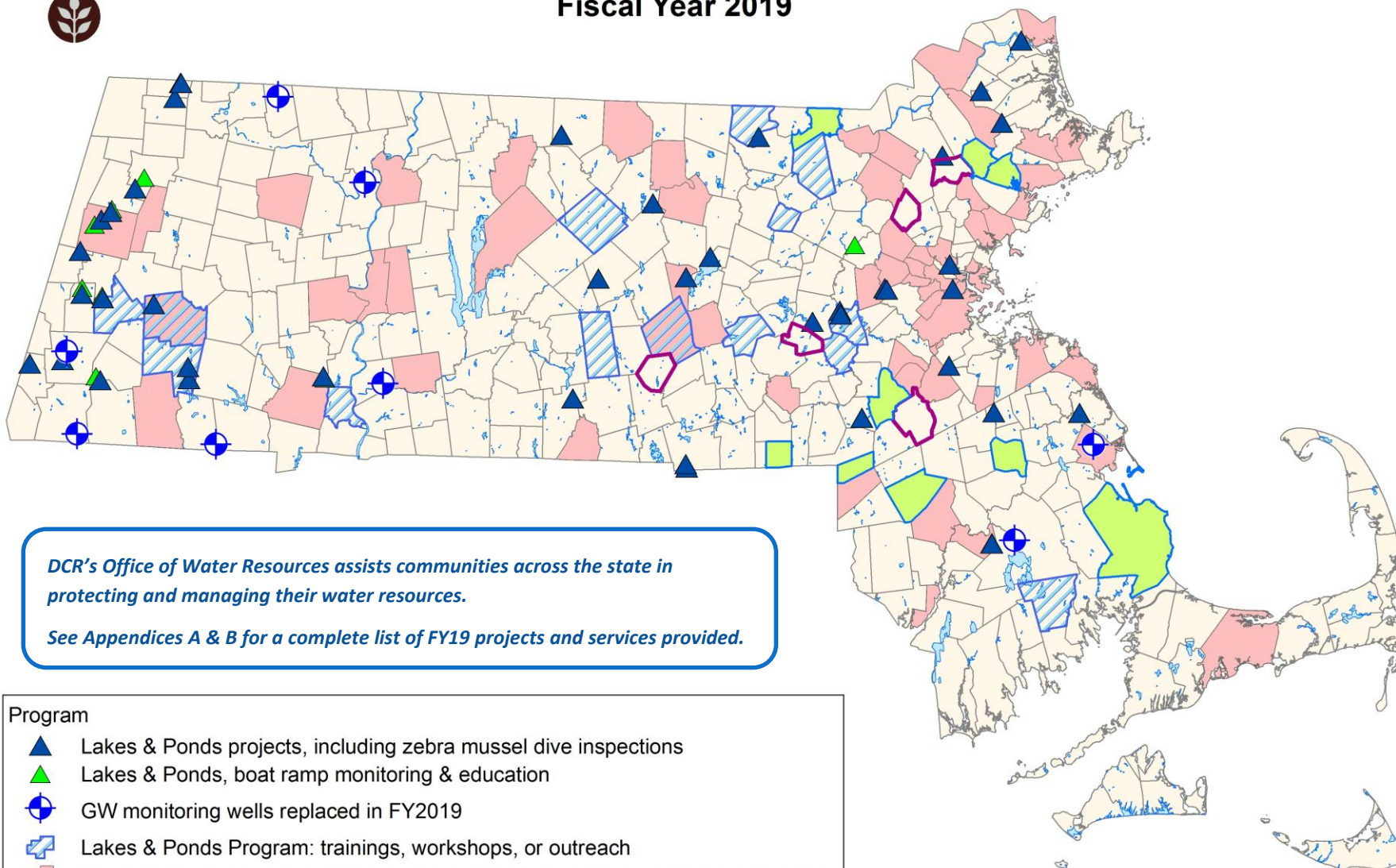


OWR staff conducting monthly groundwater measurements.

Where We Work

DCR Office of Water Resources









Fiscal Year 2019



DCR's Office of Water Resources assists communities across the state in protecting and managing their water resources.

See Appendices A & B for a complete list of FY19 projects and services provided.

