



# Fiscal Year 2023 Final Report



*Wachusett Reservoir*

September 2023

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Massachusetts Department of Conservation and Recreation  
Division of Water Supply Protection  
Office of Watershed Management

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# **FY2023 Accomplishments**

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FY2023 End of Year Highlights**

**Wachusett/Sudbury Region Accomplishments**

**A. Land Acquisition**

Two projects went to record in Wachusett/Sudbury Region: a 28-acre fee acquisition in Sterling (Vaghini) and a 40-acre fee acquisition in Princeton (Pioneer Millennium Realty Trust). Four projects, totaling over 200 acres, are underway at the close of FY23 in various stages of due diligence. MWRA approved two new acquisitions on December 14, 2022: a 10-acre fee acquisition in Sterling and a 40-acre fee acquisition in Princeton. Three virtual LAP meetings were held this year and a total of seven Wachusett fee projects were approved. Work continues on one previously proposed donation of a 44-acre fee transfer in Rutland. Staff continue ongoing efforts to identify priority parcels for acquisition.

**B. Watershed Preservation Restrictions (WPR)**

The WPR Coordinator and Regional Monitors completed 48 WPR monitoring visits in FY23. The WPR Coordinator assisted Regional Monitors with training, monitoring visits, and report writing, and reviewed all monitoring reports completed by Regional Monitors. All WPR land ownership was also reviewed for property transfers. The Restriction Working Group met quarterly to discuss enforcement issues and the coordinator continued to work with DCR-Parks stewardship staff on updating the Enforcement Procedure. Two issues of the newly created electronic newsletter for WPR landowners, "[A Watershed Moment](#)" were sent in FY23.

**C. Land Management**

All active forestry lots were supervised. Photos are currently being taken at 51 timber sales dating back to 2009 and have been taken at over 726 established photo monitoring locations. Photos are taken prior to cutting of the timber sale and immediately after or within the year that the sale is complete. Additional photos are then typically taken within two years hence for up to two cycles and then every subsequent four to five years. Effort is made to take all photos during the growing season to allow the easier comparison of photos over time. Foresters responded to numerous hazardous tree complaints on both DCR property and properties abutting DCR property.

Boundaries were marked on 15.1 miles of the Sudbury watershed and nine miles were completed in the Wachusett watershed. The boundaries were located, flagged, blazed and tagged on the one-mile perimeter of the newly acquired Vaghini property in Sterling.

All fields scheduled to be mowed in FY23 were mowed according to the Mowing Plan. No new contracted work was done on any fields in FY23, but plans were developed and will be implemented as needed pending the results of repeated mowing. Natural Resources staff led a team to locate and protect the newly listed Monarch caterpillars in Smith field prior to mowing. Staff continued annual control efforts in the summer of 2022 for Canada thistle, teasel, mile-a-minute, and stiltgrass. DWSP abandoned the hardware cloth trial for knotweed control at Lancaster Street and mapped population of Amur corktree off Acre Bridge Road.

#### **D. Wildlife Management**

The bird harassment program (BHP) ran from September through March, utilizing shore personnel and a boat crew. The amount of times boats were used varied per week and was reviewed on a regular basis. The program was successful, as federal regulatory thresholds for bacteria were not exceeded and there were no safety issues. Gull numbers for the season ranged from zero to 1,800 (1/11/23) at the Wachusett roost site. Observations during part of the fiscal year indicated that gull numbers were highest at the roost when the BHP was in operation. Many gulls roosted in the north basin when BHP was not in operation, but this became an inconsistent observation as the winter progressed. Natural Resources staff regularly communicated with Environmental Quality staff about observations. The DOT Aeronautics Program flew drones on three occasions to survey the roost.

Aquatic mammal surveys and trapping was conducted as needed. No beaver or muskrat were observed in the pathogen zone and surveys revealed two active animal burrows present on the dikes that were treated and filled. Research and management for Common Loons on DWSP waterbodies continued and the annual report for the 2022 season was completed. Collection in 2022 of lead tackle from the Quabbin, Wachusett and Ware River watersheds totaled 2.44 pounds and monofilament line collection totaled 13.1 miles.

Results from the Watershed hunts were analyzed and finalized. The 2023 results and plans for 2024 were published in the 2023 Deer Report. NR met with staff to discuss plans for the upcoming deer hunt in FY24. A tremendous amount of work was done to revamp the Deer Hunt webpages and Deer Hunt maps. A new online mapping experience was developed in coordination with the DWSP GIS team to make it easier for hunters to identify where they can hunt and required permit(s) (<https://www.mass.gov/dcr-watershed-hunting>).

#### **E. Public Access Management**

Watershed Rangers continue to patrol the watershed, performing assigned duties and submitting daily patrol logs for interactions. Rangers catalogued 15,321 visitor contacts in FY23, with 1,017 rule violations and 36 parking tickets. Rangers continue to inspect the conditions and placement of all signage within the Watershed. They also continue to post No Parking after Dark signs in appropriate areas. Seasonally updated postings were placed with information for public about rules, and hunting and fishing seasons. Information was provided to different user groups for rules and regulations throughout the year.

Rangers responded to brush fires in both Wachusett and Sudbury watersheds. They also helped with a missing person at Sudbury Reservoir.

The [\*Wachusett Reservoir Watershed 2023 Public Access Plan Update\*](#) was approved in June 2023 and went into effect July 1, 2023. No major changes were made to the plan, but the fishing season has been extended until December 31.

#### **F. Watershed Security**

Ranger staff continue to maintain an active presence in the watershed. All Wachusett/Sudbury staff inform Rangers of any unusual activities. Interactions and coordination with MWRA, State Police, Environmental Police, and other enforcement personnel continued throughout the year.

DCR Rangers and Massachusetts Environmental Police met and coordinated plans for joint enforcement on Opening Day of Fishing. Rangers continue to update law enforcement officials and MWRA Security of any ongoing issues on Watershed property. Rangers and management setup an MOU agreement with CSX police regarding individuals on CSX property/railroad tracks abutting DCR property.

### **G. Infrastructure**

Monthly assessments on dams were performed, and all summary reports were produced. High priority roads and drainage structures were inspected this year and spot checks for lower priority roads were conducted. All DWSP owned structural BMPs were inspected and maintained as needed.

Sill repairs have been completed and siding and trim have been installed on three of four sides of the Lancaster Street barn. Additional cosmetic repairs have been made to the window casings on the interior so that insulation and framing are no longer visible. Window repairs for John Augustus Hall gymnasium were completed. A Wetlands Protection Act filing was made in preparation for the Kush property demolition.

Eighty-two building maintenance work requests were completed in FY23 including: installation of solar motion lights; removed, repaired and reinstalled MWRA docks; repainting and re-lettering watershed gates; and installation of new handicapped and veterans parking signs.

### **H. Watershed Protection Act**

Staff processed 22 Requests for Advisory Rulings, nine Requests for Watershed Determinations of Applicability, and two Variance Applications. One appeal was received for a Variance Decision. Two violations were addressed and resolved (one for uncovered storage of salt and the other for washing/servicing RVs on land above a Low Yield Aquifer). Efforts continue to update files of unresolved projects dating back to 2020 to determine if projects were completed, are in compliance with WsPA decisions, and ensure ongoing conditions are being monitored. New digital Watershed Protection Act maps and access to the online map viewer, regulations and application forms were provided to town halls as communities shift away from paper maps.

### **I. Education and Outreach**

School requests for programming included History Hikes, Watershed Wildlife Presentations, Model Watershed Activities, Water Quality Parameters, Interpreting Water Quality Data, and Fishing Lessons. Watershed Rangers presented engaging wildlife programs to entire grades, and the Regional Director and Rangers spoke with elementary school students about watershed protection and management. Mass Envirothon Water Workshops for participating teams were held throughout the year; staff coordinated the Water Ecostation during the annual competition and also offered guidance to the winning team in preparation of the National competition (which they also won!). Several educational videos were developed and are available online.

Outreach efforts were extended by offering several well-attended programs and presentations during weekday evenings. The trend for high school, university, and young professionals level field trips focusing on water resources was fostered by offering guided outdoor experiences and participating in career networking events.



Watershed educational brochures and handouts were developed for use on display/exhibit tables and distributed at networking events. Salt reduction messages were distributed via kiosk posters and handouts; a Salt Sleuth Citizen Science program was developed for Drinking Water Week and showcased at Dam Day. New professional interpretive/wayside panels and bulletin cases were installed at the Old Stone Church and Gate 36. Social media continues to be used for short announcements and outreach efforts. The Education Coordinator and Regional Director fulfilled interview requests from WBUR radio and Spectrum News to promote the spring Dam Day and also urge visitors to talk with watershed staff about watershed protection and the water supply.

## **J. Water Quality and Hydrologic Monitoring**

All regular weekly and bi-weekly tributary and quarterly nutrient samples were successfully collected, discharge measurements completed, and the [2022 Annual Water Quality Report](#) was completed and posted online. A total of 116 phytoplankton samples were analyzed and 47 profiles were collected in conjunction with phytoplankton and nutrient sampling. Data from MWRA remote sensing buoys were monitored and used to augment sampling programs as necessary. Six Mayfly continuous stream monitoring stations were maintained, five snow surveys were completed and staff continued to respond to and planned for water quality issues. DCR and MWRA water quality staff met bi-monthly to discuss water quality data collection, results and analysis, as well as discuss sampling challenges.

Three watershed towns, West Boylston, Holden, and Sterling were awarded matching grants as part of DWSP's Salt Reduction Grant initiative. Holden's award helped the town procure a salt brine generator system, which is great progress for the goal of reducing road salt inputs within the watershed. Three EQ staff participated in a "Salt Sleuth" outreach program on the environmental impacts of road salt and the importance of reduction, which was hosted at the Wachusett Dam Day in May. DCR and MWRA cooperated to cover the cost of a Baystate Roads training on Snow and Ice Operations in November, which was attended by 30 individuals from DCR, MWRA, and personnel from five Wachusett watershed towns.

As part of continuing collaboration with UMass researchers under the ISA agreement, Amanda Carneiro Marques was the lead author on the paper "[Assessment of nutrients and conductivity in the Wachusett Reservoir watershed: An investigation of land use contributions and trends](#)," which was accepted for publication in the International Soil and Water Conservation Research journal. DWSP staff are participating with a multi-agency salt task force including DOT, DEP, MassWildlife, and other groups to advance salt issues at the statewide level. This group made a presentation, which included DWSP's monitoring results, to nearly 100 attendees of DEP's Bureau of Water Resources group in March 2023.

Identification of preserved benthic macroinvertebrate samples continues as time allows. Priority has been given to samples from the Quinapoxet River ahead of planned dam removal. The Lake Trout mark recapture program continued with 119 new fish tagged and released, bringing the total number of Wachusett Lake Trout tagged to 1,021 fish. DCR aquatic biologists devised and coordinated the 2022 angler creel survey. 2,031 anglers were surveyed by DCR and MassWildlife staff. Lake Trout was the species most often reported as caught, which aligns with results collected in 2011, 2012, and 2017.

## **K. Watershed Monitoring and Assessment**

The Gates Brook EQA was completed and several recommendations were identified. Modernization of the environmental quality database was completed by GIS and environmental quality staff; a Onevision dashboard was produced that visually displays all applications, including agriculture, Watershed Protection Act, Construction General Permits, and environmental quality files and the sewer and septic datalayer. All information can now be displayed in one place and on one map.

Ten new environmental quality files were created this year. Agricultural sites, hazardous release sites, and municipal board and commission agendas and minutes were regularly reviewed and monitored.

A previous Pyrethroid outreach letter was updated and mailed to companies providing tick and mosquito control treatments within the watershed communities. Research was also conducted on PFAS.

## **L. Aquatic Invasive Species**

DCR Aquatic Biologists and Rangers responded to the illegal introduction of Tilapia in several reservoir locations in July 2022. Multiple fish were removed through DCR/MassWildlife cooperative efforts but at least 20 fish remained. Surveys in 2023 did not result in any Tilapia observations and it is likely these fish did not survive the winter. Monitoring for these fish and any new introductions is ongoing. DCR biologists also advised MWRA on a response to Asian Clams newly detected in Sudbury Reservoir. Physical management of phragmites continued to be addressed along the reservoir shoreline.

The partnership between MWRA and DCR on AIS removal in Wachusett Reservoir continued in FY23. Biologists continued support of removal efforts by maintaining ArcGIS Online tools for data collection from contractors and sharing with project partners. Biologists also inspected watercraft prior to equipment launch and assisted in allocating diver effort.

Management and monitoring for AIS in the water bodies close to the Reservoir occurred throughout the year. Surveys of Clamshell Pond indicate that Brazilian elodea has not returned since treatment in 2018 and water chestnut distribution remains very low with annual DCR hand-pulling efforts. The Lily Ponds have received fluridone treatment to successfully target brittle naiad the past two years. Reevaluation of management strategy at South Meadow Pond based on intensive survey efforts by contractors in the summer of 2022 resulted in budget adjustments and a new fluridone treatment scheme.

## **M. Wastewater Management**

The wastewater database was updated with 190 septic repairs and Title V inspections and 42 new sewer connections were recorded. The agency continues to be involved in the legal and payment issues related to the sewer systems. The meters for the DCR sewer lines were replaced in FY23 to provide more accurate flow recording. MWRA, DCR's contractor who oversees operations, maintenance and repairs for the sewer lines, completed their inflow and infiltration (I&I) report for the Holden portion of the system and submitted their report to DEP CERO for review and comment.



## **N. Stormwater Management**

Tighe and Bond has submitted the 75% design for review for the Route 110 direct discharge elimination project. DWSP assisted by collecting pond elevation data for modelling of the pond's hydrology. Project construction is anticipated to occur in FY25.

Conversations were held with the Towns of Boylston, Sterling, and West Boylston Department of Public Works Directors regarding potential partnership projects to alleviate problems at several areas where stormwater is an impact. DWSP provided a letter of support for several Town of West Boylston grant submissions.

Regular inspections were conducted on construction sites that disturbed greater than one acre and Watershed Protection Act projects.

## **O. Emergency Response**

There were 10 trainings and exercises amounting to 52 hours with a total of 120 attendees, allowing staff to remain familiar with ICS and emergency response techniques, including a Unionville Pond Dam safety tabletop exercise. Emergency management and response plans were updated and an exercise after action report was completed. A new regional response trailer was received from MWRA allowing the old one to be retrofitted to become a fire response trailer.

## **P. Support**

Core office functions, such as accounting, payroll, human resources, mail services, inquiries and voicemails to the main office, and work orders were all supported by staff.

Many projects were kicked off during FY23 and completed or had significant progress made on reaching the final goal. Highlights include the completion of the [FY24-FY28 Watershed Protection Plan](#) and the [Wachusett Public Access Plan](#).

GIS staff provided support for virtually all programs and sections. Highlights include offering four ArcGIS Pro training sessions for staff, providing maps, land cover/land use calculations and impervious percentage calculations for several projects, and maintaining data inventory and online data. Land Acquisition Program story maps were created for each purchase under consideration, boundary and map updates and corrections were completed, and datalayers/attribute tables were created with civil engineering showing Manhole, Trunk, And Relief Sewer for CERO DEP.

Total FY23 PILOT was \$8,479,324.48. This is the first time since legislation passed that there was no increase in PILOT. The total "Hold Harmless" amount (the amount calculated vs the amount paid because payment can never be less than previous year) was \$2,305,499. Total amount paid to Wachusett towns was \$3,564,910, or 42% of total. The amount paid to Sudbury towns was \$855,461, or 10% of total PILOT. DCR staff worked with Dept. of Revenue, Division of Local Services technical staff to set up [portals on the DLS Gateway that provide all PILOT details](#), making this information accessible and transparent for local officials and the public.

Staff continued to work to fill vacancies in the Section. Six full time positions were posted and filled: one Tractor Driver, one Maintenance Equipment Operator II, and two Laborer II vacancies were posted and filled as well as an Environmental Analyst III vacancy and a Ranger II position that were filled by internal promotions. The fiscal year ended with five vacancies and two staff on IA, which was representative of the level for the fiscal year.

## **Quabbin/Ware Region**

### **A. Land Acquisition**

Five projects went to record this fiscal year, four in Quabbin and one in Ware. These projects included a 32-acre fee gift in Hardwick (Zglobicki), a 29.4-acre fee project in Wendell (Simon), a 32.8-acre WPR gift in Petersham (Petrie), a 72-acre fee bargain sale in Rutland (Nelson Calkins Trust), and a 67-acre fee project in Petersham and Barre (Keller).

### **B. Watershed Protection Restrictions (WPR)**

WPR Coordinator and Regional Monitors completed 49 WPR monitoring visits this fiscal year. The WPR Coordinator assisted Regional Monitors with training, monitoring visits, and report writing as needed. Two baseline reports were completed in-house. The WPR coordinator worked on migrating WPR information into the LIS database. A new WPR e-newsletter was created – [A Watershed Moment](#) – and sent to WPR landowners.

### **C. Land Management**

Treatment of Japanese stiltgrass was conducted at various locations around the watersheds including Macedonia. In addition, a number of ailanthus trees were cut and treated. Invasive work was conducted by contractors at Barre Heath and Riis Hill.

Only two timber sales were sold in FY23 due to the pause on forest management. Information on all timber sales was prepared and posted on the DCR website as well as on a sign at the timber sale site. New forestry proposals were submitted for 13 lots at Quabbin and two at Ware River but were not presented to advisory committees. Forestry staff provided oversight and supervision on 11 active timber sales in FY23.

Work continued on the long-term paired watershed study. A draft calibration report was internally reviewed. All sample goals were met this fiscal year.

Ongoing work on CFI analysis continued. Over 500 regeneration survey plots were completed by watershed foresters.

Approximately 10 miles of boundary were located, marked, and maintained.

A draft burn plan for Gay's Hill heath was completed and sent for technical review.

### **D. Wildlife Management**

The Bird Harassment Program operated for 26 consecutive weeks from 10/3/22-3/30/23. Boat harassment was used on five nights between late January and early February. There were no coliform exceedances during the program. All operations were performed safely, and training continues on program orientation, cold water and trailer operations, pyrotechnics, and laser use.

Unmanned Aircraft System (UAS, or drones) flights were conducted at Quabbin weekly from October 2022 to mid-April 2023. The UAS program has been very successful and a very useful tool for the Bird Harassment Program. The weekly roost counts varied weekly with the highest count of 964 gulls on March 16, 2023.

The Canada goose control zone was surveyed during the nesting season; one nest was located, and seven eggs were treated to prevent hatching. The annual report was produced.

Nine beaver were removed from the Wildlife Pathogen Control Zone. In addition, work continued to prevent beaver-related flooding issues including monitoring and maintaining culverts, maintaining culvert fence guards, and repairing beaver-deceiver piping.

Research and management for common loons on DSWP waterbodies continued and the annual report was completed for the 2022 season. The lead tackle and fishing line canister program was completed for the 2022 season, which collected 2.44 pounds of lead. Five active eagle nests were confirmed in 2022.

Deer hunting was conducted at Quabbin in New Salem, Pelham, and Hardwick during the two-week shotgun season in December 2021. Up to 56 deer were reported by hunters. A controlled hunt was held on Prescott Peninsula and 47 deer were harvested. The final deer report was completed and shared with staff ahead of the 2023 deer hunt planning meeting. Quabbin ended up with over 550 applications to hunt in 2022.

#### **E. Public Access Management**

Information on access policies and regulations was distributed through the Quabbin Visitor Center and through numerous public contacts by the watershed rangers. The rangers logged approximately 33,000 visitor contacts during FY23.

The three Quabbin Boat Launch Areas (BLAs) operated daily. The 2023 season opened on its normal date in April to private boats and rental boats. The 2022 season closed on October 15, 2022. The boat inspection and decontamination programs were implemented again this year, with both boat washings and cold weather quarantines overseen by DWSP staff. Staff continued to use iPads to implement the boat seal program. All three BLAs continued with credit payment only systems. No cash payments were allowed.

EQ staff conduct regular inspections through EQA fieldwork that occasionally uncover recreation-related water quality concerns. These concerns are analyzed and mitigated as needed.

The Ware River Public Access Management Plan was almost completed in FY23 and will be finalized in early FY24.

Staff provided support and maintained the boat launch at Comet Pond. The boat ramp at Long Pond was re-constructed by the Office of Fishing and Boating.

Fifteen research permits were issued this year and the annual report was compiled and distributed.

#### **F. Watershed Security**

The Watershed Rangers conducted regular patrols of high-vulnerability areas around the reservations, and weekly summaries were submitted to MWRA. Rangers documented 221 violations in Quabbin and 518 violations in the Ware River.

Inspections of gates and bar ways on the reservations were performed and necessary repairs made.

Interactions and coordination with the State Police, Environmental Police, the State Police Marine Unit and other enforcement personnel continued throughout the year.

### **G. Infrastructure**

Civil Engineering staff performed and reported on monthly inspections and piezometer readings. DWSP staff conducted mowing, brush-cutting, and other maintenance operations on dams and dikes.

CE staff monitored failing conditions of the historic Keystone bridge on the middle branch Swift River in New Salem. In addition, 21 culverts and two bridges were inventoried and inspected.

Work was completed to upgrade the stream culvert at Gate 40. Environmental permits were granted for the reconstruction of Hell Huddle Road in Hardwick

Routine grounds maintenance was completed in Quabbin Park, including field mowing, weed whacking, and the removal of several hazardous trees or limbs. Staff prepared for Memorial Day in the Quabbin Park Cemetery with numerous plantings and assisted with burials in the cemetery.

Road work performed by DWSP staff included clearing several miles of roadside brush, cleaning drains, and filling potholes in Quabbin Park.

DWSP staff monitored gravel extractions by the towns of New Salem and Petersham.

Over 500 Quabbin Park Cemetery records were scanned into a digital database.

### **H. Watershed Protection Act**

Staff implemented the Watershed Protection Act (WsPA) through the review of applications, site visits, meetings with applicants and their representatives, holding variance hearings, and the issuance of decisions. Staff received 24 cases in the Ware River Watershed and an additional eight cases for the Quabbin Watershed. Staff investigated several violations in the Ware River and Quabbin watersheds.

Agendas and minutes were reviewed for all the relevant town boards in both watersheds. Staff contacted several towns regarding projects within WsPA jurisdiction.

The current WsPA database was modernized into a web-based platform and a SOP manual was completed.

### **I. Interpretive Services**

The Quabbin Visitor Center was open to the public all year, with a six-day per week schedule. About 4,000 people visited the Visitor Center. Nineteen presentations were made in person and an additional seven remote programs were presented. There were 38 programs presented to schools.

The DWSP website was regularly updated with new information about the Quabbin Controlled Deer Hunt, fishing programs, AIS, meeting announcements, the boat decontamination program, plan developments, area closures, and forestry projects.

DWSP finalized a one-year volunteer stewardship agreement with the Pioneer Valley Hiking Club. The club will preform light trail maintenance in Quabbin Park.

### **J. Water Quality and Quantity Monitoring**

EQ staff conducted routine biweekly water quality monitoring of Quabbin Reservoir watershed (Reservoir and tributaries) and Ware River tributaries. Phytoplankton sampling was conducted following the established monitoring plan.

Stream gauge data from seven tributary locations continued to be downloaded, processed, and stored in established data archives according to standard operating procedures. Preliminary analyses of stream temperature data were completed with a UMass seasonal intern, including the development of scripts for processing stream temperature data.

[The Annual Water Quality Report](#) was completed.

### **K. Watershed Monitoring and Assessment**

Staff regularly conducted site assessments, attended local board meetings, and monitored online databases to identify potential threats to water quality. Staff investigated various potential violations in the watersheds and followed up as needed. Burnshirt Canesto and Natty district and Fever Brook district EQA reports were completed.

The Yearly Operating Plans for vegetation management work on both the National Grid and Providence & Worcester Railroad rights-of-way were reviewed, and comment letters were submitted.

### **L. Aquatic Invasive Species**

Staff provided AIS information to the public through visitor contacts, displays in the Visitor Center, watershed kiosks, the DWSP website, and distribution of brochures during Boat Decontamination and Cold Weather Quarantine programs.

Approximately 8,108 boats were sealed in CY 2022 across the three BLAs: 2,041 at BLA1, 2,766 at BLA2, and 3,301 at BLA3.

The 2022 macrophyte survey on the Quabbin Reservoir was completed, and a final report is forthcoming. Staff also inspected and maintained the fragment barriers at BLA 2 and BLA 3. Swollen bladderwort was discovered in Pottapaug Pond in May 2023. Private boat launching was stopped at this location for the remainder of the 2023 fishing season, and hand harvesting took place over several days in June and July.

### **M. Wastewater Management**

No water quality issues were identified from septic systems, and the oversight provided by Title 5 was generally sufficient.

### **N. Stormwater Management**

Inspections of stormwater BMPs were conducted in the Ware River watershed. EQ staff monitored potential stormwater issues through field investigations and aerial imagery.

## **O. Emergency Response**

Emergency Contact Information was updated by staff online in Smartsheet. BLA emergency SOP was also reviewed and updated.

FY23 Spill Response Training was conducted through TIGER training. Emergency response trailers were inventoried and regularly stocked.

Nine spill plans were prepared for timber harvesting operations.

## **P. Support**

Staff participated in a wide variety of job-related trainings and workshops, interagency planning teams, and professional organizations.

Total FY23 PILOT was \$8,479,324.48. This is the first time since legislation passed that there was no increase in PILOT. The total “Hold Harmless” amount (the amount calculated vs the amount paid because payment can never be less than previous year) was \$2,305,499. Total amount paid to Quabbin towns was \$2,920,964, or 34% of total; the amount of that Quabbin total paid to five towns as “Annexed Lands” was \$662,153, which is 23% of the Quabbin total or 8% of total PILOT. The amount paid to Ware River towns was \$1,066,310, or 13% of total PILOT. DCR staff worked with Dept. of Revenue, Division of Local Services technical staff to set up [portals on the DLS Gateway](#) that provide all PILOT details, making this information accessible and transparent for local officials and the public.



# **FY2023 Work Plan Final Summary**

# Wachusett/Sudbury FY 23 Final Report



Update on all tasks in the Wachusett/Sudbury Work Plan for July 1, 2022 to June 30, 2023.

Task No.	Description	Final Report Comments
<b>A. Land Acquisition</b>		
A1	Acquire land. Coordinate due diligence and other tasks/services from DCR and private contractors to complete survey, appraisal, title, engineering, and environmental assessments for proposed acquisitions. Negotiate WPR language, purchase prices and conditions of sale with sellers of property.	Two projects went to record: a 28-acre fee acquisition in Sterling (Vaghini) and a 40-acre fee acquisition in Princeton (Pioneer Millennium Realty Trust). Four projects are currently underway at various stages of due diligence totaling over 200 acres.
A2	Develop individual parcel presentation materials and meet with MWRA Board for approval.	MWRA approved two acquisitions: 10 acre fee in Sterling and a 40 acre fee acquisition in Princeton on December 14th.
A3	Communicate with and convene LAP meetings to review parcels and prioritize land purchases.	Three virtual LAP meetings (7/26/22, 10/24/22, and 6/13/22) and one email LAP vote (8/30/22) were held this year. A total of seven Wachusett fee projects were approved.
A4	Use the LAP Prioritization Model to identify priority parcels in the watersheds.	Work to identify priority parcels is ongoing.
A5	Continue to solicit and work with landowners in donating conservation interests in land and assist in advising landowners on the tax incentives available when donating conservation interests.	Of the ongoing projects, work continues on a proposed donation of a 44-acre fee transfer in Rutland.
A6	Establish regularly scheduled land/legal meetings to address attorney assignments and project logistics.	Meetings with legal are ongoing.
<b>B. Watershed Preservation Restriction Monitoring</b>		
B1	Monitor WPRs on a regular basis, following monitoring procedures	WPR Coordinator and Regional Monitors completed 48 WPR monitoring visits in FY23. WPR Coordinator assisted Regional Monitors with training, monitoring visits, and report writing. WPR Coordinator reviewed all monitoring reports completed by Regional Monitors. WPR Coordinator continued piloting Aerial Monitoring software, and completed 4 monitoring reports using the software.
B2	Complete baseline documentation reports for new WPRs prior to acquisition or within a reasonable time after acquisition, following EOEEA specifications. Baselines will be done in-house or through appropriate contracts.	No baseline reports completed this FY.
B3	Meet with Restriction Stewardship Working Group and confer with legal to respond to enforcement issues and requests to exercise reserved rights.	Restriction Stewardship Working Group met quarterly in FY23. WPR Coordinator continued working with DCR-Parks stewardship staff on updating the Enforcement Procedure. WPR Coordinator conferred with Natural Resource Director on a few minor issues and violations that were discovered during routine monitoring.
B4	Track changes in landownership for WPRs.	WPR Coordinator, Regional Monitors, and Michelle Andrade continued to track changes in landownership for WPRs.
B5	Explore additional ways to reach out to landowners through the use of social media and web-based content.	The WPR Coordinator and Jim Taylor created a new WPR landowner E-news, A Watershed Moment, which includes a "Notes from the Field" StoryMap. Two issues of the E-News were sent to WPR landowners in FY23. Discussion with Regional Director re: adding a small water quality tip in each newsletter.
B6	Implement WPR records procedure with DCR records manager	WPR Coordinator spent 1-2 days/week at the Boston office culling DWSP land files as part of the File Digitization Project (January-May). WPR Coordinator worked on updating the WPR information in the LIS database.
<b>C. Land Management</b>		
C1	Implement the system-wide comprehensive Land Management Plan (LMP).	A review of the LMP and updates on hold until the new Forestry Guidelines are presented in December, as called for in the new EEA Forests as Climate Solutions policy
C2	Prepare forest harvest proposals for next fiscal year including data on proposed harvest areas, characteristics of stands, soils, cultural resources, wetlands, wildlife, unique features, and priority habitats. Proposals shall also include information on lot layout, landings, stream crossings, wetland crossings, and stonewall crossings.	All narratives for FY24 lot proposals were completed. Stream crossing locations, landing locations and haul roads were added to the appropriate GIS layers. There are 7 seven forest management operations being proposed for FY24 that cover a combined 352 acres. The areas chosen for management were based on an analysis of the forest age structure of the subwatersheds that make up the larger Wachusett Reservoir watershed as well as the age structure of the individual management units. Attention is focused first on subwatersheds that have proportionately less young forest and then the management units within those subwatersheds that have a relative deficit of young forest. Hikes were done for all proposals with NR staff. A separate round of hikes were done for selected proposals with NR staff and DCR Archeologist JP Patton. Several Quabbin/Ware River foresters attended as it was a good opportunity to meet the new DCR Archeologist and discuss a wide range of issues at the confluence of forestry and cultural resource protection.

Task No.	Description	Final Report Comments
C3	Plan and conduct an internal review of proposed logging operations for the coming year, including assessments of silviculture, water quality, wildlife, and other potential impacts/benefits Review lots to ensure consistency with aspects of the CLMP, including wildlife, forestry objectives, and environmental quality.	<p>Lot proposal narratives were created this year in a Word format rather than in the timber sale database in order to ease the development of web content for public information and comment. Maps were developed in ArcPro rather than presented online to lock in features and avoid perennial issues with data layer deprecation in story maps.</p> <p>All proposals were reviewed by internal NR, EQ, WM, and CR staff as required. Review comments from CR staff were distributed to foresters, but final internal review comments are on hold pending potential updates resulting from the EEQ Forestry Guidelines review committee.</p>
C4	Present annual forest harvest proposals at a public meeting. Publish Online Public Review document/story map. Accept public comment and respond as needed.	Progress on internal lot proposal process has been suspended pending the completion of the Forests as Climate Solutions effort.
C5	Plan, lay out, mark products for removal, prepare maps and permits, establish photo monitoring points, file Forest Cutting Plans, seek bids, award permits, and properly advertise and post forest management operations consistent with the Forest Cutting Practices regulations, the LMP, and approved harvest proposals.	Prepared 4 lots (on hold); 2 lots shown August, 2 lots shown in November.
C6	Provide supervision and oversight of all forest harvesting operations on DWSP property. Assure compliance with applicable DCR and NHESP regulations and restrictions, approved BMPs, and all Permit conditions. Maintain adequate site visit records. Monitor post-harvest and collect photo point images consistent with internal policy.	Supervised all active lots. We are currently taking photos at 51 timber sales dating back to 2009. Photos have been taken at over 726 established photo monitoring locations. Photos are taken prior to cutting of the timber sale and immediately after or within the year that the sale is complete. Additional photos are then typically taken within 2 years hence for up to 2 cycles and then every 4 to 5 years after that. Effort is made to take all photos during the growing season to allow the easier comparison of photos over time.
C7	Monitor water quality (turbidity) at active harvesting stream crossing sites to measure effectiveness of BMPs.	3 site visits and 1 post-harvest sample analyzed for turbidity in FY23. Short-term forestry sampling program suspended in Q3. Memo presenting analysis and rationale for ending monitoring program was submitted to Division Director, RD.
C8	Continue to implement long-term paired watershed monitoring to assess impact of DWSP forest management on tributary water quality.	Flow monitoring was conducted through the spring of 2023. Dry weather monthly sampling was conducted Oct-Dec, and was put on hold until the harvest begins. Project status summary included in 2022 Water Quality Report
C9	Conduct periodical regeneration and invasive species surveys to monitor forest health and development resulting from silvicultural activities or other natural disturbances and processes.	No activity has taken place on this task. The vacant Forester II Wachusett position has been transferred to the Natural Resources section to assist with terrestrial invasive species management going forward.
C10	Conduct periodic reviews and monitoring of land management activities and forest conditions to assure compliance and consistency with Land Management Plan.	Ongoing data prep/cleaning and analysis of CFI data. Data shared with EEA collaborators from HF and UMass as part of ongoing statewide carbon modeling effort.
C11	Collect data and maintain GIS datalayers related to forest structure, composition, regeneration, roads, boundary information, stone walls, wetlands, streams, and other data to guide the land management program. Maintain GIS data documenting the location, extent, and intensity of all silvicultural operations.	Data collection and datalayers are being maintained as needed.
C12	Assess all new fee land acquisitions, documenting existing conditions of forests, access roads, bridges and culverts, boundary markings, and restoration needs. Integrate these lands into existing GIS datasets and land management, public access, and other watershed management programs.	Ongoing as needed. Reviewed and provided comments for all potential land acquisitions
C13	Locate, mark, and maintain property boundaries periodically and as needed.	15.1 miles were completed in the Sudbury watershed and 9 miles were completed in the Wachusett watershed. The boundaries were located, flagged, blazed and tagged on the 1.0 mile perimeter of the newly acquired Vaghini property in Sterling.
C14	Develop scope of work and manage contracted property boundary survey work.	All identified projects were completed.
C15	Document and pursue resolution of all property boundary encroachments.	DCR has implemented a new Encroachment Policy. Smaller, simple encroachments have been resolved. Information and documentation for more complex encroachments have been added to the database.
C16	Identify, plan, and oversee non-forest or other unique habitat restoration, field reclamation, and maintenance work.	All fields scheduled to be mowed in FY23 were mowed according to the Mowing Plan. No new contracted work was done on any fields in FY23, but plans were developed and will be implemented as needed pending the results of repeated mowing. Hillary led a team to locate and protect the newly listed Monarch caterpillars in Smith Field prior to hayfield mowing during the summer of 2022.
C17	Identify, prioritize, and implement terrestrial invasive plant (TIP) control projects in line with the expanded Terrestrial Invasive Plant Management Plan. Respond as needed to newly discovered and controllable TIP populations.	Continued annual control efforts for Canada thistle, teasel, mile-a-minute, and stiltgrass in the summer of 2022. Abandoned hardware cloth trial for knotweed control at Lancaster Street. Mapped population of Amur corktree off Acre Bridge Road. Submitted several new records to EDDMapS. TIPMP development resumed in Q3. Posted positions for LTS Forestry Assistants and a Forester II to implement invasive plant control projects.

Task No.	Description	Final Report Comments
C18	Collect data and maintain datasets, GIS datalayers, and related maps and reports of rare and listed plants and communities.	Collaboration with NHESP and NPT ongoing as needed. Assisted NPT with survey near Worcester Pump Station for historically documented rare plant population (none found). Plan to join surveyors again in FY24 Q1 for similar work. Currently no known rare species populations on DWSP lands within Wachusett Region.
C19	If available, use unmanned aerial system (UAS) to document forest conditions, map openings, identify invasive plant populations, assess internal road conditions, or conduct other activities.	No other UAS missions were conducted because the Division has not received approval from EEA to expand the DWSP UAS Program. Additionally, no other individual projects were proposed to EEA for approval.
C20	Continue to work with DCR Asian Longhorned Beetle Program and USDA to oversee beetle eradication in watershed areas.	No ALB has been detected in the watershed for over a year. Internal ALB monitoring reports have been reviewed as they are received.
C21	Hazardous Tree Removal	Responded to numerous potentially hazardous tree inquiries from abutters in both Wachusett and Sudbury watersheds. 15 hazardous trees were removed from below the dam, hazard tree removed from adjacent to Rte 85 in Southboro and additional hazard tree removed from West Boylston.
C22	Maintain deer exclosures and sample vegetation periodically to assess impacts of herbivore browsing.	Ongoing as needed. No repairs required this year.
C23	Conducts field inspections of mapped sensitive resource areas, review YOPs and VMPs, and provides comment for ROW Management projects.	Reviewed National Grid YOP- No activity proposed in Wachusett Watershed. Town of Holden YOP: Reviewed the Town of Holden Vegetation Management YOP/herbicide application route and wetland resources along the route. P&W RR ROW 2023 YOP & Sensitive Area maps - Review/Field Verify, Provide comments for P&W 2023 YOP Comment letter.
C24	Organize, inventory, and categorize permit, lease, and easement information and enter information into the database.	The permits and lease agreements have been organized and entered in the database. Continue to do adjustment and adding details.
C25	Participate in process to transfer lands surrounding Framingham Reservoirs 1 and 2 to DCR Parks.	There has been no discussion on this land transfer
	<b>D. Wildlife Management</b>	
D1	Continue the active harassment of gulls within the Pathogen Control Zone at Wachusett Reservoir, using human presence, boats, pyrotechnics, passive scare devices, and other techniques. Continue to identify and test new harassment techniques.	The active evening program continued through January and February utilizing two shore staff and a boat crew while operating 2 days per week excluding weekends and holidays. Harassment, primarily by boat, was successful in moving birds from the North Basin almost every evening. The use of boats was dropped on March 9th while the program continued for another two weeks before concluding for the season on March 16th. Overall the program was considered a success in that federal regulatory thresholds for bacteria were not exceeded and that there were no safety issues. Depredation permitting system has seen some recent changes and the expiration date has changed. Permit now expires in September of FY 2024.
D2	Observe and document the nocturnal roost of gulls on the reservoir weekly during the months of September- March.	Gull number ranged from 0 to 1,800 (1/11/23) at the Wachusett roost site. Observations during part of the fiscal year indicated that gull numbers were highest at the roost when the BHP was in operation. Many gulls roosted in the north basin when BHP not in operation, but this became an inconsistent observation as the winter progressed. NR regularly communicated with EQ staff about observations. DOT Aeronautics Program flew drones to survey the roost on 3 occasions.
D3	Control Canada geese populations at Wachusett Reservoir by treating eggs during nesting season to prevent hatching.	Canada goose eggs were treated at Wachusett and Sudbury.
D4	Identify places in MA where human derived food is available for gulls and work to prevent feeding through educational signage, interaction and enforcement.	Gull numbers were monitored at known feeding areas; no new feeding sites were discovered and no new signage was deployed. Surveys at the Fitchburg-Westminster landfill occurred throughout the gull monitoring season and USDA continued their seasonal harassment here. Monitoring at WWTP continued. Existing mitigation measures appear to be working with the same effectiveness
D5	Aquatic Mammal Control: Remove beaver and muskrat in the Aquatic Wildlife Pathogen Control Zone at Wachusett.	Aquatic mammal surveys and trapping was conducted as needed. No beaver or muskrat were observed in the pathogen zone.
D6	Respond to problems of burrowing animals on dams and dikes; take appropriate action.	Surveys revealed two active animal burrows present on the dikes that were treated and filled.
D7	Research and manage for common loons on DWSP waterbodies; provide nesting platforms, capture and sample birds for contaminants.	Research and management for Common Loons on the DWSP waterbodies continued and the annual report for the 2022 season was completed. Collection of lead tackle from the Quabbin, Wachusett and Ware River watersheds totalled 2.44 pounds and monofilament line collection totalled 13.1 miles in 2022.
D8	Continue long-term wildlife resource monitoring program.	Annual long-term monitoring of wildlife resources continued and data from 2022 were analyzed.
D9	Work with MA Department of Fisheries and Wildlife (DFW) to survey for and document breeding bald eagles on the reservoir.	Eagle nest on Wachusett Reservoir was monitored and information was shared with MassWildlife.

Task No.	Description	Final Report Comments
D10	Plan for the White-tailed Deer Management Program on DWSP lands at Wachusett and Sudbury; Administer the applications, permits, and orientations for the Wachusett Reservoir Zone Deer Hunt	Results from the Watershed hunts were analyzed and finalized. The 2023 results and plans for 2024 were published in the 2023 Deer Report. NR met with staff to discuss plans for the upcoming deer hunt in FY24. A lot of work was done to revamp the Deer Hunt webpages and Deer hunt maps. A new online mapping experience was developed with DWSP GIS team to make it easier for hunters to identify where they can hunt and what permit(s) they need. <a href="https://www.mass.gov/dcr-watershed-hunting">https://www.mass.gov/dcr-watershed-hunting</a> MAP: <a href="https://experience.arcgis.com/experience/6f29d9152ce24f888880ab0eb180def4">https://experience.arcgis.com/experience/6f29d9152ce24f888880ab0eb180def4</a>
D11	Coordinate with the Massachusetts Natural Heritage and Endangered Species Program concerning rare species occurrences and protection	Rare species observations were shared with the State Ornithologist; kestrel activity was monitored at nest boxes; and communicated with Engineers and NHESP in regards to restoring rare turtle habitat.
	<b>E. Public Access Management</b>	
E1	Proactively patrol watershed lands to ensure compliance with DCR regulations and policies. Tally visitor contact and produce quarterly and annual summary reports. Conduct trend analysis on visitor statistics and rule violations.	The Rangers had totals of 15,321 Visitor contacts, 1,017 CMR Violations and 36 Parking tickets for FY23.
E2	Continue to cooperate with state, environmental, and local police for help with enforcement when required.	Ranger supervisors and staff continue to work with Massachusetts State police, Environmental police and all local Law Enforcement teams in the watershed. Rangers continue to communicate and make proper notifications to all law enforcement when necessary. Coordinated effort for Opening Day of Fishing operations planned with MEP, Dam Day event with MSP and CPD. Setup an MOU agreement with CSX police regarding individuals on CSX property abutting DCR.
E3	Continue to use DCR social media accounts for advertisement of interpretive programs, including general or emergency information (such as closings).	Announcements and upcoming events were sent to DCR press office for approval before submitting to local media. Salt reduction message posted on Instagram Stories before storm on 3/3. World Water Day 3/22 Twitter post. Salt Sleuth citizen science press release. Education Coordinator and RD fulfilled an interview request from WBUR radio and Spectrum News to promote the spring dam opening.
E4	Develop public outreach regarding allowed uses on DCR Wachusett lands.	Rangers continue to inspect conditions and placement of all the rules and regulation signage throughout the watershed. Rangers posted seasonal updates for regulatory hunting and the closing of fishing season where appropriate.
E5	Continue updates and improvements to access points with signs, gates and improved parking areas. Conduct regular inspections of gates and access barriers.	Rangers continue to inspect conditions and placement of all the rules and regulation signage throughout the watershed. Rangers posted seasonal updates for regulatory hunting and the closing of fishing season where appropriate.
E6	Regularly evaluate and modify policies within the current Public Access Plan and publish annual appendices with policy modifications or to regulate new proposed uses on DWSP lands.	Recurring violations due to changes in Sudbury access policies discussed internally. Rangers continue to enforce regulations and respond to complaints.
E7	Continue to conduct "special operations" such as night operations, ATV, and snowmobile operations, as needed.	All ranger staff utilize the equipment provided to ranger staff for various patrols. Rangers use boats when able to and can patrol shoreline perimeter efficiently. Rangers use ATV/UTV to patrol for areas when necessary.
E8	Enforce rules and regulations of 313 CMR 11.09 through the use of citations. Issue written warnings and/or non-criminal citations for repeat offenders and serious violations.	Rangers will no longer issue citations or written warnings and will be focusing on educating visitors. Rangers will continue to document all violations that occur and provide enforcement through education to gain compliance. If compliance is not attained then rangers may request law enforcement for removal.
E9	Update the Wachusett Public Access Plan	Wachusett Public Access Plan Update completed and approved on 6/14 with no major changes. The new plan went into effect on 7/1/23.
	<b>F. Watershed Security</b>	
F1	Maintain an active presence in the watershed. Monitor watershed lands, roadways, and railways for unusual or suspicious activities; provide appropriate response.	All ranger staff are out proactively patrolling and reporting any type of suspicious person, vehicle or activity to appropriate authorities.
F2	Continue ongoing communication and coordination with local, state, and federal emergency responders; coordinate with MWRA on all security issues.	Rangers continue to communicate with MWRA staff and Security group on any issues that a response is needed.
F3	Continue program of enhancing security infrastructure around Wachusett Reservoir.	Rangers continue to make suggestions for improvements to infrastructures around the reservoir.
F4	Inspect, maintain, and monitor gates, barways, and signage throughout the watersheds for security and access control.	Rangers continue to fill out work requests when repairs are needed to any gate, sign or pipe gates to maintain access and control points.
	<b>G. Infrastructure</b>	
G1	Assess Wachusett and Sudbury dams, spillways, and dikes monthly, monitor conditions and maintenance activities, and prepare work requests as necessary. Forward all significant issues to the Regional Director and the MWRA. Coordinate with MWRA on biannual dam safety inspections for compliance with 302 CMR 10.00.	Continue to Perform monthly inspections and writing summary reports.

Task No.	Description	Final Report Comments
G2	Assess DWSP smaller dams semi-annually, monitor conditions and maintenance activities, and prepare work requests as necessary. Coordinate DCR's role in dam removal projects.	Continue to Check beaver activities at Muschopauge dam, Unionville dam and Tenney's-Pond-Dam and continued to perform inspections on small dams.
G4	Conduct annual inspection/evaluation of Wachusett internal roads, drainage structures and shoreline access points; update GIS data layers as needed and develop list of maintenance and repairs needs.	Development of road work maintenance items is on-going.
G5	Develop annual plan for internal road repair/reconstruction projects.	Development of work plans is on-going.
G6	Conduct road, stormwater BMP's, and dam maintenance/repair projects using in-house staff and resources. Provide oversight to ensure protection of water resources.	Road work is on-going. MEOs are wrapping up project inside Gate 28.
G7	Conduct regular inspections of all DWSP BMPs, monitor conditions and maintenance activities, prepare work requests and plans for maintenance and repair projects.	Inspection of BMPs is on-going.
G8	Evaluate Sudbury watershed access, internal roads and develop work plan, as necessary.	No work was done. All work was focused on Wachusett system.
G9	Layout and oversee construction of Sudbury Boat Ramp at East Main Street	Permits are in place. Plan to begin work this summer
G10	Provide supervision, coordination, oversight, and technical support or assistance for all engineering, construction, and renovation work in Section.	Ongoing
G11	Maintain records and plans regarding property lines, reservoir and facility construction, and maintenance operations.	On-going
G12	Implement annual Major Projects	Regular meetings were held and frequent communications to monitor the statuses of major projects. Submitted RDA to Sterling Conservation Commission for Kush demolition. A Negative Determination of Applicability ruling is forthcoming. Sill repairs have been completed and siding and trim have been installed on 3 of 4 sides of the Lancaster Street barn. Additional cosmetic repairs have been made to the window casings on the interior so that insulation and framing are no longer visible. Window repairs for John Augustus Hall gymnasium were completed.
G13	Coordinate with WM to provide access to water quality monitoring stations and perform occasional maintenance activities at stream gages	Coordinated as needed. Station access maintained on a fixed schedule with WM.
G14	Evaluate and coordinate the monitoring of facilities for compliance with state and federal regulations. Develop and update required documents, as necessary	Continue with trainings as needed.
G15	Maintenance of forest roads, dams, dike, fields, parking areas, drainage structures , snowplowing, boat launch areas, and other management activities.	Ongoing
G16	Prioritize and schedule online workorders for division staff and add to daily work plan.	Watershed Maintenance completed (218) work requests in FY23.
G17	Assist division staff with specific workorders as needed.	Ongoing
G18	Maintenance of grounds at MWRA facilities as needed. Clinton (Cosgrove), Oakdale (Shaft One)	Ongoing.
G19	Conduct building maintenance activities, including painting, carpentry, cleaning, minor repairs, and other routine maintenance	Building maintenance completed (82) work requests in FY23.
G20	Inspect all Wachusett facilities, buildings, related structures and building utility systems. Determine needed costs of materials for maintenance, repair and replacement of parts as needed.	Installed motion solar motion lights @ response garage; re-wired NR deer hunt trailer; installed new toilet @ Clinton garage; Installed plywood walls in new salt shed in Clinton; Removed, repaired and installed MWRA docks, with new tethers; Installed new gutter on storage garage in Clinton; Installed new on-demand hot water units in kitchen and lab @ JAH; Repaired/re-decked several trailers; Constructed new wall on stage at JAH gym, for file storage; New monitor installed in cafe @ JAH; Replaced 6 fluorescent light fixtures @ JAH, more to come with new fiscal year; Passed fire alarm inspection; Held fire drill; Re-keyed old DPH offices to prepare for "hotel space" offices; Watershed gate painting / re-lettering project continues; Installed new Veterans' parking signs; Installed new HP parking signs; Replaced & upgraded older signs at JAH.
	<b>H. Watershed Protection Act</b>	
H1	Continue implementation of the WsPA.	Staff processed 22 Requests for Advisory Rulings, 9 Requests for Watershed Determination of Applicability, and 2 Variance Applications. 1 appeal was received for a Variance Decision. 2 Violations were addressed and resolved; 1 for uncovered storage of salt and 1 for washing/servicing RVs on land above a Low Yield Aquifer. All files are entered into the WsPA database and associated documents, plans, and reports are saved in Sharepoint.