Program

-  Lakes & Ponds projects, including zebra mussel dive inspections
-  Lakes & Ponds, boat ramp monitoring & education
-  GW monitoring wells replaced in FY2019
-  Lakes & Ponds Program: trainings, workshops, or outreach
-  Flood Hazard Management Program, community assistance meetings & trainings
-  Water Needs Forecasts FY2019
-  Interbasin Transfer Act reviews & consultations
-  Lakes and Ponds

0 25 50 Miles

Oct. 24, 2019 (mjm)
Data Sources: MassGIS, USGS
DCR Office of Water Resources

FLOOD HAZARD MANAGEMENT PROGRAM (FHMP)

The Flood Hazard Management Program (FHMP) is the state coordinating office for the National Flood Insurance Program (NFIP).

- FHMP staff helps homeowners, professionals, and local officials to navigate the requirements of the NFIP.
- Staff provides technical assistance to NFIP communities on a wide range of matters, including floodplain management best practices, flood-resistant standards for construction, floodplain mapping issues, flood insurance questions, and mitigation options to reduce flood losses.



FY2019 FHMP HIGHLIGHTS

In FY2019, FHMP staff served on the interagency team that developed the [*Massachusetts State Hazard Mitigation and Climate Adaptation Plan*](#), the first state plan to integrate climate impacts and hazard mitigation planning. Other accomplishments of the FHMP in FY2019 include:

- 28 Community Assistance Visits
- 19 Training Events
- Almost 700 General Technical Assistance contacts to help Massachusetts' 341 NFIP communities
- Coordination with numerous state, national, federal, and local partners to monitor and review floodplain development, mitigation projects, and local and regional resiliency efforts
- Coordination with other DCR leaders on agency-wide climate adaptation measures, such as future design standards, collection of data for assessing DCR facilities, and other actions in the *Massachusetts State Hazard Mitigation and Climate Adaptation Plan*



LAKES AND PONDS PROGRAM

The mission of the Lakes and Ponds Program is to protect, restore, and enhance the ecological integrity and recreational opportunities of the Commonwealth's lakes and ponds, including DCR's 300 lakes and 51 freshwater swimming beaches.

- Massachusetts has over 3,500 lakes, approximately 300 of which are on DCR property.
- The Lakes and Ponds Program works on behalf of visitors to DCR properties and all who use lakes and ponds, including municipalities, communities, and lake advocate groups.
- The program implements its mission through protection and restoration projects; public education, outreach and technical assistance; monitoring and assessment of lakes and their watersheds; and partnerships with lake and pond stakeholders at the local, regional, state and federal levels.



FY2019 LAKES & PONDS PROGRAM HIGHLIGHTS

IMPROVING WATER QUALITY AT SWIM BEACHES

Mausert's Pond, Clarksburg State Park: Near the day-use area at Mausert's Pond, large numbers of geese were polluting the beach and swim area with bacteria. The Lakes and Ponds program installed a new goose barrier between the beach and grass picnic area to keep the beach and water clean. This step completes a five-year management program to improve conditions in the pond, beach, and day-use areas of the park.

PREVENTING THE SPREAD OF INVASIVE SPECIES

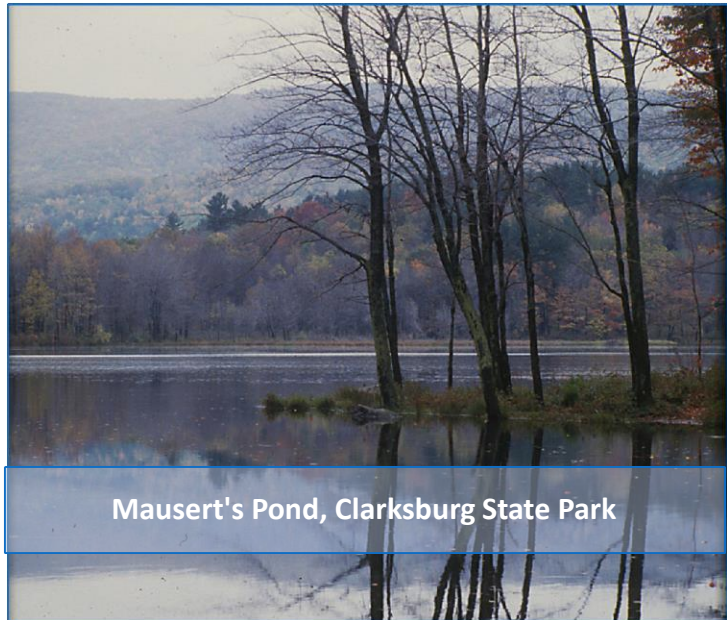
- Staff managed nearly 2,000 acres of aquatic invasive species at DCR properties throughout the Commonwealth.
- 7 Boat Ramp Monitors provided public education and boat inspections at nine high-use and/or high-risk water bodies.
- Staff offered 18 Weed Watcher and other workshops to train more than 200 residents in identifying aquatic invasive species.



WATER RESOURCES ASSESSMENT AND PLANNING PROGRAM

The WRAP Program mission is to provide science-based policy and technical assistance to decision-makers and the public to ensure that the long-term water needs of the Commonwealth's residents, communities, and environment can be met.

WRAP also provides technical and administrative staff to the Massachusetts Water Resources Commission. Established in 1956, the Commission is responsible for developing, coordinating and overseeing the Commonwealth's water policy and planning activities. To learn more about our work on Commission programs, see FY 2019 WRAP Highlights below and in the [WRC annual report](#).



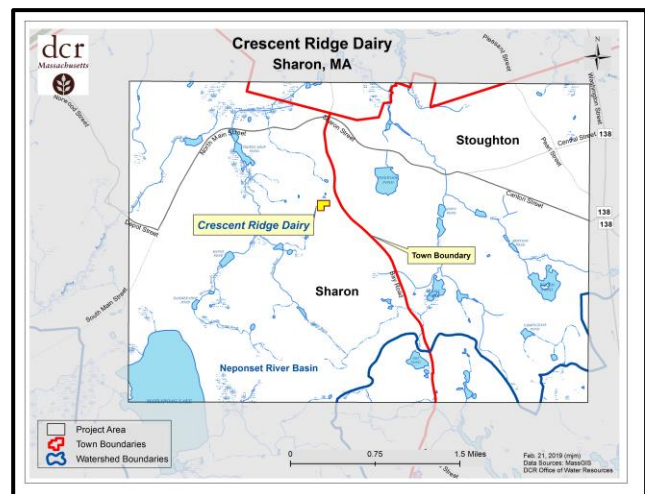
FY2019 WRAP HIGHLIGHTS

THE INTERBASIN TRANSFER ACT (ITA)

The ITA protects Massachusetts' vital water resources and the communities that rely on them. It ensures that communities transferring drinking water and wastewater between river basins practice water conservation, and that the hydrology in the donor basin is protected. The process is transparent and includes robust public input.

In FY2019, staff conducted the following work:

- Reviewed Ashland's request to join the MWRA. Based on staff's recommendation, the WRC approved this request in October 2018.
- Reviewed a Request for Determination of Insignificance from Crescent Ridge Dairy in Sharon to transfer wastewater to the MWRA Sewer System via Stoughton. Based on staff's recommendation, the WRC found this request to be insignificant in April 2019.
- Conducted pre-application meetings with Burlington, North Reading, and Auburn. Applications are expected to be submitted in FY2020.



FY2019 WRAP HIGHLIGHTS

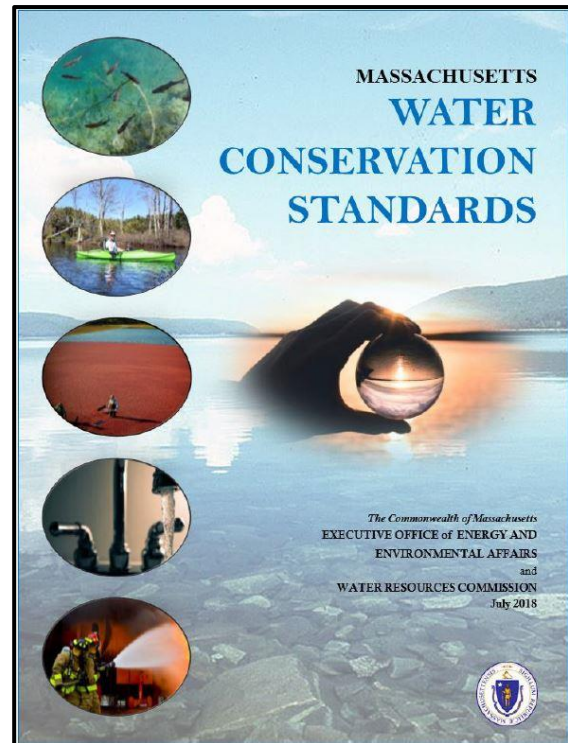
MASSACHUSETTS WATER CONSERVATION STANDARDS

The Commission established the Massachusetts Water Conservation Standards (WCS) in 1992, setting statewide goals for water-use efficiency and providing guidance for effective conservation.