Task No.	Description	Final Report Comments
H2	Convene the Watershed Protection Act Working Group regularly to discuss policy and address specific problems related to the WsPA	WsPAWG continues to meet formally and informally to review regulatory implementation of the Act. Effective communication amongst staff ensures consistent interpretation of the law.
H3	Review permits for watershed towns on a monthly basis with letters sent to property owners of affected parcels.	Watershed Building Departments and Conservation Commission staff are contacting DCR whenever they receive applications that are located within WsPA jurisdiction. Town staff are starting to refer applicants directly to DCR so we can provide guidance on the application process and regulatory requirements under WsPA.
H4	Review property transfers for seven towns on a monthly basis with letters sent to new property owners of affected parcels informing them of the WsPA and how they may obtain additional information.	Staff is beginning to coordinate with Assessors in the watershed to obtain timely property transfer information so that we can continue welcoming and providing water quality information to new property owners within WsPA jurisdiction. This makes property owners aware of water quality issues and their role and responsibility under the WsPA.
H5	Review files from previous year on an ongoing basis, including contact with owners and site visits as needed. Emphasis placed on monitoring active variances.	Staff has investigated files of unresolved projects dating back to 2020 to determine if projects were completed, are in compliance with WsPA decisions, and if any ongoing conditions are being addressed.
H6	Provide Town Halls with WsPA maps, brochures and applications on a regular basis.	Staff sent new digital WsPA Maps to watershed towns and provided access to WsPA Map Viewer, Regulations, Application Forms, and brochures. Towns are requesting more electronic mapping rather than paper maps. Some towns have the capabilities to print maps if they prefer to display at the town halls. Many of the towns use the WsPA Map Viewer to determine if there is jurisdiction on the applications they are processing and they have commented that it is very helpful.
I. Education and Outreach		
I1	Review, implement, and amend the Wachusett Interpretive Services Plan.	Interpretive Staff and Rangers conducted interpretive programming and presentations in the watershed, at schools, libraries, and community groups. Collaborated with other staff on creating video tours. Finalized Protecting the Monarch Butterfly video <a href="https://youtu.be/I73x42LvQ8o">https://youtu.be/I73x42LvQ8o</a> . Vernal Pool video completed and posted on DCR YouTube <a href="https://youtu.be/ClkpJqa5Z3Q">https://youtu.be/ClkpJqa5Z3Q</a>
I2	Coordinate Educational and Outreach programs	Interpretive Services and Watershed Rangers offered 89 programs with a total attendance for the year of 10,122 participants. Outreach efforts were extended by offering several well-attended programs and presentations during weekday evenings. The trend for High School, University and Young Professionals level field trips focusing on water resources was fostered by offering guided outdoor experiences and participating in career networking events. In-person school visits in Wachusett and Sudbury Watersheds continued with updated lesson plans highlighting the water supply, cultural and natural history of the properties. Outreach was enhanced by collaborating with local hiking groups in offering popular hiking series, inspiring stewardship and strengthening our shared watershed protection message. Volunteer Clean-up events were held to encourage stewardship. Upcoming events and initiatives were shared with monthly email newsletter subscribers. Watershed educational brochures and handouts were developed for display/exhibit tables and distributed at networking events. Salt reduction messages were distributed via kiosk posters and handouts with QR codes linking to the Salt Reduction video online. Salt Sleuth Citizen Science program was developed for Drinking Water Week and showcased at Dam Day. Monthly email newsletter to subscribers has been a valuable way to sharing news on upcoming events and initiatives. The DCR Water Supply Protection YouTube Playlist has been enhanced with 2 additional videos this year. An educational video on Protecting the Monarch Butterfly video <a href="https://youtu.be/I73x42LvQ8o">https://youtu.be/I73x42LvQ8o</a> and Vernal Pools was completed and posted <a href="https://youtu.be/ClkpJqa5Z3Q">https://youtu.be/ClkpJqa5Z3Q</a>
I3	Maintain and enhance kiosks and bulletin boards throughout the watershed.	New weather resistant prints of kiosk posters were installed and maintained. Wildlife and Watershed Management related posters were created and made available online on DCR DSWP Education pages, with QR codes linking to DWSP YouTube videos for additional information. Watershed Education brochures were updated with coming events and distributed.
I4	Perform inventory of signage and make recommendations for improvements and additions of stewardship signs	Rangers will be performing an inventory check for replacing all rules and regulations signage in places that are necessary.
I5	Analyze and update current brochures. Determine need for new brochure topics and develop as needed.	No updates to current brochures are required as information and web links remain valid. No new brochures needed at this time. Pool brochure distributed to Southborough Conservation Commission and Surfside Pool Company in West Boylston.
I6	Partner with other organizations on watershed programs	Maintained relationships with local hiking groups and cross-promoted events with a shared mission of stewardship and water conservation. Attended MEES board meetings.
I7	Provide educational materials, teacher training, and support for Mass Envirothon	Prepared Water Workshops for participating teams throughout the year. Ran the Water Ecostation during the competition and offered guidance to the winning team for the National Competition.

Task No.	Description	Final Report Comments
I8	Maintain and update website with relevant news and information	Website updated regularly. Wachusett programs listed in timely manner. Alert banners posted for short-term information. Meeting information for Wachusett related events, including Water Supply Protection Trust, Wachusett Access Plan, and annual fishing season, published in required time frame. Interpretive Services events are posted in several locations on the DCR website for easy access by the public. Several videos have been developed by the Natural Resources and Interpretive Services sections: <a href="https://www.youtube.com/playlist?list=PL2yN9X7t6shr1ASUNCA2B8Gk0EHa7sDWH">https://www.youtube.com/playlist?list=PL2yN9X7t6shr1ASUNCA2B8Gk0EHa7sDWH</a> . Utilization of StoryMaps and other GIS related apps are posted throughout the website.
I9	Organize existing photographs and develop an inventory of new photos for Sudbury Watershed	New folders have been created on the DWSP Sharepoint file; addition of photos has begun as they are taken. Older photos found at the Ranger Station have been scanned in.
J. Water Quality and Hydrologic Monitoring		
J1	Perform routine tributary sampling twice per month (bacteria, turbidity, field parameters) (WATTRB)	All sampling trips were completed, twice per month, as expected in FY 23
J2	Perform Nutrient, Chloride and TSS sampling every month at 10 tributaries, including field parameters (and Shaft 1 when Quabbin transfer is active.) (WATMDC)	Sampling completed as expected, once per month for all of FY23
J3	Conduct reservoir profile and plankton sampling at least weekly from April - September and bi-weekly from October - March when ice conditions permit. Conduct additional sampling as necessary and when nuisance taxa increase beyond established thresholds. Use remote sensors (MWRA Buoys) to inform sampling program.	A total of 116 phytoplankton samples were analyzed this fiscal year. 47 profiles were collected in conjunction with phytoplankton and nutrient sampling. Wachusett aquatic biology staff assisted the Quabbin EQ section with phytoplankton collection and analysis through Q3 while new staff were hired and trained.
J4	Conduct quarterly reservoir nutrient sampling	All quarterly nutrient samples were successfully collected this fiscal year.
J5	Conduct reservoir bacteria transect sampling monthly or more frequently in conjunction with gull harassment program.	Bacteria Transects collected on 15 days during FY2023
J6	Produce annual water quality report and document changes to sampling plan in the report.	Final report completed and posted to DCR website in Q4
J7	Maintain continuous stream flow gages in all four watersheds through USGS contract. Coordinate with USGS to ensure proper performance of all gages, and accurate and timely reporting of data.	All gages operational for entirety of FY23. FY24 JFA executed.
J8	Augment hydrologic data in Wachusett watershed through monitoring of stream flows, groundwater levels, and precipitation. Take snow pack measurements. Develop and maintain accurate rating curves.	Hydrologic monitoring continued successfully in FY23. Six mayfly stations operated fairly well, with a few minor issues during the year. Data quality was evaluated and was very good. Redundant HOB0 loggers were removed. HOB0s remain at MD05 and M110. Work began on a new CTD sensor that will be piloted at M110. Snowpack was only present and measured during Q3. Rating curves were all confirmed, though Muddy Brook was updated to a 2 part rating. MD02 and MD03 ratings were updated due to a datum shift.
J9	Generate solute loading estimates for flow monitored tributaries. Expand to include smaller tributaries and Quabbin transfer when sufficient data has been collected.	Some work was completed on this effort, but was then stalled due to higher priority projects and staffing.
J10	Continue contract to work with UMass to use results of water quality models and other watershed/water quality analyses to help to make watershed management decisions. Project will include topics in Quabbin/Ware watersheds as appropriate.	EQ staff met regularly with UMass to kick off the new two year ISA. The group has discussed Wachusett Reservoir CE-QUAL modelling, modelling of algal populations in Wachusett Reservoir, and a new effort to model road salt reductions in the watershed and the fate of chlorides in the watershed. Salt use information collected by DCR was shared with UMass, and separate discussions were held on that topic to explain the information collected to date. Dr. Lily Jeznach (RWU) was the lead author on a paper published in the journal Case Studies in Chemical and Environmental Engineering titled "Modeling the effects of reservoir operation on algal dynamics" which simulated effects of changing reservoir operation scenarios on chlorophyll concentrations in Wachusett Reservoir. Earlier initiation of the Quabbin transfer resulted in predicted lower chlorophyll a concentrations in summer months.
J11	Identify and outline system-wide water quality issues and challenges. Bring to ResOps and/or WQSAT for discussion and integrate into water quality modeling work with UMass.	A new bi-monthly water quality data meeting was established between MWRA WQ and DCR EQ staff to discuss water quality data and issues, challenges, and research needs for water quality. This meeting has proven to be helpful and productive. Worked with MWRA on revisions to the phytoplankton sampling plan to reduce unnecessary sampling effort. Revised plan for Wachusett moves away from the numerical monitoring trigger for taste and odor algae to an alert threshold. These changes were presented at Res Ops and were put in place for 2023. A spring WQSAT meeting was held to discuss sampling arrangements, logistics, and materials for this year.

Task No.	Description	Final Report Comments
J12	Work with local DPWs, massDOT, UMASS, MWRA, and others to reduce applications of road salt in the watershed and prevent additional increases in chloride concentrations in tributaries and the reservoir.	Met with watershed town DPW directors to collect feedback on the best timing on the salt grant program, which resulted in better fit with town fiscal cycles. Presented an update on salt related progress to MWRA at Res Ops. Met with Umass to discuss salt use totals, research focus, and analysis of spatial specific conductance data. Video messages explaining the importance of road salt reduction were filmed this fall and posted on DCR's Instagram feed at the outset of a snowstorm. Provided comments on DOT's Snow and Ice control program ESPR through the MEPA review process. Requested winter 2022-2023 salt totals from Wachusett watershed towns. Early numbers show lower totals than in recent years. Some towns used significantly lower amounts of road salt, although it was also a moderate winter. Requested Wachusett watershed salt totals from MassDOT as well. A Citizen Scientist Outreach program was designed and held at the Wachusett dam day in May, exposing over 4,000 visitors to information about negative impacts of using too much salt. Several hundred people stopped to ask questions, get water tested, or received pamphlets. Public feedback was positive.
J13	Continue reservoir-wide data collection to increase understanding of reservoir dynamics including stratification, interflow, and distribution of phytoplankton.	Profile and plankton data were collected outside of routine locations to better understand distribution of chrysophytes and cyanophytes.
J14	Continue monitoring stormwater basins at Rt 12/140 intersection for water quality, algae, invasive species, and mosquito larva.	Monthly monitoring continued including surveys for mosquito larva which were not detected. Biologists also continue to monitor basins for invasive species and address new infestations as needed.
J15	Continue to develop and maintain database backed tools and applications (R,GIS,MS Access, SQL Server) to facilitate data management, review and analysis, writing reports and modeling efforts.	Continued support of WAVE/WIT applications. Small updates made to TribTools. WIT was updated for new QC samples collected since the start of CY 2023. QC and calibration summaries added to the Monthly WQ Report. Survey123 forms underwent slight revisions to fix minor issues and improve UE.
J16	Complete data compilation/interpretation for 30+ Year Water Quality Report (1988-2018) and publish. Include assessment of impacts of climate change on water quality and hydrology.	No progress. This effort has been postponed.
J17	Ongoing field/lab equipment/supply management (including maintenance and calibration)	New YSI part tracking system established. Projected replacement dates calculated for all parts. 5-year budget projections were calculated for better planning.
J18	Update and maintain water quality and hydrologic monitoring SOP documents	Updates underway to account for field duplicates/blanks added to WATTRB and WATMDC projects. WATTRB and WATMDC SOP updates finalized. YSI Pro Quatro Calibration SOP updates mostly finalized.
J19	Develop Quality Assurance Project Plan (QAPP) for Water Quality and Hydrologic Monitoring Programs	QAPP completed, fully reviewed and finalized. Shared with DWSP, MWRA and DEP.
J20	Continue to work with MWRA, Quabbin EQ, NEIWPCC and other stakeholders to characterize cyanobacteria and cyanotoxins in the reservoir.	Routine plankton monitoring continues to include screening for cyanobacteria and collection of cyanotoxin data related to UCMR4 requirements, in collaboration with MWRA. Biologists also responded to surface aggregations of the cyanobacteria Dolichospermum in mid-June. This is the fourth year out of five that aggregations have been observed and biologists are implementing standardized tracking mechanisms as part of the cyanobacteria response plan (see J21).
J21	Initiate development of a plan for HAB response in the watersheds.	A draft cyanobacteria response plan has passed through internal EQ review. The actions contained in this draft will be trialed through calendar year 2023 with the intention of revising and finalizing the plan by the end of FY24.
J22	Conduct benthic macroinvertebrate sampling, continue identification and assessment of historic samples.	Identification of preserved samples continues as time and resources allow. Priority has been given to samples from the Quinapoxet River ahead of planned dam removal. A new habitat assessment form created in Survey123 will allow data to be captured during drought or other significant events that may impact habitat in these tributaries.
J23	Continue cooperative study of current population status, life history, and sustainable yield of lake trout.	The Lake Trout mark recapture program continued with 119 new fish tagged and released, bringing the total number of Wachusett Lake Trout tagged to approximately 800. The Creel Survey was successfully completed during the 2022 fishing season and data is currently under review. Results of these studies will continue to inform potential food web impacts of apex predators on plankton as well as provide information on watershed land use.
J24	Conduct basic fish monitoring in the reservoir and watershed in collaboration with MA DFW. Assess goals and explore optimal sample methods with MA DFW.	DCR and MassWildlife continued cooperating on ongoing projects including the Lake Trout mark-recapture program, restoration of Malden Brook/Edwards Pond, and the Creel Survey.
J25	Conduct creel survey during the 2022 fishing season (April – November) and begin Creel Report.	DCR aquatic biologists devised and coordinated the 2022 angler creel survey. 2,031 anglers were surveyed by DCR and MassWildlife staff. Lake Trout was the species most often reported as caught, which aligns with results collected in 2011, 2012, and 2017. Analysis of survey results will continue through FY24.
J26	Develop a study to identify trends in the long-term phytoplankton and water quality data sets and identify variables influencing these dynamics.	DCR aquatic biologists coordinated with MWRA to update and modernize the phytoplankton monitoring and response plan. Routine monitoring of phytoplankton communities and densities remains a priority; however, the new plan incorporates various monitoring tools (e.g. remote sensing buoys) and historical data to more efficiently respond to potential phytoplankton-related water quality issues while providing opportunities for investigative sampling to inform emerging water quality issues such as cyanobacteria blooms.

Task No.	Description	Final Report Comments
J27	Determine needs for stormwater sampling based on analysis of historical data. Sample storm events as determined necessary.	This work is on hold until staff time is available
J28	Investigate the use of eDNA for water quality applications including bacteria source tracking and invasive species.	Invasive species detection with eDNA is under consideration as part of the new divisional AIS plan.
	<b>K. Watershed Monitoring and Assessment</b>	
K1	Continue to review local records and conduct watershed surveillance to identify potential issues in the Wachusett and Sudbury watersheds that could impact water quality. Work with local boards and land owners when problems are identified. Document all work in EQ database.	10 EQ files created; 4 Active files, 4 Resolved files, and 2 Watch files. EQ staff investigated the following: (no water quality issues or has been resolved.) Submitted NOI and Restoration Plan (approved) for hazardous tree removal within the Riverfront Area along Wachusett Dam Lower Rd in Clinton: Restoration work completed. NOI hearing closed and Clinton ConCom drafting OOC. Car fire on the I-190 N off-ramp, Gate 35 forest fire, High flow at French Brook after significant rain event, Cleared lot on Campground Road - contact Sterling TH to determine status, Car accident at the I-190 N on-ramp, New section of pavement on DCR property (Rt 12), Thomas Street manhole overflow: possible SSO with impacts to road and unmitigated flow into Quinapoxet Basin. EQ staff & Watershed Maintenance crews responded - deployed sandbags and lime as control/mitigation measures. Samples were collected for bacteria and chemistry. Overflow was determined to not be sewerage. EQ staff worked with Watershed Maintenance staff to remove a large tree from Trout Brook. EQ staff met with manager of Surfside Pool company re the storage of pool chemicals outside (this needs to be monitored). MADOT upgraded the drainage structure in front of 264 Lancaster Street (RT 110) - Installed riprap and a paved waterway/berm near the catch basin. RT 140 Sterling - Sterling DPW removed accumulated sediment and vegetation from the gutter line along a section of Rt 140; erosion controls in place - no WQ issues. Water main leak on RT 70 in Boylston causing erosion - water running down Diamond Hill Road - No WQ issues observed. Elevated bacteria levels were detected at Gates Brook 4. The source is still unknown. Samples have been taken that pinpoint the source to upstream of Chapman Ave - further investigation is needed to isolate/determine potential sources. Surplus fire trucks stored on WBDPW property adjacent to West Boylston Brook have been removed by the WBFD. The following was passed along to WsPA staff and found to be no issue: Road work on Rt 12 at Greenland Road Sterling.
K2	Provide technical assistance to state and municipal boards and commissions.	Researched assigned sections of Southboro and Wachusett watersheds. Reviewed agendas and minutes for watershed Conservation Commissions. Relevant issues referred to appropriate staff for review/resolution. Few issues required attention.
K3	Review files in EQ database and resolve any inconsistencies with paper records. Maintain records of all water quality related issues and EQ actions taken in EQ database. Make improvements to structure and data as needed	The decision was made to overhaul the EQ database and move it to an AGOL platform. This was completed in January 2023. The same process was completed for Agriculture projects and CGP monitoring. A new OneVision dashboard was produced by GIS and EQ staff that visually displays all EQ apps (WsPA, EQ, Ag, CGP) plus the sewer/septic datalayer all in one place and on one map. This modernizes EQ databases. Future work includes finalizing data management SOPs and summary reporting tools.
K4	Manage the Wachusett Watershed Hydrology Mapping Project. Project proceeds within selected subwatersheds and subbasins.	Field work was continued in April. Desktop editing in ArcGIS Pro began during April as well. Subbasins in the Quinapoxet Reservoir were targeted. Resolution of problem areas highlighted. Participation in the EEOA internship was finalized. Two interns selected. Training conducted. Reservoir and Gates Brook subwatersheds targeted. Field work with interns on limited basis.
K5	Complete Gates Brook District EQA and use recommendations to develop tasks for FY24 Work Plan.	Gates Brook EQA complete. Recommendations were identified and will be used to develop tasks for upcoming Work Plans.
K6	Monitor hazardous materials spills and releases until considered complete for Wachusett and Sudbury watersheds. Compile and update hazardous materials sites, USTs and ASTs. Follow up with DEP as needed.	Ten new releases in Sudbury Watershed. Five new releases in Wachusett Watershed. All are being monitored.
K7	Inspect all agricultural operations in Gates Brook District and continue to compile an inventory of agricultural sites in Wachusett/Sudbury using iPad app	Agriculture app and dashboard have been updated. 5 new agricultural sites have been added to the agricultural app. Staff started to monitor agricultural sites in Waushacum District.
K8	Develop and implement outreach strategies and programs for topics identified through EQAs	EAllI position was filled in February and began work on Gates EQA. Gates EQA finalized in 4th quarter. Updated and sent out Pyrethroid letter to companies providing mosquito and tick control/ treatment in Watershed communities.
K9	Monitor placement and additions of turf fields in both watersheds and remain up to date on all research and studies of PFA concentrations resulting from turf fields	Research has been conducted for updates on turf field PFAS as a project is being proposed in the watershed utilizing artificial turf. Request for information to DEP; awaiting a response from their research lab.
K10	Continue to communicate with MassDOT on roadway projects. Emphasize need for contractor to maintain safe conditions at all times. Investigate possibility of requiring contractor to have absorbent materials at work area for the duration of the project.	No MassDOT projects within the watershed this FY23.
	<b>L. Aquatic Invasive Species</b>	
L1	Prioritize and conduct surveys of watershed/local waterways to inspect reservoirs, lakes, ponds, and tributaries for presence of aquatic invasive species.	An outline for the Divisional AIS Plan has been been completed. Research and planning for plan components will take place this summer and winter with the intention of finalizing the plan at the end of FY24.

Task No.	Description	Final Report Comments
L2	Conduct surveys, gather information, and make recommendations for management actions on an individual basis if/when new infestations are found in accordance with the Wachusett AIS management plan.	DCR aquatic biologists and rangers responded to the illegal introduction of Tilapia in several reservoir locations in July 2022. Multiple fish were removed through DCR/MassWildlife cooperative efforts but at least 20 fish remained. Surveys in 2023 have not resulted in any Tilapia observations and it is likely these fish did not survive the winter. Monitoring for these fish and any new introductions is ongoing. DCR biologists also advised MWRA on a response to Asian Clams newly detected in Sudbury Reservoir.
L3	Administer AIS control contracts as appropriate and conduct aquatic vegetation surveys in conjunction with management of the Lily Ponds, South Meadow Pond complex, and Clamshell Pond.	Management and monitoring for AIS in the water bodies close to the Reservoir is ongoing. Surveys of Clamshell Pond indicate that Brizilian elodea has not returned since treatment in 2018 and water chestnut distribution remains very low with annual DCR hand-pulling efforts. The Lily Ponds have received fluridone treatment to successfully target brittle naiad the past two years. Reevaluation of management strategy at South Meadow Pond based on intensive survey efforts by contractors in summer 2022 resulted in budget adjustments and a new fluridone treatment scheme that includes a strict fluridone treatment schedule starting earlier in the season to target residual growth of Hydrilla.
L4	Continue to use appropriate methods to prevent the spread of Phragmites along the reservoir shoreline.	Aquatic biologists, NR, and watershed maintenance staff continue to collaborate on physical management of phragmites along the reservoir shoreline. No new patches were identified along the reservoir shoreline and 2022 was the second year that only one cutting event was necessary. Observations of plants in 2023 indicate that hand-pulling may be the primary mode of removal for the year due to the significant reduction in above-ground biomass at most locations.
L5	Perform aquatic vegetation surveys prior to reservoir AIS management projects. Provide results to MWRA and contractors to guide plant removal efforts.	The partnership between MWRA and DCR on AIS removal in Wachusett Reservoir continued in FY23. Biologists continued support of removal efforts by maintaining ArcGIS Online tools for data collection from contractors and sharing with project partners. Biologists also inspected watercraft prior to equipment launch and assisted in allocating diver effort.
L6	Monitor, advise, and assist contractors with plant removal operations as necessary, including boat decontamination inspections and data management through ArcGIS Online apps.	Continued use of ArcGIS Online tools for data collection from contractors and sharing with project partners. Biologists inspected watercraft prior to equipment launch and assisted in allocating diver effort.
L7	Enforce the decontamination procedures for all watercraft entering the reservoir by inspecting each vessel and collecting completed decontamination certification forms.	All watercraft were inspected prior to launch in the reservoir.
L8	Continue to educate ranger and interpretive staff on AIS and other water quality topics for incorporation into routine education program.	DCR aquatic biologists continue to communicate new AIS risks to ranger and interpretive staff as they arise. Both groups were included in communication regarding the illegal Tilapia release.
L9	Monitor beaver activity; if necessary make recommendations to NR for removal where contributing to spread of invasive plants or causing water quality impacts due to flooding abutting property.	No new observations of beaver activity were made.
L10	Update DWSP AIS web pages	Updates are forthcoming and will be ongoing in conjunction with development of the divisional AIS plan.
	<b>M. Wastewater Management</b>	
M1	Provide plan review and interpretation, if requested, to Boards of Health.	No requests to review plan from BOH or applicants on FY23.
M2	Compile septic system information (installation date, repair date, location, etc) from watershed communities in wastewater database. Include linked electronic plans where available.	Updated a total of 190 septic repairs and Title V inspections on wastewater database for town of Holden, Boylston, West Boylston and Sterling.
M3	Obtain sewer connection information from Holden and West Boylston; add to Wastewater database and GIS datalayer	Recorded 42 new sewer connections from Holden, awaiting to record another 28 new connections as they are new parcels-MASSGIS Parcel layers still hasn't shown those parcels on the map. Still awaiting sewer connection data from West Boylston DPW.
M4	Continue to provide management support, with the MWRA, of the Rutland-Holden trunk sewer and Rutland Holden Relief trunk sewer. Coordinate inspections and maintenance projects for the sewer lines. Prepare and submit quarterly bills to the user communities in a timely manner.	The agency is evaluating the payment and legal issues related to the sewer systems.
M5	Research and provide sewer management information for legal issues regarding the Trunk and Relief sewer lines, as necessary. Work with legal and MWRA to research the option of transferring ownership of sewer lines to MWRA or the communities (would require legislative action).	Significantly more work remains. There is still no sewer use agreement in place. Transfer of ownership would most likely be the best option.
M6	Evaluate and manage new trunk line connections. Monitor trunk line for encroachments; resolve any problems.	Nothing significant of note.
M7	Address I/I issues within trunk and relief sewers per DEP requirements (this is dependent upon DEP acceptance of our I/I submittal).	Info will be submitted to DEP for review and comment. All information has been compiled.
	<b>N. Stormwater Management</b>	