In **FY2019**, following a multi-year process and extensive public comment, staff finalized a comprehensive review and update of the [Standards](#) incorporating the latest thinking on best practices and industry standards.

WATER NEEDS FORECASTS

WRAP staff works with public water suppliers to develop 15- to 20-year water needs forecasts, using a methodology approved by the Water Resources Commission. The forecasts are used by suppliers in applying for Water Management Act (WMA) permits and in long-range planning.



FY2019 accomplishments include:

- WRAP staff worked with eight public water suppliers in six river basins (Blackstone, Ipswich, Boston Harbor, Merrimack, South Coastal, and Taunton basins) to review or revise forecasts.



FY2019 WRAP HIGHLIGHTS

USGS COOPERATIVE PROGRAM

The U.S. Geological Survey and the Commonwealth of Massachusetts have had a water resources partnership since 1904, when the state's first modern stream gage was installed in the Connecticut River. The Cooperative program currently maintains:

- 57 real-time streamflow gages,
- 3 tidal gages,
- 1 soil moisture station,
- 5 weather stations, and
- 92 groundwater observation wells.

USGS awarded the state a grant to replace up to 39 groundwater monitoring wells, starting in 2017. A significant number of these wells were installed in the 1960s; some had failed due to corrosion. In coordination with USGS and the State Geologist, work began in FY18, continued in FY19, and 34 wells were replaced.

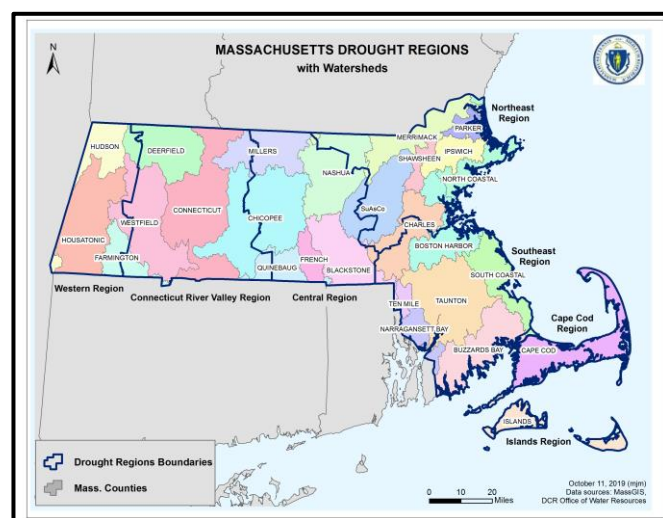


HYDROLOGIC CONDITIONS, DROUGHT MONITORING AND PRECIPITATION PROGRAM

WRAP staff monitors and analyzes water conditions monthly and produces a [Hydrologic Conditions Report](#), covering precipitation trends, rainfall deficits, river conditions, groundwater levels, and reservoir, lake, pond, and other impoundment levels. Staff uses these data to monitor for a potentially developing drought or the deterioration of conditions during droughts and to advise the state's Drought Management Task Force (DMTF).

OWR has run the Massachusetts precipitation program since 1956. The precipitation monitoring network provides data from more than 200 historical monitoring stations in Massachusetts, of which 51 are currently active. These data are critical to drought monitoring.

In FY2019, WRAP staff, working with other agencies, initiated a comprehensive review of the [MA Drought Management Plan](#), including the drought indices, drought region boundaries, methods used to determine drought, communications, and state and local actions to prepare for and respond to drought. Staff presented these draft revisions in FY 2019 to the Water Resources Commission and the public for comment.