Task No.	Description	Final Report Comments
N1	Treat direct discharges at Rt 110 Sterling	DOT will continue to fund the project. Tighe and Bond has submitted the 75% design for review. DCR is collecting pond elevation data for Tighe & Bond modelling of the pond's hydrology. Project construction is anticipated to occur in FY25.
N2	Continue to work with towns and private landowners for regular maintenance of BMPs to ensure proper performance, inspect BMPs on a 5 year rotating basis and recommend maintenance or repairs as needed.	Field work was continued in April. Desktop editing in ArcGIS Pro began during April as well. Subbasins in the Quinapoxet Reservoir were targeted. Resolution of problem areas highlighted. Participation in the EEOA internship was finalized. Two interns selected. Training conducted. Reservoir and Gates Brook subwatersheds targeted. Field work with interns on limited basis.
N3	Work with watershed towns to ensure compliance with MS4 requirements. Provide details of DWSP activities that indirectly support town MS4 requirements (education, sampling, inspections) and provide technical assistance or training of requested.	Letters and information shared with towns in advance of the MS4 submittal deadline in the 4th quarter. DCR Salt Sleuths table at Sterling DPW open house
N4	Create geometric network in ArcGIS to route stormwater flows through drainage network.	No activity this FY
N5	Modify subbasin lines in ArcGIS based on results of Wachusett Watershed Hydrology Mapping Project.	Field work was continued in April. Desktop editing in ArcGIS Pro began during April as well. Subbasins in the Quinapoxet Reservoir were targeted. Resolution of problem areas highlighted. Participation in the EEOA internship was finalized. Two interns selected. Training conducted. Reservoir and Gates Brook subwatersheds targeted. Field work with interns on limited basis.
N6	Conduct regular inspections of all construction sites greater than one acre.	Added a total of 5 new CGP projects to CGP database this year. Monitored a total of 15 CGP projects through the year. Added 295 inspection points to the database. A total of 5 projects marked as complete this year.
N7	Continue work with local DPWs to identify locations of concern, evaluate options for BMP installation, and ways to cooperatively implement recommendations.	Met with WB DPW Director on Temple Street for unmaintained drainage swales on Division property causing back up and flooding on Route 140/Temple Street and private residence. Division property was staked and DPW cleaned swales. Initial discussions with WB DPW Director for implementation of BMPs along road gutter of Prescott Street, met with WB DPR Director to discuss partnering on a solution of current discharge to Quinapoxet Basin from roadway and met with Sterling DPW Director to discuss Merrill Road stormwater drainage improvements.
N8	Conduct culvert assessments for culverts identified in Gates Brook District and add information into NAACC database	No culvert assessments were conducted. Information from database used to provide letter of support for Town of West Boylston DER culvert Replacement Grant application
	<b>O. Emergency Response</b>	
O1	Provide and coordinate ICS, emergency response and safety trainings to appropriate staff. Work with other agencies to provide trainings and exercises	There were 10 trainings amounting to 52 hours with 120 attendees.
O2	Update information in the Comprehensive Emergency Management Plan, Training & Exercise Plan, EAPs, and other emergency response plans.	Exercise After Action Report were completed. Emergency management and response plans have been updated.
O3	Organize and maintain emergency response supplies and services.	New Regional Response trailer was received from MWRA. Fire equipment was procured to outfit a Fire Response Trailer.
O5	Provide and coordinate ICS, emergency response and safety trainings to appropriate staff. Work with other agencies to provide trainings and exercises	Unionville Pond Dam safety tabletop exercise was conducted with the SWREPC. IS-700 and Is-100 classes were conducted for Wachusett staff.
O6	Evaluate, monitor and oversee spill clean-ups that impact or threaten water resources of DWSP property. Work with appropriate local, state and federal agencies to ensure that containment, cleanup, and mitigation of the spill are proceeding in a manner that protects drinking water quality	A sanitary sewer overflow occurred when WBWD was backwashing from there treatment plant on Thomas Street. DCR responded by utilizing sandbags to contain the overflow and spreading lime.
	<b>P. Support</b>	
P1	Prepare and submit to MWRA and the Water Supply Protection Trust Annual Work Plans, budgets, progress reports, and program goals and objectives. Track Section progress in meeting program goals.	Work plan, budget, progress reports prepared and submitted as required. Ongoing program reviews tp ensure the section is meeting goals and the mission.
P2	Administer the Payment in Lieu of Taxes (PILOT) program.	Total FY23 PILOT was \$8,479,324.48. This is the first time since legislation passed that there was no increase in PILOT. The total "Hold Harmless" amount (the amount calculated vs the amount paid because payment can never be less than previous year) was \$2,305,499. Total amount paid to Wachusett towns was \$3,564,910, or 42% of total. The amount paid to Sudbury towns was \$855,461, or 10% of total PILOT. DCR staff worked with Dept. of Revenue, Division of Local Services technical staff to set up portals on the DLS Gateway that provide all PILOT details, making this information accessible and transparent for local officials and the public.



Task No.	Description	Final Report Comments
P3	Configure and maintain both internal and externally facing ArcGIS Online applications. Work with staff to generate field data collection tools using Survey123 and/or Field Maps for ArcGIS. Maintain existing field data collection tools for staff; maintenance includes archiving of data (as needed) and ensuring that Surveys and Maps remain functional through upgrades to ArcGIS Online and mobile apps.	New WsPA database completed. New EQ database deployed to Wachusett EQ staff; Quabbin/Ware EQ staff will begin to use this new database at the beginning of next FY (July 1). Migrated additional EQ workflows into AGOL - Ag Site Monitoring, Sewer/Septic Parcel Tracking, and Construction General Permitting. CGP is still in process, but will be finished during next quarter. The existing Wachusett CGP workflow will be deprecated and deleted in favor of the new workflow being developed. All historic Wachusett CGP data previously collected will be migrated over. Additional work remains to create additional tools for reporting on EQ database and other migrated data. Ideally, these solutions can/will also be used by Quabbin/Ware EQ staff as needed. Working on data and app development for new "Sportsman" map. Phase 1 will be hunting focused, and phase 2 will add in fishing opportunities. Working with staff from both regions on mapping locations of fishing opportunities in our watersheds. A new Pool Vehicle Reservation System was developed using Survey123, Power Automate and SharePoint; the system prevents conflicting reservations and reservations longer than 5 consecutive days. New CGP database and management tools completed and in-use by EQ staff. Worked with EQ staff on development of "One Vision" a new Dashboard that brings all newly developed databases together into one place. This allows EQ staff to visualize WsPA, EQ, CGP, Ag and Sewer/Septic databases on one map. A series of filters and an address search allow staff to easily see what is going on at or around any parcel; links at the bottom of the One Vision dashboard allow staff to easily access any of the other management hubs. Phase 1 of the new Hunting Map development is completed; this name was changed from Sportsman Map as that seemed too gender-specific. This new map will release on July 1. Phase 2 development of a Fishing Map will start up in this fall. A slight modification was made to the Pool Vehicle Reservation system to allow Jussara to easily update existing reservations.
P4	Publish hosted feature layers, tile layers and tile packages on an as-needed basis to support projects. Ensure that all public-facing data has proper metadata added as per the EEA ArcGIS Online Best Practices.	Minor revision made to layer of WsPA Affected Parcels after WsPAWG meeting; removed some parcels which are no longer affected and clipped WsPA buffers to new watershed boundaries. All layers relating to the new Hunting Map were added into the Data Inventory and shared with staff via the Data Store group in ArcGIS Online. These layers were also updated a number of times. The new 2023 WsPA Affected Parcel and Potentially Affected Parcel layers were created, published to AGOL and added to the WsPA public viewer. The MDC Manhole layer was updated in AGOL.
P5	Provide staff with training in desktop, mobile and online GIS applications.	A series of 4 ArcGIS Pro trainings were offered to staff each week in June. Trainings were recorded and training documents are available to staff via the DWSP-GIS Team. A new workflow document that reviews ways Arcade can be used to customize maps and apps in ArcGIS Online was created and added to the DWSP-GIS Team as a new resource for staff. Training materials developed for WsPA database management workflow and preliminary materials developed for new EQ database management workflow.
P6	Train staff in GIS on an as-needed basis to provide knowledge needed to complete basic GIS-related tasks.	4 ArcGIS Pro training sessions were offered once per week in June. Editing completed in ArcGIS Pro training document. 2 replacement iPads ordered, received, set up and distributed to staff. iPad transfers made as-needed with staffing changes.
P7	Assist staff with GIS-related projects by providing maps, data analysis, data exports and data collection.	GIS provided Land Cover/Land Use calculations (and maps) for Watershed Protection Plan. GIS-W completed all other maps for Wachusett/Sudbury for plan. GIS-W assisting with EQAs as needed. Provided EQ & NR with assistance determine the percent impervious and percent paved by subbasin for the Quabbin, Ware and Wachusett watersheds. GIS-W Provided the Rangers with new Sudbury and Foss Fishing Maps. Created Manhole, Trunk, and Relief Sewer Line datalayers/attribute tables with Civil Engineering staff for CERO DEP. Worked with CE on updated emergency response maps that contained bathymetry data.
P8	Maintain and update GIS data hosted in ArcGIS Online for divisional staff use; ensure all data is current and available to staff via that 'DWSP - Data Store' group, and has updated FGDC-compliant metadata. Ensure newly publish data are added as a new record to the DWSP Data Inventory spreadsheet, which is shared with users via MS Teams. Ensure that a layer file is created for ArcGIS Pro and added to the appropriate location in the DWSP-GIS Team.	Maintenance to Data Inventory & Online data available to staff completed as necessary. AGOL governance completed to ensure public-facing content properly attributed.
P10	Create parcel maps for Land Acquisition Coordinator meetings with landowners and MWRA board. Create and maintain one Story Map per Land Acquisition Panel meeting, with one section per potential property.	Completed LAP story maps for the Miksenas, Harper, Wachter, IMS, Carey, Mercurio, Beals, Chivian, Sherwood, Dale, Porter, Mecum, Natty Brook Estates, Power and Salloom and County Surplus properties.
P11	Complete GIS-related special projects	Completed boundary updates and corrections for DWSP fee-owned properties in the Town of Boylston, Continued boundary updates and corrections for DWSP fee-owned properties. Provided Sterling Land Trust with a map for their land acquisition efforts, updated all Wachusett WsPA town maps, modifications made to WPP and Wachusett Public Access Plan maps. Provided the Town of West Boylston with Sewer Hookup status information and the Sterling Land Trust with mapping assistance.

Task No.	Description	Final Report Comments
P12	Operate administrative offices including answering phones, greeting visitors, scheduling interviews, receiving orders for office supplies, updating emergency contacts and other documents as needed. Managing the BHP unit 2 & 3 weekly schedules.	Continued providing general administrative duties for the department. Answered phone calls and checked voice messages daily. Provided reception for visitors and others using the building for meetings/trainings. Processed daily mail including letters/parcels metered and delivered to the post office. Picking up, sorting and distributing daily incoming mail to staff/department. Continued to assist staff members with requests for room reservations at JAH and also vehicle reservations. Updated information on the portal for new hires, former employees, vehicle information, forms, etc.. Received and recorded monthly mileage reports.
P13	Provide payroll assistance and personnel services for all Section employees.	Continued providing payroll assistance and personnel services for all section employees. Performed onboarding/offboarding tasks and worked to resolve several issues with staff paychecks.
P14	Provide contract administration, financial management, record-keeping, purchasing of goods and services, and other financial support services.	228 encumbrances were submitted; 823 invoices were paid for Wachusett. 28 encumbrances and 38 invoices were paid for Natural Resources section. Notable purchases/services include multi-year contracts for Aquatic Vegetation Assessment & Treatment Services at SMP and as-needed Herbicide Application Services at Lily Ponds, purchase of Commercial Grade Battery Electric Lawn Equipment using Academy Raffle Funds, large office furniture order with Staples, and an increase with Tighe & Bond to provide additional Hydraulic Modelling. Utilizing Land Stewardship slippage, Fire Equipment & Supplies, soil aggregate materials and additional survey work encumbrances were done.
P15	Coordinate with EEA IT to provide local MIS support for the Section. Update IT Plan as required addressing technology needs for the coming year.	Worked with IT to migrate and move Sharepoint folders and files to correct location and update access permissions lists for each. Continued communications for the addition and changes to Verizon data plan for Mayfly stations. Completed the addition of TV and camera in Cafeteria meeting room for remote meetings. Assisted staff as needed with IT for small technology issues, use of office space without Wi-Fi or network access. Building wide Wi-Fi has been installed but not yet active. Additional access points being added to main panel. Updated cabling for direct network connection scheduled during the summer. Submitted request to update laptops in 2 meeting rooms.
P16	Training to Administer Logging Permit program, including mailings, bid openings, financial management, database management, permit and key issuance, etc.	Collaborated with Forestry reviewing the Timber Sales database for lot information such as harvest expiration dates, completion dates, financials, etc. Prepared correspondence for the RD to review and sign. Updated physical and electronic files.
P17	Plan and implement vehicle and equipment purchases and leases.	Due to supply chain issues and OVM's right-sizing exercise, we were unable to purchase new vehicles in FY23. Moved KK passenger vehicle money to KK heavy equipment money. Purchased a new mini-excavator, stainless-steel sander, poly brine spreader, single-drum roller and two new mower decks for our farm tractors.
P18	Inspect, provide regular maintenance, and repair vehicles, boats and other motorized equipment, utilizing Fleet Wave system. Maintain up-to-date records of all vehicles and equipment in Fleet Wave system.	Garage Staff completed 171 work requests in FY23
P19	Complete watershed-wide vulnerability assessment to identify potential impacts of climate change on the water supply	Staff involved with NetZero committee- attending meetings and site walks. Assessment has not been completed but climate change has been taken into account for all watershed projects. Awaiting state-wide guidance to proceed with this task.
P20	Develop the new 5 year Watershed Protection Plan	The Watershed Protection Plan is an integral component to the DCR/MWRA filtration waiver. It must be updated every five years. DCR initiated the process for the latest update in FY22, however the bulk of the work to prepare the plan took place in FY23. DWSP staff pulled together a tremendous amount of information to provide a comprehensive approach to watershed management over the next five years. Drafting of sections took place through the first half of FY23. A completed draft was sent to MWRA in April and a subsequent final draft was sent to MassDEP for review in May. MassDEP subsequently provided feedback for a final Plan. They concluded that, "The update provides DCR staff, the public and others with a very useful history and current status of reservoir operations and watershed programs and is very reader friendly. The five-year action plan is impressive and the incorporation of climate change information throughout the watershed programs is excellent." The final FY24-FY28 Watershed Protection Plan was submitted to MassDEP at the end of June 2023. The five-year implementation plan is the base of the FY24 Work Plan which was approved by the Water Supply Protection Trust at their June 7, 2023 meeting.

# Quabbin/Ware FY23 Final Report



Update on all tasks in Quabbin/Ware Work Plan for July 1, 2022 to June 30, 2023.

Task #	Task Description	Final Yearly Summary
<b>A. Land Acquisition</b>		
1	Acquire land. Coordinate due diligence and other tasks/services from DCR and private contractors to complete survey, appraisal, title, engineering, and environmental assessments for proposed acquisitions. Negotiate WPR language, purchase prices, and conditions of sale with sellers of property.	Five projects went to record this fiscal year, four in Quabbin and one in Ware. These projects included a 32-acre fee gift in Hardwick (Zglobicki), a 29.4 acre fee project in Wendell (Simon), a 32.8-acre WPR gift in Petersham (Petrie), a 72-acre fee bargain sale in Rutland (Nelson Calkins Trust), and a 67-acre fee project in Petersham and Barre (Keller). Seventeen projects are currently underway at various stages of due diligence including nine projects in the Quabbin totaling 567 acres and six projects in the Ware River totaling 160 acres.
2	Develop individual parcel presentation materials and meet with MWRA Board for approval.	MWRA approved eight Quabbin projects: a 29.1-acre fee acquisition in Wendell (July 20), a 128-acre fee acquisition in Petersham (September 14), a 101-acre WPR acquisition in Wendell (November 16) a 1.5-acre fee acquisition in New Salem (December 14), a 30-acre WPR in Wendell and New Salem (December 14), and a 35.5-acre WPR in Wendell (December 14) and a 168-acre WPR acquisition in Barre (April 12). MWRA approved two Ware River projects: a 70-acre fee acquisition in Rutland (July 20) and a 70-acre fee acquisition in Hubbardston (September 14).
3	Communicate with and convene LAP meetings to review parcels and prioritize land purchases.	Three virtual LAP meetings (7/26/22, 10/24/22, and 6/13/22) and one email LAP vote (8/30/22) were held this year. A total of five Quabbin projects (three fee and two WPR) and four Ware River projects (three fee and one WPR) were approved.
4	Use the LAP Prioritization Model to identify priority parcels in the watersheds.	Work to identify priority parcels is ongoing.
5	Continue to solicit and work with landowners in donating conservation interests in land and assist in advising landowners on the tax incentives available when donating conservation interests.	Two Quabbin donation projects and one bargain sale went to record: a 32-acre fee gift in Hardwick (Zglobicki), a 32.8-acre WPR gift in Petersham (Petrie), and a 70-acre bargain sale in Petersham and Barre. One Ware River bargain sale went to record: a 72-acre fee bargain sale in Rutland (Nelson Calkins Trust). Work continues on the seven proposed donations or bargain sales, two in Quabbin and five in Ware River.
6	Meet regularly with DCR Legal to address attorney assignments and project logistics.	Meetings with legal are ongoing.
<b>B. Watershed Preservation Restrictions</b>		
1	Monitor WPRs on a regular basis, following monitoring procedures, to meet schedule of monitoring WPRs every 1-3 years.	WPR Coordinator and Regional Monitors completed 49 WPR monitoring visits this FY. WPR Coordinator assisted Regional Monitors with training, monitoring visits, and report writing as needed. WPR Coordinator reviewed all monitoring reports completed by Regional Monitors.
2	Complete baseline documentation reports for new WPRs prior to acquisition or within a reasonable time after acquisition, following EOEEA specifications. Baselines will be done in-house or through appropriate contracts.	2 in-house baseline reports completed this FY.
3	Meet with Restriction Stewardship Working Group and confer with legal to respond to enforcement issues and requests to exercise reserved rights.	Restriction Stewardship Working Group met quarterly in FY23. WPR Coordinator continued working with DCR-Parks stewardship staff on updating the Enforcement Procedure.
4	Track changes in landownership for WPRs.	WPR Coordinator and Regional Monitors continued to track changes in landownership for WPRs.
5	Implement WPR records procedure with DCR records manager.	WPR Coordinator spent 1-2 days/week at the Boston office culling DWSP land files as part of the File Digitization Project (Jan-May). WPR Coordinator worked on updating the WPR information in the LIS database.
6	Explore additional ways to reach out to landowners through the use of social media and web-based content.	The WPR Coordinator and Jim Taylor created a new WPR landowner E-news, A Watershed Moment, which includes a "Notes from the Field" StoryMap. Two issues of the E-News were sent to WPR landowners in FY23.
<b>C. Land Management</b>		
1	Implement the 2017 system-wide comprehensive Land Management Plan.	All elements of the Land Management Plan were followed this FY.
2	Begin the 5-year review of the Comprehensive Land Management Plan	Work began early in the FY on a draft document, but halted with the incoming administration and the resulting moratorium on new harvesting. Work on this review currently on hold pending further directives from EEA.

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3	Prepare forest harvest proposals for next fiscal year including data on proposed harvest areas, characteristics of stands, soils, cultural resources, wetlands, wildlife, unique features, and priority habitats. Proposals shall also include information on lot layout, landings, stream crossings, wetland crossings, and stonewall crossings..	Completed 15 (13 Quabbin; 2 Ware River) FY 24 lot proposals.
4	Plan and conduct an internal review of proposed logging operations for the coming year, including assessments of silviculture, water quality, wildlife, and other potential impacts/benefits Review lots to ensure consistency with aspects of the CLMP, including wildlife, forestry objectives, and environmental quality.	All lot proposal narratives and maps were finalized and distributed to foresters and reviewers. All internal reviews were completed. All proposals were toured and some were revisited when CR office staff came out to see specific lots at their request. Final internal review document pending potential updates resulting from the EEA Forestry Guidelines review committee.
5	Present annual forest harvest proposals at public meetings. Publish Online Public Review document/story map. Accept public comment and respond as needed.	Proposal were ready, but not presented to the public pending completion of Forests as Climate Solutions process.
6	Plan, lay out, mark products for removal, prepare maps and permits, establish photo monitoring points, file Forest Cutting Plans, seek bids, award permits, and properly advertise and post forest management operations consistent with the Forest Cutting Practices regulations, the LMP, and approved harvest proposals.	Several lots laid out and ready for bid, but only two lots sold this FY due to the Administrative pause on forest management.
7	Provide supervision and oversight of all forest harvesting operations on DWSP property from sale until final service forester sign-off and bond return. Assure compliance with applicable DCR and NHESP regulations and restrictions, approved BMPs, and all Permit conditions. Maintain adequate site visit records. Monitor post-harvest and collect photo point images consistent with internal policy.	Provided oversight and supervision on 11 forest harvesting operations from sale until final service forester sign-off. Assured compliance with applicable DCR and NHESP regulations and restrictions, approved BMPs, and all Permit conditions. Maintained site visit records. Monitored post-harvest and collected photo point images consistent with internal policy. .
8	Monitor BMP effectiveness at active or completed stream crossings utilizing customized assessment protocol.	Resumed monitoring using this protocol with one new instance at Wachusett. Adjustments to protocol are required to improve efficiency and effectiveness of the field work and reporting. We plan to address these adjustments and resume monitoring next FY.
9	Continue to implement long-term paired watershed monitoring to assess impact of DWSP forest management on tributary water quality.	A draft calibration period report summarizing initial results of the paired-watershed study was shared internally and underwent internal review. DCR staff have developed analytical tools and an analytical framework for the long-term study based on a thorough review of the literature. EQ met all sampling targets during this FY and continued to coordinate closely with other DCR sections and MWRA staff on the sampling. Progress on reporting was slowed by several key staff vacancies through the 2nd half of FY23.
10	Conduct periodical regeneration and invasive species surveys to monitor forest health and development resulting from silvicultural activities or other natural disturbances and processes.	Over 500 regeneration survey plots completed.
11	Conduct periodic reviews and monitoring of land management activities to assure compliance and consistency with land management plans.	Ongoing data prep/cleaning and analysis of CFI data. Data shared with EEA collaborators from HF and UMass as part of ongoing statewide carbon modeling effort.
12	Collect data and maintain GIS datalayers related to forest structure, composition, regeneration, roads, boundary information, stone walls, wetlands, streams, and other data to guide the land management program. Maintain GIS data documenting the location, extent, and intensity of all silvicultural operations.	Collected data and maintained GIS datalayers related to forest structure, composition, regeneration, roads, boundaries, stone walls, wetlands, streams, and other data to guide the land management program. Maintained GIS data documenting the location, extent, and intensity of all silvicultural operations.
13	Complete assessments on all new land acquisitions, including descriptions of fire/access roads, bridges, restoration needs, and forest conditions. Integrate these lands into land management, public access, and other watershed management programs.	Assessments completed for two new acquisitions this fiscal year.
14	Locate, mark, and maintain property boundaries periodically or as needed.	Located, marked and maintained 10 miles of property boundary.
15	Develop scope of work and manage contracted property boundary survey work.	Two surveys were completed this fiscal year to identify DCR boundaries and any encroachment issues.
16	Document and pursue resolution of all property boundary encroachments using the Encroachment Tracking Hub.	No work on encroachments this FY due to staffing changes.

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17	Identify, plan, and oversee non-forest or other unique habitat restoration, field reclamation, prescribed fire implementation and maintenance work.	<p>Completed draft burn plan for Gay's Hill Heath, and sent it to Fire Control for technical review. Acquired permits from MESA, and DEP for prescribed fire and activities related to fire on Gay's Hill Heath. Identified potential additional oak woodland restoration on the Prescott Peninsula. Started looking at Pottapaug Hill restoration work, specifically for the conservation of a state-listed plant.</p> <p>A new Statewide contract was developed and approved. The new contract replaces FAC103 and went into effect on April 1st. The new list was used to solicited vendors for invasive species contracts for two sites in the Ware River. Contract work using EEA Stewardship funding for Barre Heath and Riis Hill was completed in June of 2023.</p>
18	Maintain the non-silvicultural lands described in the land management plan (e.g., viewsheds, gravel pits).	Activity in Hardwick pit (hauling to stock pile). 202 viewshades have been completed for the season including off highway locations in N. Salem. Whitney pit was in operation screening material before restrictions/weather stop operations). Limited activity at Barre heath pit until fall due to restrictions.
19	Identify, prioritize, and implement terrestrial invasive plant (TIP) control projects in line with the expanded Terrestrial Invasive Plant Plan. Respond as needed to newly discovered and controllable TIP populations.	Conducted treatments of Japanese stiltgrass on Prescott and in Macedonia; Derek Beard cut ailanthus and treated stumps at a heavily infested site on Prescott. In June 2023 contractors conducted treatments at Barre Heath and Riis Hill. Invasive plan development resumed early in 2023, paused during lot proposal and review work, and continued to the end of the FY. Draft close to release for internal comment. LTS FA positions not filled, but a Forester II position was created and posted to serve as coordinator for forest resiliency. Once hired this person will oversee contracted invasive control work in line with all plans and will oversee the FSI seasonal crew as well.
20	Collect data and maintain datasets, GIS datalayers, and related maps and reports of rare and listed plants and communities.	Ginny worked with NHESP on monitoring and collection of purple milkweed seed pod for propagation.
21	If available, use a UAS (unmanned aerial system) to document forest conditions, map openings, identify invasive plant populations, internal road conditions, or other activities.	<p>UAS flights were continued to monitor the gull roost. The roost counts started on 10/3/2022 and were run weekly through 3/30/2023. The roost fluctuated from a low &lt;10 gulls to a high of 818 gulls on 1/26/2023. January also corresponded with the highest number of gulls in the watersheds based on regional gull surveys.</p> <p>No other flights were done because we have not received approval from EEA to expand the DWSP UAS Program. Additionally, no other individual projects were proposed to EEA for approval.</p>
22	Analyze CFI and other available data on forest structure, composition, and regeneration. Report findings for public presentation at meetings and in updated land management plans	Continued CFI data cleanup and analysis in preparation for 5-year LMP review, in collaboration with Rich Maclean and other forestry staff. Focused on regeneration and harvesting disturbance data. Shared a subset of cleaned data with researchers from HF and UMass as part of a study by EEA to model carbon trends in MA forests.
23	Update and Implement Quabbin Park Operation and Maintenance Plan	Caught up on the detail work in the park. Transition to clean up of side drains in the park. Quabbin park plan has been updated.
24	Implement Quabbin and Ware River Road Management Plan	Work ongoing with the road management plan for WR. Quabbin plan has been updated.
25	Work with DCR's Office of Climate Resiliency and DWSP Regional Planner to develop watershed assessments.	<p>DWSP's Natural Resource Section are working with DCR Office of Climate Resiliency (OCR) on various CC initiatives. We meet with OCR every 2 weeks to discuss Climate Adaptation strategies and develop planning and guidance documents.</p> <p>We are currently working on Adaption and Hazard Mitigation goals for all of DCR. DCR's #3 core principle is to Advance climate change mitigation and adaptation efforts by implementing sustainable practices and advancing resiliency across our infrastructure, assets, and resources. The drafting of these goals outline the climate adaptation efforts the agency needs to undertake to reduce our climate vulnerabilities and increase the resilience of the the assets under the Division's care.</p> <p>NR Staff recently submitted an application for SHMCAP funding for a Vulnerability Assessment of the Watershed's natural assets.</p>
<b>D. Wildlife Management</b>		

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1	Continue the active harassment of birds within the Bird Harassment Zone at Quabbin Reservoir, using human presence, boats, pyrotechnics, passive scare devices, and other techniques. Continue to identify and test new harassment techniques.	BHP operated twice a week, 10/3/22 through 3/30/23, primarily from shore. Daily operations were coordinated using drone roost survey results. After reaching a maximum gull count of 818 on 1/26/23, boat harassment was employed on 5 dates between 1/26 and 2/9/23, and both gull and bacteria counts decreased through Q3. Bacteria results remained below 20 MPN/100 mL at all times. Based on the low counts, active harassment ceased at the end of March. All weekly reports were submitted for the 26-week season. The BHP manager position was vacant following retirement in March and backfilled at the end of June. The annual report will be completed by August 2023.
2	Observe and document the nocturnal gull roost on Quabbin Reservoir.	UAS flights were conducted at Quabbin weekly from October 2022 to mid-April 2023. The UAS program has been very successful and a very useful tool for the Bird Harassment Program. The roost counts varied weekly with the highest count of 964 gulls on March 16, 2023.
3	Control Canada geese populations on Quabbin Reservoir (focus in the Bird Harassment Zone) by treating eggs during nesting season to prevent hatching.	The Canada goose control zone was surveyed for active nests; there was 1 nest located and 7 eggs were treated to prevent hatching.
4	Identify places in MA where human derived food is available and work to prevent feeding through educational signage, interaction and enforcement.	Regional gulls surveys began in the fall of 2023 and ended March 23, 2023.
5	Remove beaver and muskrat in the Aquatic Wildlife Pathogen Control Zone at Quabbin. Address beaver concerns outside the control zone.	Nine beaver were removed from the Aquatic Wildlife Pathogen Control Zone this fiscal year. Five beaver were removed from areas outside of the control zone.
6	Respond to problems of burrowing animals on dams and dikes; report problems and take appropriate action.	A few locations were checked after being reported by staff this fiscal year but no action was needed.
7	Research and manage for common loons on DWSP waterbodies; provide nesting platforms, capture and sample birds for contaminants.	Research and management for Common Loons on the DWSP waterbodies continued and the annual report for the 2022 season was completed. Collection of lead tackle from the Quabbin, Wachusett and Ware River watersheds totalled 2.44 pounds and monofilament line collection totalled 13.1 miles in 2022.
8	Continue long-term wildlife resource monitoring program.	Long-term wildlife resource monitoring that includes vegetation surveys, owl monitoring, breeding bird surveys, bat surveys and small mammal surveys were conducted on the habitat restoration areas located in the Quabbin and Ware River Watersheds. The annual Breeding Bird Surveys were completed at the Prescott and Petersham established routes in June. In addition bird surveys were completed at the habitat restoration areas on Quabbin and Ware River watersheds and grassland fields at Ware River. The Prescott beaver survey took place in November and the 2022 Prescott Beaver Survey Report was completed.
9	Work with DFW to survey and document breeding bald eagles around Quabbin Reservoir.	Five active nests were confirmed in 2022 and the 2023 survey season began.
10	Administer the applications, permits, and orientations for the annual Quabbin Controlled Deer Hunt; analyze results of hunt.	New Salem, Hardwick and Pelham were open to hunting for the 2-week shotgun season beginning on Monday, November 29th. This year we also hunted the Prescott Peninsula for a 2-day controlled hunt in December. Hardwick, New Salem and Pelham had 23-56 deer taken during the 2-week shotgun season. The Prescott Peninsula had 47 deer (34% female). Overall harvest in Wildlife Management Zone 6 (which is mostly DWSP Quabbin land) have been increasing over the last 10 years and the deer density is at levels that continue to allow for forest regeneration.
11	Coordinate with the Massachusetts Natural Heritage and Endangered Species Program concerning rare species occurrences and protection.	We continued our collaboration with NHESP to document rare species for their occurrences and protection through snake board surveys, acoustic bat recordings, breeding bird surveys, Whip-poor-will surveys, owl surveys, small mammal sampling as well as loon and eagle nest monitoring.
12	Finalize, get approval, and implement the deer management plan for Quabbin Park	Still pending Commissioner approval. Pellet Surveys were done in this section again in 2022 and this area is still well over the 20 deer /mi2 threshold.
<b>E. Public Access Management</b>		
1	Proactively patrol watershed lands to ensure compliance with DCR regulations and policies. Tally visitor contacts and produce quarterly and annual summary reports. Conduct trend analyses on data collected (e.g., rule violations, access permits, encounters).	Watershed Rangers proactively patrol watershed lands and waters to ensure compliance with DCR regulations and policies 7 days a week. Watershed Rangers tallied a total of 32,531 visitor contacts and 739 violations for FY23. Quabbin Rangers tallied a total of 24,293 visitor contacts and 221 violations. Ware river tallied a total of 8,238 visitor contacts and 518 violations.
2	Continue to cooperate with state, environmental, federal, and local police for help with enforcement when required.	Watershed Rangers continue to cooperate with state, environmental, federal, and local police for help with enforcement when required.



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3	Use Agency social media accounts for advertisement of interpretive programs, including general info or emergency info (e.g., closings).	IS staff has reviewed the website and provided corrections and updates. We have collaborated with Wachusett IS staff to promote events via agency social media.
4	Continue to implement Quabbin and Ware River Public Access Management Plans. Enforce rules and regulations of 313 CMR 11.09 through the use of citations. Issue written warnings and/or non-criminal citations for repeat offenders and serious violations. Complete semi-annual Compliance and Enforcement Reporting to MassDEP.	Watershed Rangers tallied a total of 32,531 visitor contacts and 739 violations for FY23. Quabbin Rangers tallied a total of 24,293 visitor contacts and 221 violations. Ware river tallied a total of 8,238 visitor contacts and 518 violations.
5	Regular meetings of the Signage Committee.	Quarterly meeting was conducted in June to review projects completed, underway, and planned. New information signs posted and gates repaired and repainted at Shaft 12 and Shaft 8 gates. Significant effort invested in replacing and updating signage throughout the complex for renaming of the Quabbin Visitor Center to the Les and Terry Campbell Quabbin Visitor Center. Completed Prison Camp – Historical site signage. (7 signs at different building sites); Long Pond sign replacement (Car accident)
6	Conduct night operations, as needed (e.g., night access permits, ATV use monitoring, illegal camping)	Night Operations were completed as needed throughout the summer months.
7	Operate the boat fishing program in designated portions of Quabbin Reservoir in a manner that minimizes threats to water quality and accommodates visitors with accessibility needs.	BLAs continued only allowing credit card transactions in 2023. Annual Quabbin Fishing Report was finalized in December 2022 and presented to QWAC during their monthly meeting. Over the past two years, IS Staff has successfully migrated the fishing guide to be a primarily on line resource. We still produce a one page map with an overview of the program and fees.
8	Oversee data management for Quabbin Boat Seal Program	The workflow for Quabbin Boat Seal Program records has been established in previous years. FY23 was a relatively smooth year of implementing the existing data management system. Considerable coordination among DCR-Quabbin sections (e.g. GIS, Admin, Management, Ranger, VC, EQ staff) has helped streamline data sharing and record keeping associated with private boat decontamination inspections and private boat access. QA/QC and end of year reporting was completed, and data inquiries fielded as needed. Coordination continues among sections to develop authoritative records applicable across sections.
9	Provide ongoing support and consultation to DCR's Division of Parks regarding Comet Pond beach. Maintain boat ramp launch at Long Pond and boat ramp launch and parking lot at Comet Pond.	The completion of the Long Pond boat ramp was the largest project during FY23. Completed by Office of Fishing and Boating.
10	Coordinate and/or support special programs and events, including Memorial Day services, public meetings, paraplegic hunts, and Tuesday Tea events.	Quabbin IS staff will continue to support special events with the Friends of Quabbin and other associated groups.
11	Develop an internal Universal Access plan.	Preliminary work began on plan.
12	Continue to control and monitor research and other public access through an internal review process and permit system. Maintain electronic databases for permit issuances, access notification, and any problems.	Fifteen Research permits were granted this FY for work in the Quabbin/Ware River watersheds. Permits expire annually. Researchers were required to submit an annual report before being eligible to renew a research permit. The annual report was compiled and distributed to staff.
13	Manage public access permits for large groups, short-term vehicles, etc.	The online permitting system has streamlined our efforts. We will continue providing information to groups in the Ware River Watershed area regarding permit requirements.
14	Finalize Ware River Public Access Management Plan Update	Plan neared completion at the end of fiscal year to be finalized in early FY 24.
15	Implement social media trial program	No work this FY.
<b>F. Watershed Security</b>		
1	Continue regular ranger patrols to provide watershed security. Perform regular security checks at key access points and MWRA facilities. Use daily logbooks to record all encounters and violations. Produce periodic reports.	Watershed Rangers continue regular ranger patrols to provide watershed security. Perform daily security checks at key access points and MWRA facilities. Use daily e-logs to record all encounters and violations. Produce periodic reports.
2	maintain gates, barways, bollards and signage throughout the watersheds. Install barriers (such as guardrails or fences) as needed to protect properties and control public access.	Gates and bar ways are checked regularly by multiple staff/sections and any concerns/damage are addressed quickly. Locks maintained an all gates and bar ways.
3	Coordinate security monitoring and related activities at high vulnerability locations with MWRA.	Communication ongoing this FY with the State Police C-7 Barracks and also the Marine Unit. Several meetings held with the Marine Unit local commander to coordinate the fishing season. New buoys installed at the Gate 8 barrel line to discourage boaters from going south past the barrels. Regional Director sent out several fishing ban letters to individuals with the most egregious violators.

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4	Work with local state and federal responders to ensure current agency emergency contact information.	Emergency contact tables and protocol were updated at Management Level within DCR-DWSP and MWRA. Tables and procedures were distributed to MA SP C7and MA SP Marine Unit. Secure video screens for watershed wide surveillance camera live footage was relocated with in the Admin building to the new Ranger space. All DWSP and LTS staff are given Emergency Response SOPs (See Something Say Something). All DWSP staff submit Emergency contact information to Quabbin Managers and special operation program supervisors (BHP and Snow/Ice Program) in FY23.
	<b>G. Infrastructure</b>	
1	Conduct monthly inspections and issue findings on Winsor Dam and spillway and Goodnough Dike. Coordinate inspections with MWRA and consultants. Plan for or conduct dam repair work as called for in dam inspection reports.	<p>DCR-DWSP conducted monthly inspections and shared reports of the findings throughout FY23 with designated DCR-DWSP and MWRA staff. Key findings included the deployment of the hydroseeder in the late Fall season at Winsor Dam and Goodnough Dike, in addition to the routine maintenance schedules. Phase I Compliance inspections were conducted at the Quabbin Reservoir Dams by GZA in October 2022, and were accompanied by MWRA and DCR-DWSP CE staff, who also provided review and comment on the resulting Phase I Report.</p> <p>DCR-DWSP CE staff provided planning and logistical support throughout FY23 on the MWRA Winsor Dam Intake Building Maintenance Project: the scope included cleaning of the exterior stone walls, repointing, asbestos abatement of the window caulking/sealants, replacement of the window caulking/sealants, and removal and resetting of large riprap stone set against the building. Once the project officially kicked off following the contract awarding, DCR-DWSP was made available to provide assistance as needed to help facilitate the completion of the work. Project contract requires the completion of work by November 2023.</p>
2	Conduct periodic inspections and issue findings on DCR's bridges and small dams in the Quabbin/Ware Region. Assure compliance with all dam safety requirements for small dams on DWSP lands, including the review of new or updated Emergency Action Plans.	CE Staff continue to monitor failing conditions of the historic Keystone Bridge on the Middle Branch of the Swift River in New Salem. The services of a dry stone mason, Michael Weitzner were secured thru outreach efforts with the Swift River Historical Society. Mr. Weitzner offered an independent assessment of the structures condition and explored repair options to stabilize the failing stone spandrel wall and arch structure. Further outreach was made to DCR SP Engineering and DCR Cultural Resources staff to strategize on remedial repair options. Representatives from MIG Corporation visited the structure in May and offered a sobering and very costly assessment. MIG Corp's recommendation is that a full reconstruction was necessary to stabilize the structure,
3	Implement basic maintenance activities at the Dam, Dike, and spillway as needed	Will utilize the ventrac seedovator to help grass germination this fall
4	Provide oversight and technical support for engineering, construction, and renovation work in the Quabbin/Ware Region.	<p>Work was completed under DCR Contract #W22-7438-C01 by R. Bates and Sons Inc to upgrade the stream culvert at Gate 40 (Dana Common entrance) in Petersham. Crews installed a three-sided pre cast culvert structure and constructed a naturalized stream channel thru the crossing once restricted by failing twin, 36-inch diameter corrugated metal pipes. The new structure was installed to be fully compliant with Stream Crossing Standards.</p> <p>CE staff prepared environmental permits and plans for the reconstruction of Hell Huddle Road (Gate 43) in the town of Hardwick. Environmental permitting was cleared thru DCR Green Docket and a Request for Determination was filed with the Hardwick Conservation Commission. A negative determination on the project was issued by the Hardwick Conservation Commission in August 2023.</p>
5	Maintain records regarding reservoir and facility construction, as well as maintenance and repair operations. Provide surveying and drafting services, maintain records, and respond to in-house and other requests for information related to land ownership, property lines, buildings, and construction projects.	<p>Four projects were put out to bid in FY23. Two of the four were funded with the available monies from the Stewardship Fund. A number of projects remain in the queue for future contracted work.</p> <p>CE Staff worked collaboratively with GIS and Forestry staff to establish a series of tools, built through ArcGIS Online for boundary lines and points. These layers work in tandem with the previously developed Encroachments Hub to assist with any boundary related inventory and maintenance of property lines.</p> <p>CE Staff was in receipt of new property acquisition documents and plans from the NR section and the properties were put into the Boundary Point inventory for future maintenance.</p> <p>CE has utilized equipment and tools to provide guidance on road, culvert and bridge projects.</p>

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6	Conduct building maintenance activities, including painting, carpentry, cleaning, minor repairs, and other routine maintenance.	Routine cleaning rotations established on floors, air purifiers, water and air filtration. Organization and scheduled tasks have been useful with cleaning especially with areas that have not been cleaned thoroughly. Focus has been on preventative maintenance. Building care with gutter cleaning, wall repair and repaint, caulking to prevent water penetration and resolving water leaks have been key in keeping a safe work environment and also protecting the buildings.
7	Conduct periodic inspections of drinking water sources and septic systems at the various Regional office buildings. Assure compliance with applicable state and federal regulations.	<p>DCR contracted with Whitewater Inc for certified water system operator services for its Public Water Supply System operated at the Quabbin Administration Building. Certified water operator duties were previously assumed by CE staff. Contracted services also include laboratory testing and analysis previously performed by the MWRA laboratory. CE staff oversee the service contract and continue to provide daily operational oversight and assistance to Whitewater operators.</p> <p>Compliance tasks completed this past year include:</p> <ul style="list-style-type: none"> <li>&gt;Lead and Copper Compliance Monitoring</li> <li>&gt;Monthly Coliform Bacteria Compliance Monitoring</li> <li>&gt;All Required PWS Quarterly Compliance Monitoring</li> <li>&gt;Backflow Device Testing</li> <li>&gt;Annual Stats and System Modification Reporting</li> </ul>
8	Conduct periodic inspections, maintenance, or oversight of heating systems, fuel pump operations, and fuel deliveries.	Overall operating systems at BMCC, Admin, Cemetery, and field offices were in good working order. We still have issues at the watch tower lower bathrooms, and stock room building. Working on these and hopefully will be resolved before the heating season. All systems were inspected by the fire marshal.
9	Develop specifications, bid packages and contracts for facility and infrastructure projects identified in the Major Projects List for FY23.	<p>Facility improvement projects completed during the past year include the following:</p> <ul style="list-style-type: none"> <li>&gt; Abatement of asbestos containing materials inside the Les and Terry Campbell Quabbin Visitor Center</li> <li>&gt; Annual service, 5YR internal sprinkler inspection and replacement of fire sprinkler heads at the Administration Building Complex.</li> <li>&gt; Stephens Associates performed a structural assessment and guided exploratory masonry demo and repair on the Quabbin Tower in Ware. The effort was funded by DCR Cultural Resources and culminated in to a final report titled "Structural Engineering Report Quabbin Observation Tower" dated February 10, 2023 (see attached). Among the recommendations from the report was to install temporary shoring to shore-up concrete encased metal floor beams that have become compromised due to corrosive conditions. Temporary shoring has been installed but the observation tower remains closed to the general public due to safety concerns.</li> </ul>
10	Conduct maintenance and management activities in Quabbin Park, including roads, roadsides, parking areas, drainage structures, fields, vistas, snowplowing, and other management activities.	Staff are doing an excellent job staying up to date on all maintenance activities throughout QP.
11	Continue to conduct routine maintenance and burial activities in the Quabbin Park cemetery.	continue to monitor burial activities and mow weekly
12	Conduct Quabbin Park Cemetery business and record keeping.	Over 500 Cemetery deed records have been scanned.
13	Continue to conduct road maintenance activities on DWSP lands.	Repair and maintenance work continued around the watersheds.

Task #	Task Description	Final Yearly Summary
14	Continue to collect data on road conditions and culvert locations.	<p>FY23 kicked off with the construction contract for the Gate 40 Culvert Replacement. R. Bates completed the installation in late fall and the road was restored to normal operations.</p> <p>Rocky Run Bridge replacement was permitted and installed in early FY23. Permitting was completed via RDA in July and construction took place in August. This was an in-house project with collaboration between carpentry and watershed maintenance staff.</p> <p>Plans and permitting documents were prepared for the Camel Brook Bridge and Road Repairs in Shutesbury.</p> <p>Keystone Bridge suffered a partial collapse of the southeast spandrel wall. DCR seeking options for repair if possible, replacement cost, or removal. Installing a temporary footbridge with kiosk is being considered as a short term memorial/preservation effort. Conservation Commission and Green Docket Staff (Ecology and Cultural Resources) were brought to the site. DCR-SP weighed in on possible solutions, however, their contracted budget seems to be exhausted.</p> <p>A total of 21 culverts and 2 bridges were fully inventoried and inspected during this FY using the ArcGIS Online tools. Additional structures were observed but not formally recorded.</p>
15	Assess gravel pits and gravel resources on DWSP lands in the Quabbin/Ware Region. Annually review and monitor gravel extraction and site closure and Best Management Practices (BMPs).	Limited work this FY due to staffing.
<b>H. Watershed Protection Act</b>		
1	Implement the Watershed Protection Act regulations in 14 Quabbin Reservoir and Ware River Watershed towns. Review and process all WsPA applications, and track the status of applications and associated projects using an Access database. Inspect sites throughout the duration of any activity to ensure compliance. Investigate and resolve violations of WsPA regulations.	Received and processed 24 cases in the Ware River Watershed. Received and processed 8 in the Quabbin Watershed. Investigated and resolved several violations in the Ware River Watershed. Conducted multiple site inspections in the Ware and Quabbin watersheds. Fielded numerous calls from town boards, consultants, and homeowners.
2	Continue to review or evaluate public notices, local board agendas and minutes, and information provided by local sources for additional jurisdictional activities or enforcement actions.	Reviewed agendas and minutes for all the towns in both watersheds. Contacted towns regarding projects and violations within WsPA jurisdiction.
3	Convene WsPA Working Group meetings.	WsPAWG continues to meet formally and informally to review regulatory implementation of the Act. Effective communication amongst staff ensures consistent interpretation of the law.
4	Educate and interact with local boards and officials in the watersheds about watershed protection regulations. Educate local officials, realtors, prospective buyers, land development consultants, and homeowners on WsPA regulations and procedures.	Fielded calls from town officials, developers, engineering firms, and homeowners and assisted them with the Watershed Protection Act.
5	Provide technical assistance support to local boards through contact, meetings, and/or through regulatory review process.	No activity for this year.
6	Modernize the current Access database into a web-based platform.	Finalized database with SOP manual. Historical files will continue to be uploaded.
<b>I. Education and Outreach</b>		
1	Develop an Interpretive Services Plan for the Ware River Watershed	Waiting for final WR public access plan to be completed.
2	Staff and operate the Visitor Center at Quabbin to educate visitors about watershed management and related topics.	Approximately 4000 people visited the Visitor Center this FY. In addition, staff presented 19 in person programs, 7 fully remote programs, and 1 hybrid program.
3	Continue established programs of public education, including school programs and field trips on DWSP properties.	IS offered 38 programs to school with a mixture of in person and remote.
4	Collaborate with other organizations and watershed communities to reach more diverse audiences. Identify specific groups and their educational needs.	Quabbin IS Staff have been successful in connecting with local groups and libraries to provide educational programs about Quabbin and are Ware River Watersheds. By developing relationships with these groups, IS staff hopes to strengthen ties with local communities and promote a better understanding of DCR-DWSP mission of watershed protection.
5	Maintain self-guided Quabbin Park interpretive trails focusing on natural resource management and water quality protection.	DCR finalized a 1-year volunteer stewardship agreement with the Pioneer Valley Hiking Club. SCA completed a trail hitch at Quabbin in June and cut back overgrowth on all trails in Quabbin Park.