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Cover photo: Ipswich River in fall
Photo by Anne Carroll

APPENDIX A LIST OF FY19 SERVICES PROVIDED AND LOCATIONS

Flood Hazard Management Program	
City or Town	Service Provided
Amherst	Meeting
Arlington	Community Assistance Visit
Ashburnham	Meeting
Ashfield	Meeting
Athol	Meeting
Barnstable	Workshop or training
Becket	Meeting
Belmont	Workshop or training
Beverly	Community Assistance Visit
Billerica	Community Assistance Visit
Boston	Workshop or training
Boxford	Meeting
Brookline	Community Assistance Contact
Cambridge	Community Assistance Visit
Canton	Meeting
Chelsea	Community Assistance Visit
Dalton	Meeting
Duxbury	Community Assistance Contact
Essex	Community Assistance Contact
Fitchburg	Community Assistance Contact
Hadley	Community Assistance Contact
Hamilton	Meeting
Haverhill	Workshop or training
Hingham	Workshop or training
Holbrook	Community Assistance Contact
Leominster	Workshop or training
Lexington	Community Assistance Contact
Lowell	Community Assistance Visit
Ludlow	Meeting
Lynn	Workshop or training
Lynnfield	Community Assistance Contact
Medford	Meeting

Milford	Workshop or training
Montague (Turners Falls)	Meeting
Nahant	Community Assistance Visit
Northampton	Community Assistance Contact
Norton	Community Assistance Contact
Norwood	Workshop or training
North Attleboro	Meeting
Petersham	Meeting
Pittsfield	Workshop or training
Plymouth	Workshop or training
Salem	Community Assistance Visit
Salisbury	Community Assistance Visit
Sandisfield	Meeting
Saugus	Community Assistance Visit
Scituate	Meeting
Shrewsbury	Community Assistance Contact
Somerset	Workshop or training
Southbridge	Meeting
Taunton	Workshop or training
Tewksbury	Community Assistance Visit
Walpole	Meeting
Waltham	Workshop or training
Watertown	Community Assistance Contact
West Boylston	Workshop or training
Westfield	Meeting
Weston	Community Assistance Contact
Westwood	Community Assistance Contact
Worcester	Community Assistance Visit

APPENDIX A (CONT.) LIST OF FY19 SERVICES PROVIDED AND LOCATIONS

Lakes and Ponds Program	
City or Town	Service Provided
Becket	Weed Watcher Training
Boxboro	New England Fishing and Outdoor Expo
Cheshire	Boat Ramp Monitor, Cheshire Reservoir
Concord	Boat Ramp Monitor, Walden Pond
Douglas	Boat Ramp Monitor, Wallum Lake
Hubbardston	Comet Pond outreach; pioneer milfoil SCUBA survey
Lee	Annual LAPA-West Conference
Lee/Lenox	Boat Ramp Monitor, Laurel Lake
Monterey	Boat Ramp Monitor, Lake Buel
Nashua, NH	Northeast Aquatic Plant Management Society
Natick	Weed Watcher Training
Otis	Weed Watcher Training
Pepperell	Weed Watcher Training
Pittsfield	Annual LAPA-West Conference- Berkshire Region
Pittsfield	Boat Ramp Monitor Grant, Lake Onota & Pontoosuc
Portsmouth, NH	Northeast Aquatic Nuisance Species Panel
Rochester	Weed Watcher Training
Saratoga Springs, NY	Northeast Aquatic Biologists conference
Sherborn	Weed Watcher Training
Spencer	Weed Watcher Training
Stockbridge	Boat Ramp Monitor Grant, Stockbridge Bowl
Westfield	Boat Ramp Monitor, Pequot Pond
West Springfield	Springfield Sportsman's Show
Westboro	MA Congress of Lakes and Ponds Associations
Westford	Weed Watcher Training
Worcester	Weed Watcher Training

Water Resources Assessment and Planning Program	
City or Town	Service Provided
Ashland	Interbasin Transfer Act Review
Auburn	Interbasin Transfer Act Pre-Application
Blackstone	Water Needs Forecast, Blackstone River Basin
Burlington	Interbasin Transfer Act Pre-Application
Chicopee	USGS Well Replacement
Danvers/Middleton	Water Needs Forecast, Ipswich River Basin
Deerfield	USGS Well Replacement
Duxbury	USGS Well Replacement
East Bridgewater	Water Needs Forecast, Taunton River Basin
Granville	USGS Well Replacement
Great Barrington	USGS Well Replacement
Heath	USGS Well Replacement
Lakeville	USGS Well Replacement
North Reading	Interbasin Transfer Act Pre-Application
Norton	Water Needs Forecast, Taunton River Basin
Plainville	Water Needs Forecast, Taunton River Basin
Plymouth (Pine Hills)	Water Needs Forecast, South Coastal Basin
Sharon	Interbasin Transfer Act Review
Sheffield	USGS Well Replacement
Tyngsborough	Water Needs Forecast, Merrimack River Basin
Walpole	Water Needs Forecast, Boston Harbor Basin