Task #	Task Description	Final Yearly Summary
6	Maintain vital records collection for former Quabbin valley towns, issue official records and conduct genealogical and historical research upon request.	Quabbin IS staff continue to provide assistance for individuals doing genealogical research through the vital records as well as the online cemetery records.
7	Manage audio-visual collection of the Region including photographs, slides, and media coverage of Regional activities and Quabbin-related topics.	A simple photo labeling system has been created and will be shared with staff so they can begin uploading photos to these folders.
8	Organize, catalog, and digitize oral history tapes using an outside contractor.	Effort still in planning stage.
9	Continue to support and participate in the Envirothon, America's leading natural resource education program for high school students.	2023 Envirothon held at Blackstone Valley. Planning for 2024 continues.
<b>J. Water Quality and Hydrologic Monitoring</b>		
1	Conduct routine and non-routine water quality sampling and analysis. Evaluate need for sampling before/during Quabbin transfers.	Routine and non-routine sampling and analysis continue. No needs identified for sampling before/during transfers.
2	Perform Shaft 8 Intake Zone Inspections prior to MWRA diversions.	Completed two sanitary survey inspections between 2022-2023 season. Created new Survey123 survey tool and SOP guide document to support future surveys. Guide includes inspection locations, photo points, and reporting procedures.
3	Monitor plankton in Quabbin Reservoir. Evaluate need for sampling before/during Quabbin Transfers.	Starting in May plankton monitoring at site 202 (Winsor Dam) has been done on a weekly basis, while plankton monitoring at the two other reservoir sites (206 and Den Hill) has continued on a monthly basis. Starting in October all sites will be monitored monthly. Based on the phytoplankton action plan created earlier in 2023, the frequency in monitoring was increased once due to an exceedance in the Chrysosphaerella Alert Level on July 12 at site Den Hill. Monitoring frequency at site Den Hill returned to monthly after phytoplankton counts showed no Chrysosphaerella in late July. No other Alert Level was exceeded and thus monitoring frequency for the other two sites did not change.
4	Collect, interpret, and manage data on reservoir elevations, water transfers and releases. Share data with DWSP staff and MWRA.	<p>Quabbin Reservoir elevation at the start of FY23 (July 1, 2022) was 528.09 ft, and the quantity of water in storage was 397,393 MG (96.4%). The Reservoir elevation at the end of FY23 (June 30, 2023) was 526.91 ft, and the quantity of water in storage was 388,425 MG (94.2%). The lowest it would drop was 522.61 ft (November 27, 2022), and the quantity of water in storage was 356,175 MG (86.4%). The max it would reach was 528.32 ft (May 9, 2023), and the quantity of water in storage was 399,164 MG (96.8%).</p> <p>Two different spill periods were observed at Quabbin lower spillway in FY23. The first was the tail end of a lengthy spill period that ended July 3, 2022. Only approximately 1 MG spilled from July 1 to July 3, a small portion of the 141 consecutive day total that spanned across FY22 and FY23. The reservoir would again spill over the lower spillway starting on April 30, 2023 until May 25, 2023 - with an approximate total of 102 MG flowed into the Swift River Y-Pool as a result. In total ~103 MG spilled during FY23.</p> <p>MWRA reported active transfer from Quabbin Reservoir to Wachusett Reservoir during two distinct periods. Approximately 38,630 MG were transferred from July 1, 2022 to December 16, 2022. Another 14,615 MG were sent from May 10, 2023 to June 30, 2023. The Spring transfer schedule was discussed at length by MWRA and DCR at a Res Ops Mods Working Group conference call in March. Ware River Diversion from Shaft 8 to Shaft 11A at Quabbin was active 1/9/2023 – 1/12/2023: A total of approximately 600 MG diverted.</p>
5	Monitor water quality at active harvesting stream crossing sites to measure effectiveness of BMPs.	Monitoring was conducted for background conditions at two lots in Ware River watershed and one lot in Quabbin watershed. The Granger Road site (WR-19-19-2) completed active harvesting in Q2, and post-harvest monitoring was begun. Water quality monitoring at all sites was ended in January 2023.
6	Continue improvements to database app for compiling of water quality, quantity, and other relevant data for data and trend analyses.	EQ's water-quality database continued to be developed through FY23, with several key improvements completed. New linkages between ArcGIS workflows and the central SQL database were developed to better integrate data in a central location. Additional historical data records were added to the database (reservoir field notes, secchi data, USGS groundwater data, etc.), and incoming data generated by DCR and MWRA continued to be imported through WIT (our R shiny app for data import). New staff were trained on database access and new tools were developed to increase staff involvement with data management. FY23 also saw coordination within the Quabbin-EQ section to evaluate and document historical data to aid in future QA/QC processes and long-term analyses.

Task #	Task Description	Final Yearly Summary
7	Implement streamflow monitoring at selected sites. Coordinate flow monitoring with annual water quality sampling plan.	Streamflow monitoring in FY23 focused on maintaining established DCR-Quabbin stream gauges, organizing and analyzing historical data relevant to the long-term forestry project, and building partnerships with USGS technical experts. Stream gauge data from seven tributary locations continued to be downloaded, processed, and stored in established data archives according to standard operating procedures. Preliminary analyses of stream temperature data were completed with a UMass seasonal intern, including the development of scripts for processing stream temperature data. Streamflow records from the long-term forestry study were processed and analyzed to inform calibration period reporting; the workflow for this data processing will be used for final reporting as well. A new partnership with USGS was launched to leverage machine-learning approaches in the ongoing development of rating curves at Quabbin gauge locations. Multiple vacancies with EQ affected the priority level and thus development of the DCR-Quabbin streamflow monitoring program.
8	Assist MWRA with the continuous water quality monitoring buoy at Quabbin Reservoir	Provided boat support needed to replace sondes and conduct maintenance, including troubleshooting of battery power in Q2. Buoy was taken off the water on 12/6/22 for winter maintenance and storage, and mooring lines were secured and marked with winter buoys. Staff and State Police were notified of buoy removal and no-wake zone near the mooring lines. In Q4, buoy was deployed for the season on 5/10/23. Boat support for MWRA troubleshooting (winch coupler, solar regulator) and sonde replacement (ORP sensor) was provided. Staff and State Police were notified of deployment and no-wake zone in the buoy's vicinity.
9	Implement ISA with UMass for Research	Continued coordination with Wachusett EA V, UMass faculty and students, and DWSP staff as needed. Participated in meetings and planning. For the Total Coliform project, coordinated meetings and logistics, and requested MWRA participation and assistance. Provided requested info to UMass/RWU.
10	Coordinate with MWRA on Res Ops work groups as needed.	Participated in meetings as needed. Collaborated and shared data. For MWRA/UMass HAA Precursors project, responded to inquiries on Gate 13 access, East Fever Brook area, and table of subwatershed areas; reviewed quarterly report, confirmed no in-reservoir sampling needed during algal blooms.
11	Download and evaluate wind data from MWRA MET station (buoy and/or intake building).	No Progress this Fiscal year. Awaiting data sharing from MWRA. New MET station at the Winsor intake building is in development.
<b>K. Watershed Monitoring and Assessment</b>		-
1	Complete Environmental Quality Assessments in the Quabbin Reservoir and Ware River watersheds according to a prescribed schedule. Present EQAs to RD and DRD.	Integration of GIS and significant refinements of the EQA template have been completed to standardize reporting across both watersheds. EQA reports for Burnshirt Canesto & Natty sanitary district and Fever Brook sanitary district were finalized in July. Staffing level and shift in priorities led to fewer surveys during the May-October 2022 field season. A total of 6 ponds were surveyed in addition to the holding ponds and the west arm of the reservoir. Survey schedule for the next field season (May-October 2023) was completed, and includes 14 waterbodies. QuickCapture and FieldMap apps were edited, tested, and put into use for AIS survey data collection. Three ponds were surveyed for AIS presence/absence, two in the Quabbin Reservoir Watershed and one in the Ware River Watershed. No new AIS to report. Utricularia inflata (swollen bladderwort) was found during a routine survey of the fragment barrier above BLA3. In response, an initial investigation took place to determine location and extent of infestation. Two days were then spent (24 manpower hours) to hand remove plants (72.5 gallons were collected & disposed of). Based on the density present & control effort required, it was decided contractors would need to be brought in.
2	Prioritize recommendations in completed EQAs as necessary and complete short- and long-term remedial actions.	Short- and long-term recommendations and completed actions detailed in final EQAs for Burnshirt Canesto & Natty sanitary district and Fever Brook sanitary district.
3	Conduct routine inspections of the Winsor basin/CVA intake area. Inspect MWRA CVA screen washing when necessary. Report debris and aquatic organisms trapped on screens.	Inspections were conducted routinely until staff retirement. With staffing constraints, inspections were conducted when needed.
4	Coordinate with other agencies to exchange information and review projects in watershed.	MEPA Environmental Monitor was reviewed regularly for projects in watersheds. One project was identified in Ware River Watershed for aquatic plant treatment on Lovewell Pond.
5	Review and comment on Yearly Operational Plans related to herbicide use. Monitor and inspect no-spray and limited spray zones along rights-of-way.	Completed review and worked with other DWSP staff to submit separate comment letters for 2023 National Grid YOP and 2023 Providence & Worcester YOP.
6	Work with timber harvesters to reduce the risk of introducing invasive species into the watersheds.	Checked equipment for all timber harvests prior to moving equipment onsite, to prevent invasive species from being moved onto DWSP property.



Task #	Task Description	Final Yearly Summary
7	Monitor ROW maintenance, repair, or replacement projects on DCR lands for water quality problems.	Short-term access permits were issued and gate access issues were resolved in both watersheds.
8	Use site inspections, environmental quality assessments, local board meetings, and information from Watershed Rangers to identify and mitigate possible violations of state and federal regulations. Monitor progress and pursue enforcement if needed.	Mitigated most frequently encountered environmental issues in the Ware River Watershed through collaboration with Rangers and other staff at DCR. Established valuable local relationships that may be helpful for future EQA work in both watersheds.
<b>L. Aquatic Invasive Species</b>		
1	Implement the AIS monitoring plan and update as necessary.	The AIS monitoring plan continued as in past years, with minor updates as needed. Updating the plan across DWSP watersheds is slated for FY24 completion.
2	Continue program to monitor AIS in the Reservoir.	AIS monitoring program for 2023 includes conducting macrophyte surveys and zooplankton monitoring. Ten macrophyte surveys have been completed and three are pending (will be completed by Oct 2023). Only one survey had to be cancelled due to road conditions and weather. Zooplankton monitoring for AIS started in June 2023 and oblique tows have been conducted every other month. So far, no invasive zooplankton species have been observed.
3	Implement the AIS emergency action plan and update as necessary.	No changes made to the AIS emergency action plan during this FY. The action plan needed to be implemented due to the discovery of <i>Utricularia inflata</i> (swollen bladderwort) at Pottapaug Pond in late May, with identification confirmed in June. DWSP staff surveyed, mapped, and removed the AIS in June and coordinated with MWRA on additional AIS removal in July, with further removals to be conducted in Spring 2024. As a result of the AIS findings, boat access on Pottapaug was restricted (use of DCR rental boats only), and AB staff will survey for the AIS twice annually in Pottapaug (spring and late summer).
4	Continue the Quabbin Boat Seal program to minimize the risk of AIS infestation of Quabbin Reservoir.	The Quabbin Boat Seal program continued, with boater database regularly updated, QAQC performed, and monitoring for potential data entry issues. Inspections, data entry, and QAQC were completed for 2022 Warm Weather Decontamination (17 dates) and 2022 Cold Weather Quarantine (5 dates). Boat Seal program data were summarized in the BLA Report. Preparations for the 2023 program were completed. Scheduling of appointments began March 1, with 154 appointments taken through July 11. For the 2023 season to date (April-June), 12 Warm Weather Decontamination events have been completed, with 4 remaining dates in July-September 2023. Database is up to date.
5	Work in conjunction with MWRA contractors to survey areas of the Reservoir. Evaluate and make changes in program as needed.	The annual aquatic macrophyte survey on the Reservoir was completed August 10-17, 2022. Survey of the Ware River Shaft 8 intake area and immediately upstream was completed on August 4. Consultant report was received and reviewed. New consultant brought on board for the 2023 survey scheduled for August 7-10. Ware River Shaft 8 drawdown and survey date TBD.
6	Conduct public education in coordination with DCR Lakes and Ponds and MWRA.	Rangers regularly educate the public on the AIS self cert program throughout the boating season- talking to boaters as they arrive or exit, keeping the self-certification forms stocked at all times, placing forms and AIS brochures on vehicles that have not complied with the process.
<b>M. Wastewater Management</b>		
1	Identify potential problem sites or areas through review of local records, water quality data, and other pertinent information.	Staff reviewed numerous data sources to identify problem sites and complete EQA reports in Fever Brook and Burnshirt Canesto & Natty Sanitary Districts.
<b>N. Stormwater Management</b>		
1	Advise local boards on stormwater management issues related to construction activities.	No activity for this year.
2	Monitor stormwater management in the watersheds.	Attended snow removal and E&SC training. Monitored potential stormwater issues through field investigations and use of aerial imagery.
<b>O. Emergency Response (Preparedness)</b>		
1	Develop and/or update Emergency Response materials for the Quabbin and Ware River watersheds, with up-to-date contact information, emergency procedures, and roles/responsibilities.	DWSP Emergency Response for MWRA/MSP-Marine Unit and C7/Watershed Rangers was updated and distributed this quarter. Ranger and BLA schedule changes are distributed throughout the year.
2	Implement SOPs for spill response and dumping and define DCR staff roles in both assessment and response.	Draft of spill SOP paused due to staffing changes.



Task #	Task Description	Final Yearly Summary
3	In conjunction with MWRA, coordinate spill response and/or incident command system (ICS) training to staff.	All scheduled spill response trainings for the season were completed as scheduled. Emergency Response trailers are up-to-date; a new trailer was purchased by MRWA this FY and DCR took possession. The three, Quabbin Boat Launch Areas were inventoried and supplied with items needed prior to the start of the Spring/Summer '23 fishing season.
4	Coordinate cleanup operations for any spills and dumping that impact or threaten water resources. Work with the appropriate local, state and federal agencies to ensure that spill containment, cleanup, and mitigation is conducted in a manner that protects water quality.	No significant spills this FY. Several minor incidents were reported to DEP as a courtesy call.
5	Develop and implement spill response plans for all timber harvesting operations on DWSP lands.	Developed and implemented spill response plans for all timber harvesting operations on DWSP lands.
6	Conduct annual review of existing spill response access sites.	Annually.
7	Complete a watershed-wide vulnerability assessment to identify potential impacts of climate change on emergency response in the water supply.	No work this FY.
	<b>P. Support</b>	
1	Operate administrative office	Ongoing
2	Manage payroll through SSTA and HR/CMS.	Ongoing
3	Provide contract administration and related procurement	Renewed DCR 832 Portable Toilet Rental & Service and DCR 766 Ranger Uniform Dry Clean & Tailor contracts. Established a five-year contract, DCR 906 Purchase of Fishing Boats, to enable us to replace a significant number of DCR's rental boats over the next five years. Worked with other sections/regions on other major procurements; hazard tree removal, installation of barriers, road maintenance supplies, land maintenance equipment, and surveying services.
4	Keep records and assist in purchasing of goods and services.	Requisitions/Purchase Orders through COMMBUYS by the Storekeeper IV for FY 23 total \$163,370.82.
5	Process revenue for BLAs, Cemetery, and Forestry	Ongoing
6	Coordinate with EOEEA IT to provide local MIS support for the Quabbin/Ware Region.	Ongoing. Cell phones were issued throughout the fiscal year as appropriate. Phones requiring updating due to security issues were replaced by IT. iPads were replaced or purchased on an as-needed basis. A new shared iPad was made available to staff to ensure that more availability existed for staff without an assigned device.
7	Provide personnel services and assistance for all Quabbin/Ware Region employees.	Ongoing
8	Submit regular reports to Division Director, MWRA, and the Water Supply Protection Trust Board.	All reports submitted on time.
9	Plan and implement vehicle and equipment purchases in coordination with WA.	FY23 assessments of Quabbin fleet completed. Recommendations for replacements and "Right Sizing" have been completed. FY24 Request Workbooks submitted.
10	Conduct truck, boat, and equipment inspections and maintenance as needed, utilizing Fleetwave.	FY23 monthly inspections are completed. Maintenance and repairs are completed keeping the fleet operating. BLA outboards have been serviced at all (3) areas.
11	Administer the Payment in Lieu of Taxes (PILOT) program	Total FY23 PILOT was \$8,479,324.48. This is the first time since legislation passed that there was no increase in PILOT. The total "Hold Harmless" amount (the amount calculated vs the amount paid because payment can never be less than previous year) was \$2,305,499. Total amount paid to Quabbin towns was \$2,920,964, or 34% of total; the amount of that Quabbin total paid to five towns as "Annexed Lands" was \$662,153, which is 23% of the Quabbin total or 8% of total PILOT. The amount paid to Ware River towns was \$1,066,310, or 13% of total PILOT. DCR staff worked with Dept. of Revenue, Division of Local Services technical staff to set up portals on the DLS Gateway that provide all PILOT details, making this information accessible and transparent for local officials and the public.
12	Maintain ArcGIS Online environment for all staff to successfully complete projects.	This is an ongoing task. ArcGIS Online was successfully maintained for staff use throughout the FY.

Task #	Task Description	Final Yearly Summary
13	Configure and maintain both internal and externally facing ArcGIS Online applications. Work with staff to generate field data collection tools using Survey123 and/or Field Maps for ArcGIS. Maintain existing field data collection tools for staff; maintenance includes archiving of data (as needed) and ensuring that Surveys and Maps remain functional through upgrades to ArcGIS Online and mobile apps.	A series of large projects were completed to streamline and enhance staff's ability to record and track water quality and potential water quality issues in the watersheds. Through collaboration with EQ staff, 3 new databases and workflows were released for staff this fiscal year - the EQ database, the CGP database and the Ag database. These were based off the success experienced with the migration of the WsPA database to ArcGIS Online; many features created for the WsPA database were repurposed for these three other new databases and management systems for staff. Additional work to streamline EQA reporting will be addressed in the next FY. A new public-facing Hunting Map was developed in collaboration with NR staff. This not only served as a much needed replacement for outdated apps, but also provided staff with a new template for any public-facing Experience Builder app going forward.
14	Publish hosted feature layers, tile layers and tile packages on an as-needed basis to support projects. Ensure that all public-facing data has proper metadata added as per the EEA ArcGIS Online Best Practices.	Data continues to be maintained and made available to staff through ArcGIS Online. Data are updated on an as-needed basis so that staff have access to the most updated data available.
15	Provide staff with training in desktop, mobile and online GIS applications.	A series of 4 ArcGIS Pro trainings were offered to staff in June 2023. These virtual trainings were recorded and training documents are available to staff through the DWSP-GIS Team. Additional workflows and training were developed on an as-needed basis for discrete projects (e.g. EQ and WsPA database management).
16	Train staff in field data collection applications as needed for specific projects. Assist with setting up Field Maps and Survey123 to work with Bad Elf Pro+ GPS units, or with the Arrow 100 GNSS receiver.	No activity this FY.
17	Keep current in new and emerging GIS technologies by attending webinars, taking self-paced trainings and attending conferences (where possible). Alert GIS users to free training or webinars and encourage continued learning.	GIS staff continue to advance their skills and knowledge by attending GIS conferences (when possible) and online trainings/webinars.
18	Provide GIS and GPS services and associated mapping for all Regional plans, reports and projects, as needed. Keep GIS datalayers updated as new information becomes available.	Maps and analysis provided for 2023 Watershed Protection Plan update, Ware River Public Access Plan, EQAs and more.
19	Update digital information, including all new DWSP land purchases, WsPA maps and parcels, and provide analyses for use in DWSP reports and publications.	Updated WsPA Affected Parcels and Potentially Affected Parcels were developed using updated parcel data from MassGIS. A new public WsPA Viewer is in development in coordination with planning staff.
20	Encourage staff to participate in professional development opportunities, including professional memberships, meetings, trainings, webinars, and field trips.	Ongoing
21	Budget development, maintenance, monitoring, and forecasting (e.g., Operating, Capital when available, Major Projects, other)	Monitored the budget through monthly reporting of Budget vs. Encumbered and Spent, Encumbrance Balance, and Project Status Reporting. Met monthly with the Major Projects Working Group to monitor project status and spending. Met quarterly and/or regularly updated RD and DRD on operating budget versus spending to make adjustments in purchasing in accordance with need, product/service availability, and unexpended funds. Monitored fuel consumption and pricing on an ongoing basis due to price volatility in the markets and consumption changes.
22	Begin developing the new 5-year Watershed Protection Plan.	The Watershed Protection Plan is an integral component to the DCR/MWRA filtration waiver. It must be updated every five years. DCR initiated the process for the latest update in FY22, however the bulk of the work to prepare the plan took place in FY23. DWSP staff pulled together a tremendous amount of information to provide a comprehensive approach to watershed management over the next five years. Drafting of sections took place through the first half of FY23. A completed draft was sent to MWRA in April and a subsequent final draft was sent to MassDEP for review in May. MassDEP subsequently provided feedback for a final Plan. They concluded that, "The update provides DCR staff, the public and others with a very useful history and current status of reservoir operations and watershed programs and is very reader friendly. The five-year action plan is impressive and the incorporation of climate change information throughout the watershed programs is excellent." The final FY24-FY28 Watershed Protection Plan was submitted to MassDEP at the end of June 2023. The five-year implementation plan is the base of the FY24 Work Plan which was approved by the Water Supply Protection Trust at their June 7, 2023 meeting.

# Summary of Wachusett Watershed Ranger Interactions

## Final Report FY23

Visitor Contacts: 15,321

Violations: 1,016

Parking Tickets: 36

Law Enforcement Calls: 16

Ban Letters: 0

313 CMR 11.09	CONDENSED CMRs	# of Violations
<b>Wachusett</b>		
2a1	Entrance/Exit only through gates or designated areas.	0
2a2	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset	42
2a3	No powered boats except in designated areas.	0
2a4	No acts which may pollute the water system. No litter thrown or left. Must use sanitary facility.	1
2a5	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders or other material. No building or constructing any object or structure on property. Collection of berries and mushrooms is allowed for personal use only.	6
2a6	No cooking or fires.	16
2a7	No wading or swimming in reservoir except wading while using boots to launch boats in designated areas.	142
2a8	No wading or swimming in Tributary or Surface Waters, except in designated areas.	6
2a9	No organized sport activities.	0
2a10	Division and employees of are not responsible for damage to or loss of property sustained by fishermen, or for any loss of life which may be incurred in connection with public use of the reservoirs and watershed system	0
2a11	No profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	29
2a12	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	14
2a13	No animals, except for horses and dogs at Ware River designated areas.	305
2a14	Bicycles, skis and other non-motorized transportation permitted in designated areas only.	46
2a15	No landing aircraft or causing to descend except in an emergency.	0
2a16	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0
2a17	No lotteries, raffles, gambling or games of chance. No possession of machinery for the former.	0

<b>313 CMR 11.09</b>	<b>CONDENSED CMRs</b>	<b># of Violations</b>
2a18	No groups of more than 25 people without written permit.	0
2a19	No engaging in business, sale or display of goods or wares without written permit.	0
2a20	No commercial signs or advertising.	0
2a21	No persons (unless authorized by law, license, or permit) shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. All forms of target shooting are prohibited.	1
2a22	No hunting, shooting, or trapping animals except at designated times and areas.	8
2a23	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers, DCR Rangers, or persons in charge, or of Federal or Commonwealth wardens or enforcement officers.	225
2a24	Any part of the watershed lands may be closed for the public access at any time by the commissioner.	81
2a25	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed System property.	3
2d1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore of Wachusett Reservoir in areas designated by the commission or its designee.	62
2d2	Boating is prohibited in Wachusett Reservoir.	2
2d3	Fishing from the shoreline of the Reservoir shall be allowed only during a season designated by the Commission or its designee.	13
2d4	Any violation of 313 CMR 11.09 will be deemed sufficient cause for revocation of fishing privileges for not less than one year	0
<b><i>Sudbury</i></b>		
2e1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore of Sudbury Reservoir in areas designated by the commission or its designee.	14
2e2	Boating is prohibited on Sudbury Reservoir.	0
<b>TOTAL VIOLATIONS</b>		<b>1,016</b>

# Summary of Quabbin Watershed Ranger Interactions

## Final Report FY23

Visitor Contacts: 24,293

Total Violations: 221

Parking Tickets: 2

Law Enforcement Calls: 0

Ban Letters: 2

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
1a	No Taking/Diverting Water.	0
1b1	No construction, filling, dredging, altering land w/out provisions to prevent erosion.	0
1b2	No construction, establishing, maintaining agricultural facilities or animal manure without adequate provision to prevent manure/other pollutants from entering Waters of Watershed System.	0
1b3	No engaging in any other activity that could degrade water quality.	0
1c	No person's property condition should result in discharge of any Pollutants into waters of Watershed system.	0
1d	Records of board of health or health agent concerning Watershed open to inspection by DCR/DEP.	0
1e	Person's causing incident/situation threatening pollutants to watershed shall notify DCR/DEP.	0
2a1	Entrance/Exit only through gates or designated areas.	0
2a2	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset (with permitted night fishing exception).	4
2a3	No powered boats except in designated areas.	0
2a4	No acts which may pollute the water system. No litter thrown or left. Must use sanitary facilities.	0
2a5	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders, or other material. No building or constructing any object or structure on property.	1
2a6	No cooking or fires.	4
2a7	No wading or swimming in reservoir except wading while using boots to launch boats in designated BLAs.	12
2a8	No wading or swimming in Tributary or Surface Waters, except in designated areas.	0
2a9	No organized sport activities except by written permission.	0
2a10	DCR/DWSP and employees are not responsible for damage to property, injury, or loss of life sustained by fishermen while using the reservoirs within the watershed system	2
2a11	Breach of peace, profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
2a12	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	5
2a13	No animals, except for horses and dogs at Ware River designated areas.	75
2a14	Bicycles, skis and other non motorized transportation permitted in designated areas only.	6
2a15	No person shall bring land or cause to descend any aircraft within the Watershed except in an emergency.	6
2a16	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0
2a17	No lotteries, raffles, gambling or games of chance. No possession of machinery, instruments or equipment for the former.	0
2a18	No groups of more than 25 people without written permit.	0
2a19	No engaging in business, sale or display of goods or wares without written permit.	0
2a20	No commercial signs or advertising.	0
2a21	No persons (unless authorized by law, license, or permit) shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. No target shooting.	0
2a22	No hunting, shooting, or trapping animals except at designated times and areas.	0
2a23	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers, DCR Rangers, or persons in charge or of Federal or Commonwealth wardens or enforcement officers.	61
2a24	Any part of the watershed lands may be closed for the public access at any time to protect the lands and waters.	28
2a25	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed property.	2
<b><i>Special Regulations for Quabbin</i></b>		
2b1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore in areas designated by the Commission or its designee. A valid state fishing or sporting license is required by any person renting or launching a boat at any commission facility subject to 313 CMR 11.09. Reasonable fees for the use of boats, for rental of outboard motors for fishing purposes, or use of Commission facilities including parking and boat ramps, may be charged by the Commission.	13
2b2	Persons permitted to fish from boats shall at all times be responsible for the sanitary conditions of the boat. Persons under 16 years of age must be accompanied by a person possessing a valid fishing license in order to boat on Quabbin Reservoir.	0
2b3	Only boats of a minimum length of 12 feet, and of a type considered safe by the Commission representative in charge, shall be used. No inboard motors, collapsible boats, sailboats, pontoon boats, square stern canoes, or similar craft will be permitted in the water except in areas designated for boating by the Commission or its designee. Outboard	0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
	motors shall have a rating of not more than ½ the BIA or OBC rated horsepower for the boat and shall not exceed 20 horsepower, except that outboard motors for Commission boats less than 14 feet six inches shall not exceed 10 horsepower. Boats less than 14 feet shall be limited to 3 occupants, and boats of that length and in excess thereof may be licensed to carry 4 occupants. No boats shall carry more than 4 occupants. Canoes and Jon boats of a minimum of 12 feet, and a type considered safe by the Commission representative in charge, shall be used only in areas designated for boating by the Commission on Pottapaug Pond above the regulating dam and at Gate 31 above the regulating dam. Canoes less than 16 feet and Jon boats less than 14 feet six inches in length will be limited to 2 occupants, and canoes and Jon boats in excess thereof may be licensed to carry 3 occupants. All boats must be in compliance with current Commonwealth Boating Laws. All boats must be clean and contain no refuse of any kind. Commission personnel shall have the right to inspect all private boats launched at Commonwealth facilities and may deny access in order to protect water quality or safety of occupants. Chock blocks must be used on vehicles when removing boats from the reservoir.	
2b4	No person shall operate a motor boat at a speed other than responsible and proper or in such a manner as to annoy or endanger the occupants of other boats.	0
2b5	All privately owned boats, motors and other equipment must be removed from the property of the Commission each day.	0
2b6	Boats shall not leave the mooring areas before dawn and must at the time posted at each mooring area. The beaching of boats at any point except at the designated mooring and landing areas is strictly prohibited except in cases of extreme emergency.	0
2b7	Any violation of 350 CMR 11.09 can result in loss of fishing privileges for not less than one year	0
<b><i>Special Regulations for Ware River</i></b>		
2c1	WRW Fishing Designated Areas	2
2c2	WRW PWR Boats/PWR Canoes Prohibited	0
2c3	WRW Boat Motor Restrictions	0
2c4	WRW Revocation of Fishing License	0
<b>TOTAL VIOLATIONS</b>		<b>221</b>



# Summary of Ware River Watershed Ranger Interactions

## Final Report FY23

Visitor Contacts: 8,238

Total Violations: 518

Parking Tickets: 5

Law Enforcement Calls: 0

Ban Letters: 0

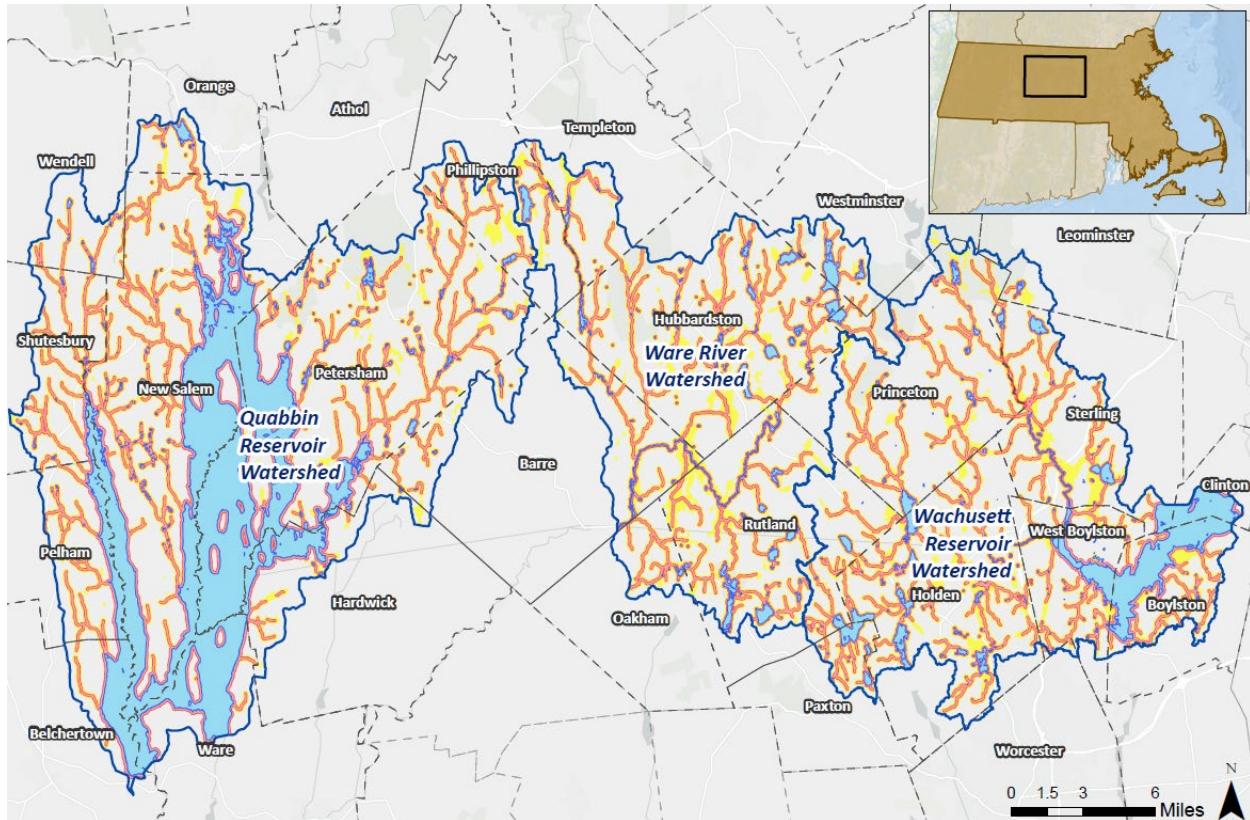
313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
1a	No Taking/Diverting Water.	0
1b1	No construction, filling, dredging, altering land w/out provisions to prevent erosion.	1
1b2	No construction, establishing, maintaining agricultural facilities or animal manure without adequate provision to prevent manure/other pollutants from entering Waters of Watershed System.	0
1b3	No engaging in any other activity that could degrade water quality.	4
1c	No person's property condition should result in discharge of any Pollutants into waters of Watershed system.	0
1d	Records of board of health or health agent concerning Watershed open to inspection by DCR/DEP.	0
1e	Person's causing incident/situation threatening pollutants to watershed shall notify DCR/DEP.	0
2a1	Entrance/Exit only through gates or designated areas.	1
2a2	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset (with permitted night fishing exception).	0
2a3	No powered boats except in designated areas.	0
2a4	No acts which may pollute the water system. No litter thrown or left. Must use sanitary facilities.	85
2a5	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders, or other material. No building or constructing any object or structure on property.	53
2a6	No cooking or fires.	32
2a7	No wading or swimming in reservoir except wading while using boots to launch boats in designated BLAs.	6
2a8	No wading or swimming in Tributary or Surface Waters, except in designated areas.	133
2a9	No organized sport activities except by written permission.	0
2a10	DCR/DWSP and employees are not responsible for damage to property, injury, or loss of life sustained by fishermen while using the reservoirs within the watershed system	0
2a11	Breach of peace, profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	25

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
2a12	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	92
2a13	No animals, except for horses and dogs at Ware River designated areas.	27
2a14	Bicycles, skis and other non motorized transportation permitted in designated areas only.	0
2a15	No person shall bring land or cause to descend any aircraft within the Watershed except in an emergency.	8
2a16	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0
2a17	No lotteries, raffles, gambling or games of chance. No possession of machinery, instruments or equipment for the former.	0
2a18	No groups of more than 25 people without written permit.	0
2a19	No engaging in business, sale or display of goods or wares without written permit.	0
2a20	No commercial signs or advertising.	1
2a21	No persons (unless authorized by law, license, or permit) shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. No target shooting.	25
2a22	No hunting, shooting, or trapping animals except at designated times and areas.	0
2a23	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers, DCR Rangers, or persons in charge or of Federal or Commonwealth wardens or enforcement officers.	6
2a24	Any part of the watershed lands may be closed for the public access at any time to protect the lands and waters.	1
2a25	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed property.	5
<b><i>Special Regulations for Quabbin</i></b>		
2b1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore in areas designated by the Commission or its designee. A valid state fishing or sporting license is required by any person renting or launching a boat at any commission facility subject to 313 CMR 11.09. Reasonable fees for the use of boats, for rental of outboard motors for fishing purposes, or use of Commission facilities including parking and boat ramps, may be charged by the Commission.	7
2b2	Persons permitted to fish from boats shall at all times be responsible for the sanitary conditions of the boat. Persons under 16 years of age must be accompanied by a person possessing a valid fishing license in order to boat on Quabbin Reservoir.	0
2b3	Only boats of a minimum length of 12 feet, and of a type considered safe by the Commission representative in charge, shall be used. No inboard motors, collapsible boats, sailboats, pontoon boats, square stern canoes, or similar craft will be permitted in the water except in areas designated for boating by the Commission or its designee. Outboard	1

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
	motors shall have a rating of not more than ½ the BIA or OBC rated horsepower for the boat and shall not exceed 20 horsepower, except that outboard motors for Commission boats less than 14 feet six inches shall not exceed 10 horsepower. Boats less than 14 feet shall be limited to 3 occupants, and boats of that length and in excess thereof may be licensed to carry 4 occupants. No boats shall carry more than 4 occupants. Canoes and Jon boats of a minimum of 12 feet, and a type considered safe by the Commission representative in charge, shall be used only in areas designated for boating by the Commission on Pottapaug Pond above the regulating dam and at Gate 31 above the regulating dam. Canoes less than 16 feet and Jon boats less than 14 feet six inches in length will be limited to 2 occupants, and canoes and Jon boats in excess thereof may be licensed to carry 3 occupants. All boats must be in compliance with current Commonwealth Boating Laws. All boats must be clean and contain no refuse of any kind. Commission personnel shall have the right to inspect all private boats launched at Commonwealth facilities and may deny access in order to protect water quality or safety of occupants. Chock blocks must be used on vehicles when removing boats from the reservoir.	
2b4	No person shall operate a motor boat at a speed other than responsible and proper or in such a manner as to annoy or endanger the occupants of other boats.	0
2b5	All privately owned boats, motors and other equipment must be removed from the property of the Commission each day.	3
2b6	Boats shall not leave the mooring areas before dawn and must at the time posted at each mooring area. The beaching of boats at any point except at the designated mooring and landing areas is strictly prohibited except in cases of extreme emergency.	0
2b7	Any violation of 350 CMR 11.09 can result in loss of fishing privileges for not less than one year	0
<b><i>Special Regulations for Ware River</i></b>		
2c1	WRW Fishing Designated Areas	0
2c2	WRW PWR Boats/PWR Canoes Prohibited	0
2c3	WRW Boat Motor Restrictions	2
2c4	WRW Revocation of Fishing License	0
<b>TOTAL VIOLATIONS</b>		<b>518</b>

## Watershed Protection Act Report Fiscal Year 2023

The Watershed Protection Act (313 CMR 11.04) regulates land use within critical areas of the Quabbin Reservoir, Ware River and Wachusett Reservoir watersheds. For more information, go to <http://www.mass.gov/dcr/wspa>



Areas regulated by the Watershed Protection Act shown in red (Primary Protection Zone – 313 CMR 11.04(3)(a)) and yellow (Secondary Protection Zone – 313 CMR 11.04(3)(b)).

**WsPA Decisions Issued:** This table contain any application for which a decision has been issued during FY23 within the Wachusett Reservoir, Quabbin Reservoir, and Ware River watersheds. Details for each watershed are on following pages.

Application Type	# Decisions
Advisory Opinions	38
Determinations	20
Variances Decisions	7
<b>Total</b>	<b>65</b>

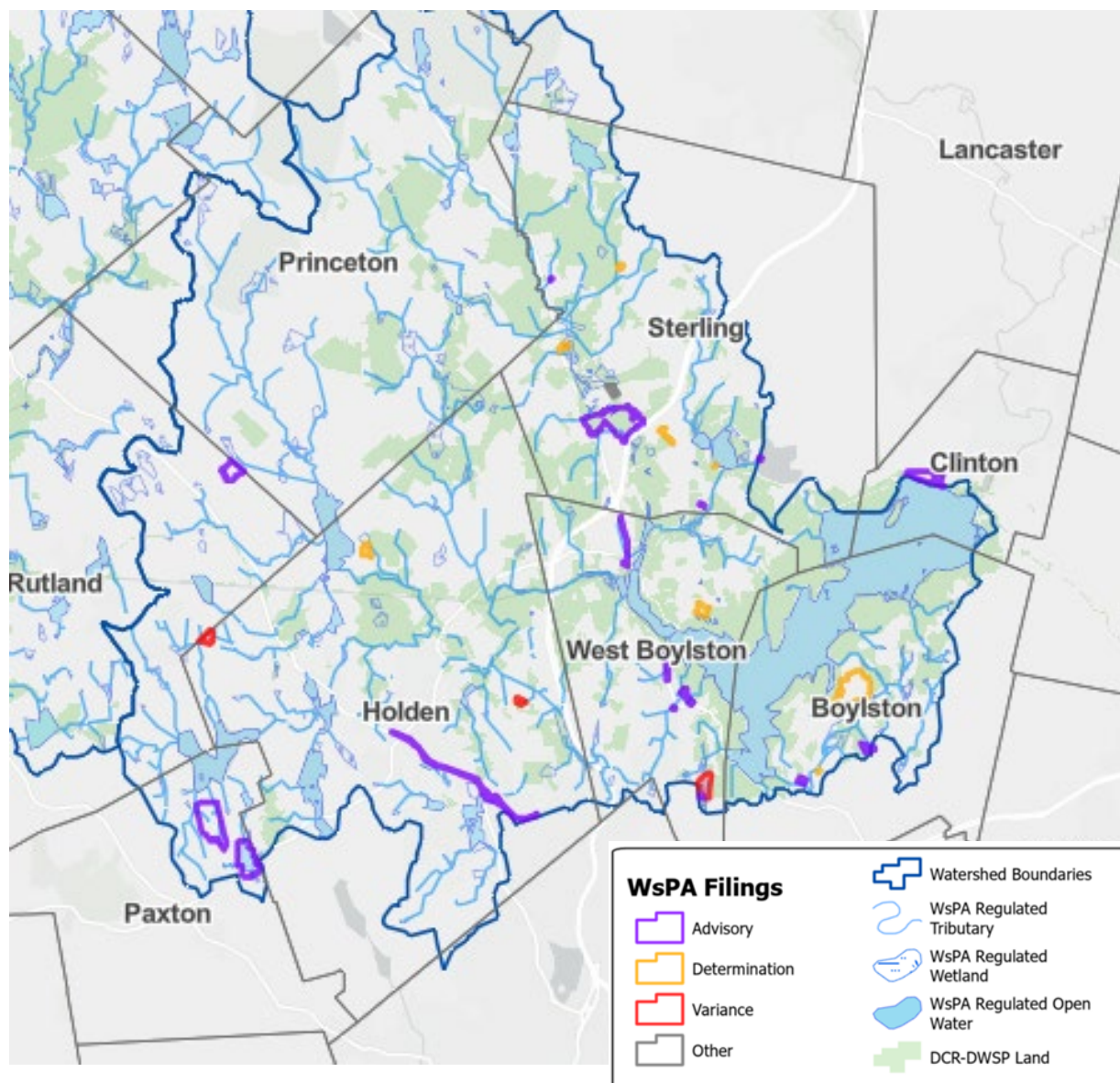


## Watershed: Wachusett

### WsPA Decisions Issued:

This table and accompanying map contain any applications for which a decision has been issued during the specified time period at the top of this report.

Application Type	# Decisions
Advisory Opinions	22
Determinations	9
Variances Decisions	2
<b>Total</b>	<b>33</b>

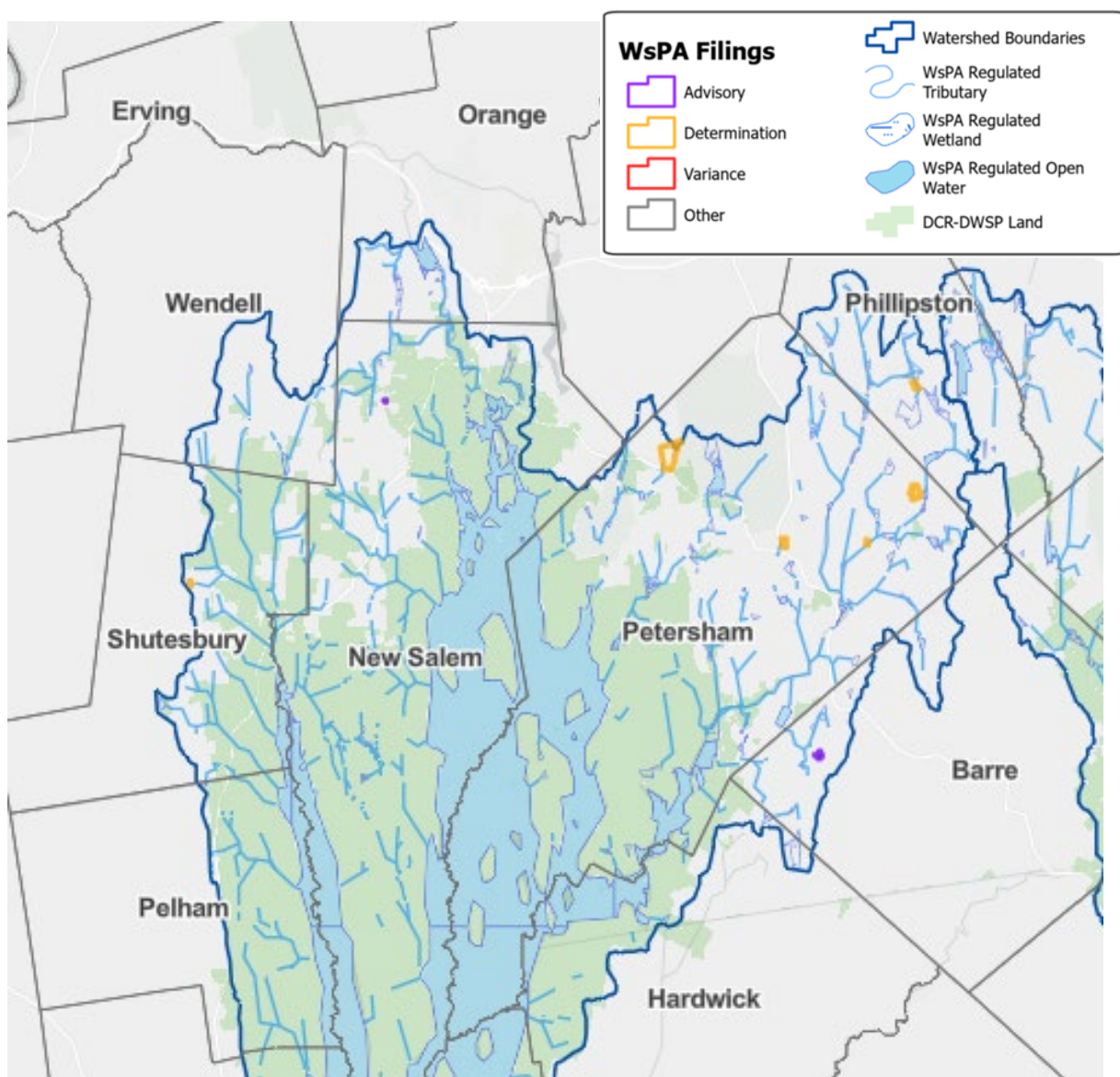


## Watershed: Quabbin

### WsPA Decisions Issued:

This table and accompanying map contain any applications for which a decision has been issued during the specified time period at the top of this report.

Application Type	# Decisions
Advisory Opinions	2
Determinations	6
Variances Decisions	0
<b>Total</b>	<b>8</b>



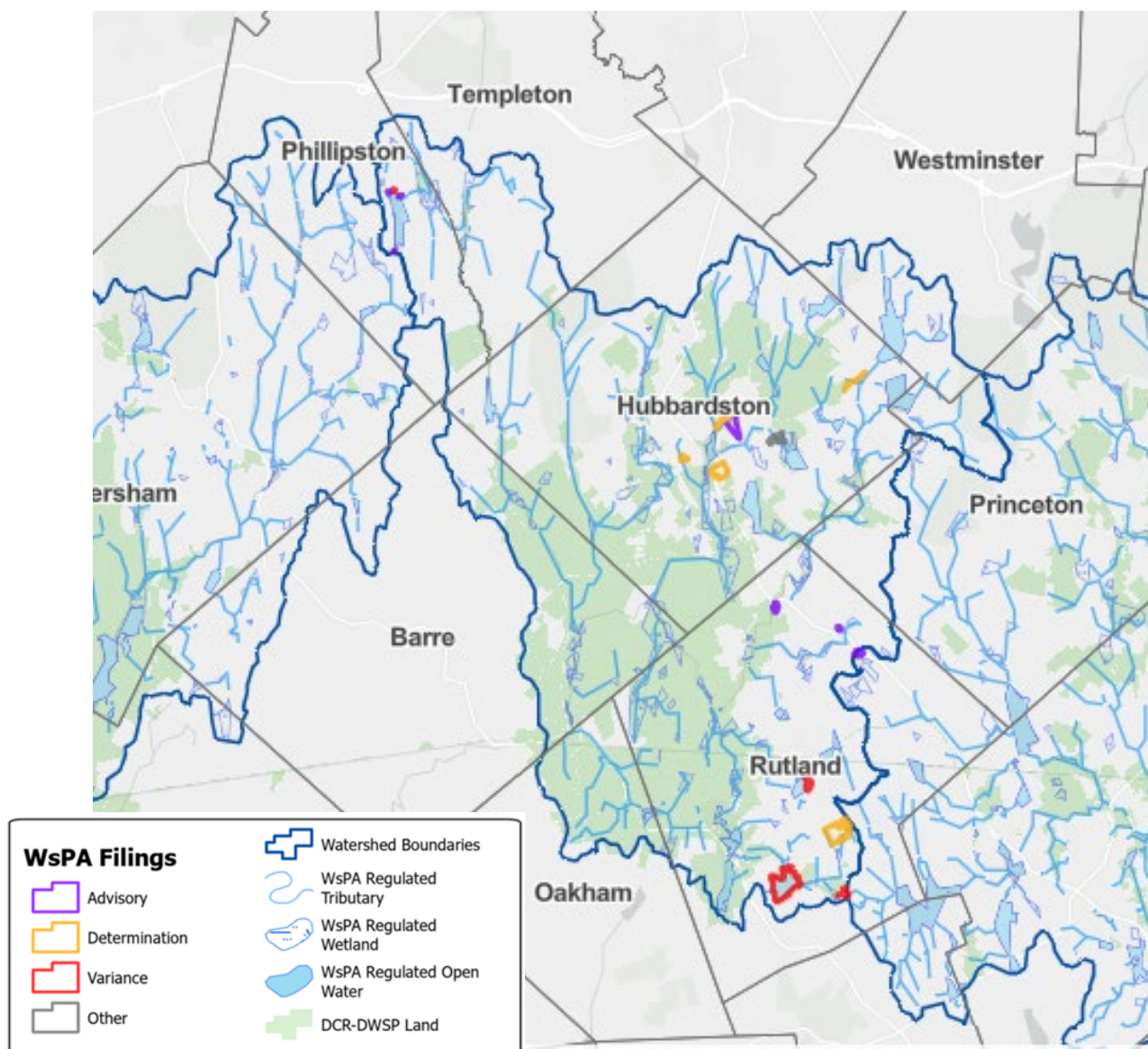


## Watershed: Ware River

### WsPA Decisions Issued:

This table and accompanying map contain any applications for which a decision has been issued during the specified time period at the top of this report.