APPENDIX B LIST OF LAKES AND PONDS PROJECTS AND LOCATIONS

City or Town	Location	Waterbody	Service Provided
Abington	Ames Nowell State Park	Cleveland Pond	Aquatic Plant Management
Andover	Harold Parker State Forest	Field Pond	Aquatic Plant Management
Becket	October Mountain State Forest	Buckley Dunton Lake	Aquatic Plant Management
Boston	Charles River Lower Basin	Esplanade Lagoon	Aquatic Plant Management
Clarksburg	Clarksburg State Park	Mauserts Pond	Aquatic Plant Management
Clinton	Wachusett Reservoir Watershed	South Meadow Pond System	Aquatic Plant Management
Framingham	DCR Water Supply Protection	Stearns Reservoir	Aquatic Plant Management
Georgetown	DFG Office of Fishing & Boating site	Rock Pond	Aquatic Plant Management
Groton	J. Harry Rich State Forest	Nashua River	Aquatic Plant Management
Marshfield	Town of Marshfield	Marshfield Ponds	Aquatic Plant Management
Milton	Blue Hills State Reservation	Houghton's Pond	Aquatic Plant Management
Natick	Lake Cochituate State Park	Lake Cochituate & Fiske Pond	Aquatic Plant Management
Newton	Charles River Reservation	Charles River Lakes District	Aquatic Plant Management
Newton	Charles River Lakes District	Ware's Cove, Charles River	Aquatic Plant Management
Norfolk	Bristol-Blake State Reservation	Stony Brook Pond	Aquatic Plant Management
Otis	Tolland State Forest	Otis Reservoir	Aquatic Plant Management
Rutland	Rutland State Park	Whitehall Pond	Aquatic Plant Management
Somerville	Mystic River Reservation	Mystic River	Aquatic Plant Management
Sturbridge	Wells State Park	Walker Pond	Aquatic Plant Management
Topsfield	Willowdale State Forest	Hood Pond	Aquatic Plant Management
West Boylston	Wachusett Reservoir	Lily Ponds	Aquatic Plant Management
Westminster	Leominster State Forest	Crow Hill Pond	Aquatic Plant Management
East Taunton	Massasoit State Park	Middle Pond	Aquatic Plant Management & Beach Restoration permitting
East Otis	Tolland State Forest	Tolland State Forest	Aquatic Plant Survey & Mapping
Natick	Cochituate State Park	Cochituate State Park	Baseline Water Quality Monitoring
Winchendon	Lake Dennison Recreation Area	Lake Dennison	Beach replacement & erosion control
North Adams	Natural Bridge State Park	Natural Bridge Pond	Dredge Permitting
Concord	Walden Pond State Reservation	Walden Pond	Erosion Control Plans & Permits
Clarksburg	Clarksburg State Park	Mausert's Pond	Goose Deterrents & Treatment
Newburyport	Maudslay State Park	Flowering Pond	Post-dredging monitoring
Douglas	Douglas State Forest	Wallum Lake	Stormwater & Erosion Control Design & Permit; Title Exam
Plymouth	Myles Standish State Forest	Fearing Pond	Stormwater Design & Permitting
Cheshire	Town Route 8	Cheshire Reservoir	Zebra mussel dive inspection
Egremont		Prospect Lake	Zebra mussel dive inspection
Great Barrington		Lake Mansfield	Zebra mussel dive inspection
Lee	Town Route 20	Laurel Lake	Zebra mussel dive inspection
Monterey	DCR Route 57	Lake Buel	Zebra mussel dive inspection
Pittsfield	City - Burbank Park & Hancock Road	Lake Onota & Pontoosuc Lake	Zebra mussel dive inspection
Richmond	Town - Beach Road	Richmond Pond	Zebra mussel dive inspection
Stockbridge	Town Route 183	Stockbridge Bowl	Zebra mussel dive inspection
Westfield	Hampton Ponds State Park	Pequot Pond	Zebra mussel dive inspection