Application Type	# Decisions
Advisory Opinions	14
Determinations	5
Variances Decisions	5
<b>Total</b>	<b>24</b>





# **FY2023 Final Expenditures**

**DCR Division of Water Supply Protection  
Office of Watershed Management  
FY23 Expenditures**

Object Class	Object	Object Name	FY23 Total Expenditures	FY2023 Budget	Expended vs Budget Variance
AA	A01	Salaries: Inclusive	\$10,140,442.88		
	A06	Stand-By-Pay			
	A07	Shift Differential Pay	\$27,942.19		
	A08	Overtime Pay	\$250,505.15		
	A10	Holiday Pay	\$59,393.23		
	A11	Salaries-Supplemental	\$0.00		
	A12	Sick-Leave Buy Back	\$20,966.65		
	A13	Vacation-In-Lieu	\$61,490.39		
	A14	Stipends, Bonus Pay and Awards	\$2,055.42		
	AA1	Salaries: Supplemental	\$9,831.67		
AA Total			\$10,572,627.58	\$12,138,440.00	(\$1,565,812.42)
BB	B01	Other Out Of State Travel	\$687.07		
	B02	In-State Travel	\$2,400.82		
	B03	Overtime Meals	\$0.00		
	B05	Conference, Training, Registration and Membership Dues	\$3,695.73		
	B10	Exigent Job Related Expenses	\$61.85		
	B11	Employer Refund of Non-Tax Benefits	\$0.00		
	B91	Employee Reimbursement Accounts Payable	\$809.99		
BB Total			\$7,655.46	\$15,000.00	(\$7,344.54)
CC	C01	Contracted Seasonal Facility			
	C04	Contracted Seasonal Employees	\$19,381.82		
CC Total			\$19,381.82	\$30,000.00	(\$10,618.18)
DD	D09	Non-Fringe Benefit Cost Recoupment (payroll tax )	\$4,216,272.84		
	D09	Fringe Benefits Costs Recoupment	\$0.00		
	D15	Workers' Compensation Chargebacks	\$224,063.45		
	D17	Medical Expenses	\$250.00		
	D21	Health Ins Costs of Employ/Leave in Excess of 1 Yr Chgback	\$0.00		
DD Total			\$4,440,586.29	\$5,172,960.00	(\$723,860.07)
EE	E01	Office & Administrative Supplies	\$3,036.11		
	E02	Printing Expenses & Supplies	\$7,930.93		
	E04	Central Reprographics Chargeback	\$0.00		
	E06	Postage	\$0.00		
	E12	Subscriptions, Memberships & Licensing Fees	\$311.00		
	E13	Advertising Expenses	\$659.51		
	E14	Exhibits/Displays	\$1,775.21		
	E15	Water Treatment - Office Water	\$2,169.03		
	E19	Fees, Fines, Licenses, Permits & Chargebacks	\$44,283.85		
	E20	Motor Vehicle Chargeback	\$52,300.50		
	E22	Temp Use Space/Confer-Incidental Includes Reservation Fees	\$0.00		
	E30	Credit card Purchases	\$1,295.25		
	E53	S&J: Non-reportable to claimant, sole payee	\$10,000.00		
	EE2	Conference, Training and Registration Fees	\$150.00		
EE Total			\$123,911.39	\$160,000.00	(\$36,088.61)
FF	F01	Food, Beverages & Preservation	\$0.00		
	F03	Laundry and Cleaning Supplies	\$1,126.61		
	F05	Laboratory Supplies	\$2,904.36		
	F06	Medical & Surgical Supplies	\$2,091.64		
	F09	Clothing & Footwear	\$53,939.33		
	F10	Facility Furnshings	\$584.59		
	F11	Laundry & Cleaning Supplies	\$13,862.21		
	F13	Live Animals & Related Supplies	\$0.00		
	F16	Library and Teaching Supplies and Materials	\$557.15		
	F18	Recreation, Religious & Social Supplies & Materials	\$11,018.86		
	F19	Manufacturing Supply & Materials & Raw Materials	\$6,057.87		
	F21	Navigational & Nautical Supplies	\$11,589.04		
	F24	Motor Vehicle Maintenance and Repair Parts	\$84,760.29		
	F27	Law Enforcement & Security Supplies	\$3,515.38		
FF Total			\$192,007.33	\$250,000.00	(\$57,992.67)
GG	G03	Electricity	\$78,610.03		
	G05	Fuel For Vehicles	\$191,099.69		
	G06	Fuel For Buildings	\$159,708.94		
	G08	Sewage Disposal & Water	\$2,798.44		
	G11	Natural Gas	\$744.39		
	GG1	Natural Gas Supply	\$0.00		
GG Total			\$432,961.49	\$340,000.00	\$92,961.49
HH	H09	Attorneys/Legal Services	\$8,229.98		
	HH1	Financial Services	\$56,486.70		
	HH2	Engineering, Research and Scientific Services	\$175,000.00		
	HH3	Media Design, Editorial, Communication Service	\$0.00		
	HH4	Health and Safety Services	\$0.00		
HH Total			\$239,716.68	\$237,000.00	\$2,716.68

**DCR Division of Water Supply Protection  
Office of Watershed Management  
FY23 Expenditures**

Object Class	Object	Object Name	FY23 Total Expenditures	FY2023 Budget	Expended vs Budget Variance
JJ	JJ2	Auxiliary Services	\$1,416.62		
	J27	Laundry Services	\$12,483.80		
	J25	Laboratory and Pharmaceutical Services	\$2,731.35		
	J44	Surveyors	\$54,488.60		
	J10	Auxiliary Financial Services	\$2,671.21		
	J50	Instructors/Lecturers/training	\$8,228.50		
	JJ1	Legal Support Services	\$13,052.00		
JJ Total			\$95,072.08	\$45,000.00	\$50,072.08
KK	K02	Educational Equipment	\$0.00		
	K03	Programmatic Facility Equipment	\$50,793.68		
	K04	Motorized Vehicle Equipment	\$91,770.25		
	K05	Office Equipment	\$54.84		
	K06	Printing, Photocopying, and Micrographics Equipment	\$0.00		
	K07	Office Furnishings	\$12,687.37		
	K09	Medical Equipment	\$19,630.71		
	K10	Law Enforcement & Security Equipment	\$22,077.69		
	K11	Heavy Equipment	\$608,653.05		
	K12	Television Broadcasting Equipment	\$0.00		
KK Total			\$805,667.59	\$910,000.00	(\$104,332.41)
LL	L11	Heavy Equipment Lease-Purchase	\$0.00		
	L23	Programmatic Facility Equipment Rental or Lease	\$90,214.04		
	L24	Motorized Vehicle Equip. Rental or Lease	\$156.03		
	L25	Office Equipment Rental or Lease	\$2,608.98		
	L26	Printing/Photocopy & Micrographics Equip Rent/Lease	\$14,137.84		
	L31	Heavy Equipment Rental or Lease	\$0.00		
	L42	Educational Equipment Maintenance & Repair	\$1,617.24		
	L44	Motorized Vehicle Equipment Maintenance & Repair	\$33,661.87		
	L45	Office Equipment Maintenance & Repair	\$195.00		
	L46	Print, Photocopying & Micrograph Equipment Maint/Repair	\$2,197.13		
	L50	Law Enforcemnt/Security Equipment Maintenance/Repair	\$0.00		
	L51	Heavy Equipment Maintenance/Repair	\$46,129.88		
	L63	Programmatic Equipment Maintenance & Repair	\$9,949.17		
LL Total			\$200,867.18	\$180,000.00	\$20,867.18
NN	N15	Building/Vertical Structure Construction	\$0.00		
	N16	Major Const/Renovation Bldg & Land Improvements	\$1,405.00		
	N17	Major Building Maintenance and Land Improvements	\$0.00		
	N19	Land Acquisition and Eminent Domain	\$0.00		
	N21	Highway Horizontal/Lateral Constssruction	\$0.00		
	N22	Highway Horizontal/Lateral Maintenance & Improvements	\$82,140.10		
	N23	Highway Maintenance Materials	\$51,451.33		
	N41	State Park & Recreation Facilities Construction	\$543,208.36		
	N50	Non-Major Facility Infrastructure Maintenance and Repair	\$93,094.32		
	N52	Facility Infrastructure Maintenance & Repair Tools & Supplies	\$110,044.37		
	N60	Lawn & Grounds Equipment Maint & Repair	\$21,965.93		
	N61	Lawn and Grounds Equipment	\$84,843.18		
	N63	Rental or Lease of Facility	\$2,734.20		
	N64	Garden Expenses, Tools and Supplies	\$18,110.19		
	N70	Cleaners/Janitors	\$0.00		
	N71	Exterminators/Integrated Pest Management	\$8,897.50		
	N72	Hazardous Waste Removal Services	\$70,672.22		
	N73	Non-Hazardous Waste Removal Services	\$42,050.06		
	N74	Snow Removal and Groundskeeping Services	\$22,387.50		
	N98	Reimbursement for Travel/Other Expense Infrs Projects	\$0.00		
	NN1	Engineering, Research and Scientific Services	\$149,649.08		
NN Total			\$1,302,653.34	\$1,397,000.00	(\$94,346.66)
PP	P01	Grants to Public Entities	\$36,014.50		
PP Total			\$36,014.50	\$100,000.00	(\$63,985.50)
S11		Payments to refund Bond Escrow Agent	\$0.00		\$0.00
SS Total			\$0.00	\$0.00	\$0.00
TT	T04	Payments and Refunds	\$133,560.00		\$1,921.92
TT Total			\$133,560.00	\$150,000.00	(\$16,440.00)
UU	U01	Telecommunications Services Data	\$1,921.92		
	U02	Telecommunications Services - Voice	\$100,535.06		
	U03	Software & Information Technology Licenses (IT)	\$25.16		
	U04	Information Technology (IT) Chargeback	\$44,226.83		
	U05	Information Technology (IT) Professionals	\$0.00		
	U06	Information Technology (IT) Cabling	\$626.41		
	U07	Information Technology (IT) Equipment	\$11,714.87		
	U09	Information Technology (IT) Equip Rental Or Lease	\$0.00		
	U10	Information Tech (IT) Equipment Maintenance & Repair	\$13,358.62		
	U11	Information Technology (IT) Contract Services	\$0.00		
UU Total			\$172,408.87	\$210,000.00	(\$37,591.13)
Grand Total			\$18,775,091.60	\$21,335,400.00	(\$2,560,308.40)

# **FY2023 Final Revenue**

**DCR Division of Water Supply Protection  
Office of Watershed Management  
FY2023 Revenue Summary**

Revenue Budget	Description	July	August	September	October	November	December	Total Collected Revenue Period 1-6
2010/0300/WMP1/DCR/0500	INTERMENT FEES							
2010/0300/WMP1/DCR/3148	FISH & BOATING/DEER HUNT	\$49,160.00	\$31,039.00	\$26,209.00	\$8,277.00	\$508.00	\$25.00	\$115,218.00
2010/0300/WMP1/DCR/4000	RENTS		\$27.30					\$27.30
2010/0300/WMP1/DCR/4500	FORESTRY SALES	\$13,997.50	\$16,997.50	\$11,000.00	\$50,712.50		\$157,792.00	\$250,499.50
2010/0300/WMP1/DCR/6900	MISCELLANEOUS							\$0.00
2010/0300/WMP1/DCR/6901	PRIOR YEAR REFUNDS/ REIMBURSEMENTS							\$0.00
2010/0300/WMP1/DCR/6995	HYDROPOWER/TR LINES	\$145,425.37	\$234,213.74	\$229,170.43	\$122,245.63	\$81,614.57	\$110,031.98	\$922,701.72
<b>TOTALS</b>		<b>\$208,582.87</b>	<b>\$282,277.54</b>	<b>\$266,379.43</b>	<b>\$181,235.13</b>	<b>\$82,122.57</b>	<b>\$267,848.98</b>	<b>\$1,288,446.52</b>

Revenue Budget	Description	January	February	March	April	May	June	Total Collected Revenue Period 7-12	TOTAL REVENUE FY23
2010/0300/WMP1/DCR/0500	INTERMENT FEES					\$985.00			\$985.00
2010/0300/WMP1/DCR/3148	FISH & BOATING/DEER HUNT	\$50.00	\$700.00	\$13,260.00	\$24,837.00	\$38,916.00	\$45,593.00	\$123,356.00	\$238,574.00
2010/0300/WMP1/DCR/4000	RENTS	\$78.50						\$78.50	\$105.80
2010/0300/WMP1/DCR/4500	FORESTRY SALES	\$24,095.00			\$1,000.00		\$59,345.00	\$84,440.00	\$334,939.50
2010/0300/WMP1/DCR/6900	MISCELLANEOUS				\$200.00	\$2,500.00	\$2,500.00	\$5,200.00	\$5,200.00
2010/0300/WMP1/DCR/6901	PRIOR YEAR REFUNDS							\$0.00	\$0.00
2010/0300/WMP1/DCR/6995	HYDROPOWER/TR LINES	\$29,922.19	\$847.40	\$847.32				\$31,616.91	\$954,318.63
<b>TOTALS</b>		<b>\$54,145.69</b>	<b>\$1,547.40</b>	<b>\$14,107.32</b>	<b>\$26,037.00</b>	<b>\$42,401.00</b>	<b>\$107,438.00</b>	<b>\$245,676.41</b>	<b>\$1,534,122.93</b>

**Note: Does not include Special Assessment Revenues-MWRA Assessment & Debt Service Reimbursement.**

Category	FY23 Projected	FY23 Actual
Hydropower/Transmission	\$400,000	\$954,319
Forestry	\$450,000	\$334,940
Fishing & Recreation	\$150,000	\$238,574
Internment/Rents/Misc.	\$20,000	\$6,291
<b>TOTAL</b>	<b>\$1,020,000</b>	<b>\$1,534,123</b>

# **FY2023 Final Land Acquisition**

**DCR Division of Water Supply Protection  
FY2023 Office of Watershed Management Land Acquisitions**

DCR acquired control of 304.1 additional acres of watershed land in FY23. DCR utilized \$719,000 of MWRA funds on land acquisition in FY23 to purchase the control of 239.3 acres of land. There were two gifts made to DWSP of just under 65 acres. Approximately 79% of these lands, 239.3 acres, were fee transactions, while the remaining 32.8 acres were Watershed Preservation Restrictions (WPR).

Owner	Town	File #	Acres	Fee/ WPR	Date Recorded	MWRA/ Gift	Price
<b><i>Quabbin Reservoir and Ware River Watersheds</i></b>							
Keller	Petersham/ Barre	W-001236	70.5	Fee	11/30/2022	MWRA	\$70,000
Zglobicki	Hardwick	W-001242	32.0	Fee	5/16/2023	Gift	\$0
Calkins	Rutland	W-001240	71.6	Fee	6/8/2023	MWRA	\$120,000
Simon	Wendell	W-001237	29.4	Fee	6/9/2023	MWRA	\$94,000
Petrie	Petersham	W-001231	32.8	WPR	6/15/2023	Gift	\$0
<b><i>Sub-Total Quabbin and Ware Watersheds</i></b>			<b>236.2</b>				<b>\$284,000</b>
<b><i>Wachusett Reservoir Watershed</i></b>							
Vaghini Family Limited Partnership	Sterling	W-001239	27.9	Fee	4/20/2023	MWRA	\$275,000
Pioneer Millennium Realty Trust - South	Princeton	W-001250	40.0	Fee	6/26/2023	MWRA	\$160,000
<b><i>Sub-Total Wachusett Watershed</i></b>			<b>67.9</b>				<b>\$435,000</b>
<b>TOTAL FY22 LAND ACQUISITIONS</b>			<b>304.1</b>				<b>719,000</b>

Sub-Total MWRA: 239.3 acres

Sub-Total Gifts: 64.8 acres

Sub-Total Fee Acquisitions 271.3 acres

Sub-Total WPR Acquisitions: 32.8 acres





**FY2023 Final**

**Payments in Lieu of Taxes**

**DCR Division of Water Supply Protection  
Office of Watershed Management**

**FY2023 Payments in Lieu of Taxes (PILOT)**

**The total PILOT paid under MGL c. 59, s. 5G for Fiscal Year 2023 was \$8,479,324.48.**

This figure represents no increase over the FY22 PILOT – the first time in the history of the legislation that there has been no increase. This amount is less than the 1.7% estimated increase to \$8.6 million presented in the FY2022 Work Plan. The main reason for the lower actual total is that all of the towns' tax rates were below the 5% increase utilized to derive the estimate.

FY23 PILOT utilized the valuations set by the Department of Revenue (DOR) in 2017 that are subsequently adjusted every other year, starting in FY20, using DOR's Equalized Valuation method (EQV). EQV percentages are calculated by DOR for every community to determine the full and fair cash value in the municipality. This revaluation process was established by the Municipal Modernization Act, St. 2016, c. 218. FY2023 PILOT utilizes the valuations set by the Department of Revenue (DOR) that were adjusted last fiscal year by EQV; there were no other EQV adjustments in FY23

One acre of land in West Boylston acquired by DCR through 2022 was incorporated in the FY2023 PILOT. This acquisition did not impact the town's PILOT.

The hold harmless clause maintained payment levels in FY23 for every watershed community, totaling \$2,305,499.

DWSP coordinated with DOR's Division of Local Services to make PILOT information available to municipalities and the public through DOR's municipal gateway:  
[https://dlsgateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR\\_PILOT](https://dlsgateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR_PILOT).



Department of Conservation and Recreation  
Division of Water Supply Protection  
Office of Watershed Management  
FY23 Payments in Lieu of Taxes  
February 2023 FINAL

Community	FY22 PILOT	Total 2022 Property Valuation	FY23 EQV	Total FY23 Property Valuation	Assessed Acres	Valuation per Acre	2020-2021 Acquisitions (acres)	Added Valuation for Acquisitions	Total 2023 Property Valuation	FY23 Tax Rate	FY23 Minimum PILOT Due	FY23 PILOT	Hold Harmless	Increase	% Increase
Barre	\$186,168.60	\$7,285,700	1.0000	\$7,285,700	5,420.9	\$1,344	0	\$0	\$7,285,700	\$15.86	\$115,551.20	\$186,168.60	\$70,617	\$0	0.0%
Belchertown	\$257,074.40	\$13,853,400	1.0000	\$13,853,400	3,190.2	\$4,342	0	\$0	\$13,853,400	\$16.32	\$226,087.49	\$257,074.40	\$30,987	\$0	0.0%
Belchertown - Annexed Lands	\$50,625.10	\$1,845,400	1.0000	\$1,845,400	670.0	\$2,754	0	\$0	\$1,845,400	\$16.32	\$30,116.93	\$50,625.10	\$20,508	\$0	0.0%
Berlin	\$61,155.00	\$2,250,000	1.0000	\$2,250,000	46.6	\$48,325	0	\$0	\$2,250,000	\$23.49	\$52,852.50	\$61,155.00	\$8,303	\$0	0.0%
Boylston	\$599,930.50	\$37,874,400	1.0000	\$37,874,400	2,758.2	\$13,732	0	\$0	\$37,874,400	\$14.40	\$545,391.36	\$599,930.50	\$54,539	\$0	0.0%
Clinton	\$205,948.72	\$7,874,300	1.0000	\$7,874,300	469.2	\$16,782	0	\$0	\$7,874,300	\$22.42	\$176,541.81	\$205,948.72	\$29,407	\$0	0.0%
Framingham	\$261,930.91	\$5,974,800	1.0000	\$5,974,800	235.4	\$25,386	0	\$0	\$5,974,800	\$27.27	\$162,932.80	\$261,930.91	\$98,998	\$0	0.0%
Hardwick	\$123,021.36	\$8,368,800	1.0000	\$8,368,800	4,686.9	\$1,786	0	\$0	\$8,368,800	\$13.30	\$111,305.04	\$123,021.36	\$11,716	\$0	0.0%
Hardwick - Annexed Lands	\$941.41	\$42,500	1.0000	\$42,500	150.0	\$283	0	\$0	\$42,500	\$13.30	\$565.25	\$941.41	\$376	\$0	0.0%
Holden	\$919,615.57	\$41,613,100	1.0000	\$41,613,100	3,910.4	\$10,642	0	\$0	\$41,613,100	\$14.99	\$623,780.37	\$919,615.57	\$295,835	\$0	0.0%
Hubbardston	\$380,387.00	\$27,170,500	1.0000	\$27,170,500	8,671.4	\$3,133	0	\$0	\$27,170,500	\$13.03	\$354,031.62	\$380,387.00	\$26,355	\$0	0.0%
Leominster	\$8,688.49	\$208,300	1.0000	\$208,300	42.5	\$4,897	0	\$0	\$208,300	\$15.54	\$3,236.98	\$8,688.49	\$5,452	\$0	0.0%
Ludlow	\$10,524.06	\$239,600	1.0000	\$239,600	50.8	\$4,717	0	\$0	\$239,600	\$19.51	\$4,674.60	\$10,524.06	\$5,849	\$0	0.0%
Marlborough	\$112,802.46	\$2,544,000	1.0000	\$2,544,000	570.4	\$4,460	0	\$0	\$2,544,000	\$20.32	\$51,694.08	\$112,802.46	\$61,108	\$0	0.0%
New Salem	\$520,470.61	\$19,493,800	1.0000	\$19,493,800	22,462.7	\$868	0	\$0	\$19,493,800	\$15.35	\$299,229.83	\$520,470.61	\$221,241	\$0	0.0%
New Salem - Annexed Lands	\$201,603.91	\$6,696,200	1.0000	\$6,696,200	11,580.0	\$578	0	\$0	\$6,696,200	\$15.35	\$102,786.67	\$201,603.91	\$98,817	\$0	0.0%
Northborough	\$103,466.89	\$5,982,100	1.0000	\$5,982,100	360.9	\$16,577	0	\$0	\$5,982,100	\$14.79	\$88,475.26	\$103,466.89	\$14,992	\$0	0.0%
Oakham	\$147,067.60	\$11,362,700	1.0000	\$11,362,700	2,537.1	\$4,479	0	\$0	\$11,362,700	\$11.57	\$131,466.44	\$147,067.60	\$15,601	\$0	0.0%
Orange	\$11,567.60	\$605,000	1.0000	\$605,000	82.8	\$7,307	0	\$0	\$605,000	\$17.96	\$10,865.80	\$11,567.60	\$702	\$0	0.0%
Pelham	\$338,086.39	\$12,009,300	1.0000	\$12,009,300	5,974.0	\$2,010	0	\$0	\$12,009,300	\$17.86	\$214,486.10	\$338,086.39	\$123,600	\$0	0.0%
Pelham - Annexed Lands	\$38,096.61	\$863,800	1.0000	\$863,800	1,080.0	\$800	0	\$0	\$863,800	\$17.86	\$15,427.47	\$38,096.61	\$22,669	\$0	0.0%
Petersham	\$296,721.61	\$11,373,500	1.0000	\$11,373,500	12,230.2	\$930	0	\$0	\$11,373,500	\$15.79	\$179,587.57	\$296,721.61	\$117,134	\$0	0.0%
Petersham - Annexed Lands	\$203,305.78	\$5,676,600	1.0000	\$5,676,600	10,000.0	\$568	0	\$0	\$5,676,600	\$15.79	\$89,633.51	\$203,305.78	\$113,672	\$0	0.0%
Phillipston	\$11,912.74	\$164,200	1.0000	\$164,200	162.8	\$1,009	0	\$0	\$164,200	\$12.84	\$2,108.33	\$11,912.74	\$9,804	\$0	0.0%
Princeton	\$316,538.43	\$20,187,400	1.0000	\$20,187,400	3,179.7	\$6,349	0	\$0	\$20,187,400	\$15.14	\$305,637.24	\$316,538.43	\$10,901	\$0	0.0%
Rutland	\$525,860.45	\$26,659,600	1.0000	\$26,659,600	6,489.0	\$4,108	0	\$0	\$26,659,600	\$13.72	\$365,769.71	\$525,860.45	\$160,091	\$0	0.0%
Shutesbury	\$299,391.54	\$8,145,800	1.0000	\$8,145,800	5,097.2	\$1,598	0	\$0	\$8,145,800	\$18.44	\$150,208.55	\$299,391.54	\$149,183	\$0	0.0%
Southborough	\$317,481.16	\$19,501,300	1.0000	\$19,501,300	1,310.6	\$14,879	0	\$0	\$19,501,300	\$14.76	\$287,839.19	\$317,481.16	\$29,642	\$0	0.0%
Sterling	\$830,606.50	\$54,466,000	1.0000	\$54,466,000	5,218.4	\$10,437	0	\$0	\$54,466,000	\$14.30	\$778,863.80	\$830,606.50	\$51,743	\$0	0.0%
Templeton	\$1,082.18	\$63,000	1.0000	\$63,000	92.1	\$684	0	\$0	\$63,000	\$12.92	\$813.96	\$1,082.18	\$268	\$0	0.0%
Ware	\$193,261.40	\$7,572,300	1.0000	\$7,572,300	4,845.0	\$1,563	0	\$0	\$7,572,300	\$17.26	\$130,697.90	\$193,261.40	\$62,564	\$0	0.0%
Ware - Annexed Lands	\$167,580.62	\$5,099,700	1.0000	\$5,099,700	3,865.0	\$1,319	0	\$0	\$5,099,700	\$17.26	\$88,020.82	\$167,580.62	\$79,560	\$0	0.0%
Wendell	\$33,047.28	\$1,422,000	1.0000	\$1,422,000	654.7	\$2,172	0	\$0	\$1,422,000	\$21.41	\$30,445.02	\$33,047.28	\$2,602	\$0	0.0%
West Boylston	\$683,581.59	\$24,911,600	1.0000	\$24,911,600	2,939.2	\$8,476	1	\$8,476	\$24,920,076	\$15.58	\$388,254.78	\$683,581.59	\$295,327	\$0	0.0%
Westborough	\$59,780.02	\$3,233,100	1.0000	\$3,233,100	190.8	\$16,947	0	\$0	\$3,233,100	\$16.84	\$54,445.40	\$59,780.02	\$5,335	\$0	0.0%
<b>TOTAL</b>	<b>\$8,479,324.48</b>	<b>\$402,633,800</b>					<b>1</b>	<b>\$8,476</b>			<b>\$6,173,825</b>	<b>\$8,479,324.48</b>	<b>\$2,305,499</b>	<b>\$0</b>	<b>0.0%</b>

NOTES:

1. Watershed PILOT, per MGL c. 59 s.5G, is determined by multiplying the DOR valuation by the local commercial tax rate.

Property valuations available at [https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR\\_WaterShedLand](https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR_WaterShedLand) and [https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR\\_WatershedAnnexLand](https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR_WatershedAnnexLand).

Tax rates available at [https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=PropertyTaxInformation.taxratesbyclass.taxratesbyclass\\_main](https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=PropertyTaxInformation.taxratesbyclass.taxratesbyclass_main).

Full PILOT calculations available at [https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR\\_PILOT](https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.DCR_PILOT)

2. The process used by MA Department of Revenue (DOR) for valuing State Owned Land (SOL – which includes DCR Watershed Management ) under MGL c. 58 changed in FY 19. Under this process, DOR determined a base year SOL valuation for each community as of January 1, 2017. After a hearing and appeal process, base year SOL valuations were finalized. Going forward , the base year valuations are adjusted every two years by a percentage equal to the change in a city or town's equalized cash value (EQV). Valuations are also updated annually to include the value of any acquisitions and/or dispositions in a community.

3. "Hold Harmless" is a provision in the legislation that requires any payment never to be less than the previous year's payment. Therefore, if either valuations or tax rates drop, the municipality is guaranteed a consistent payment.

4. Acquisitions added: West Boylston - Kittredge (1 acre).