

PUBLIC WORKS

PUBLIC WORKS COMMISSION

Andrea Solomon, Chair
Sven Weber, Vice Chair
David DeLong
Jef Fasser
James Terry

The Public Works Commission acts as the Town's Road, Water and Sewer Commissioners, and advises the Public Works Director in the Department's efforts to maintain and protect the Town's public works, utility, and solid waste/recycling services. The Commission also advises Town Meeting, the Town Manager, Planning Board and other Town officials and boards on matters that concern Town water and sewer service, drainage, and roads. The Commission is also responsible for setting policy and rate schedules for water, sewer, and solid waste services; for acting as an appeals board for right of way permits and water and sewer regulations and account matters; and for approving minimum standards for the final layout of Town roads.

The Public Works Commission also provides a forum for review of water, sewer and solid waste rates, the annual roads and sidewalk program, public street layout, and water and sewer extensions.

The ongoing activities of the Commission can be found throughout the year on the web at www.concordma.gov

Highlights of the Commission's activities for 2023 included (in chronological order):

- Reviewed and voted to approve the 185 Central Street Water & Sewer service application after an appeal for the proposed accessory garage structure.
- Discussed the 2nd draft of language proposed for the Scenic Roads Rules and Regulations.
- Conducted a briefing on the 2023 and 2024 roads pavement projects.
- Received an update of the town wide culvert and bridge asset management conducted by a third-party engineering firm.
- Received an overview of Town Meeting Warrant calendar.
- Discussed opportunities for improved coordination with other Boards and Committees.
- Received an overview of the Solid Waste and Recycling Program in preparation for future enterprise fund hearing.
- Discussed a detailed memorandum highlighting water and sewer service design and configuration standards which would be deemed acceptable for Accessory Dwelling Units (ADU's) and Accessory structures (AS's).
- Discussed continued regarding potential liaison opportunities with other boards and committees that might have overlapping areas of interest with Public Works Commission.
- Introduction to and overview of the Transportation Advisory Committee's mission.
- Reviewed and approved the National Park Service's request to replace wayfinding signs located on Lexington Road and Old Bedford Street, detailed in a letter to the Concord Historic District.
- Conducted a review and update on the status of Town Meeting articles directly relating to CPW operations.
- Discussed the interest from the Town Manager to the commissioners about being liaisons with other boards and committees in town that might have shared interests relevant to Public Works.
- Conducted a Public Rate Hearing for the FY24, Water/Sewer rates and affirmatively approved. Discussed a 10-year operating plan for better insight on both revenue and expense projections related to the Water & Sewer Enterprise Fund.
- Discussed the Seasonal Water Demand Plan and responsibility of the commission and incorporated the States drought "Level" designation classification language into Concord's Seasonal Water Demand Management Plan.

- Discussion continued on the draft Scenic Roads Regulations.
- Elected Andrea Solomon as Chair and Sven Weber as Vice Chair of the Public Works.
- Conducted Public Hearing and approved FY24 Solid Waste & Recycling rates.
- Received an update on the Warner's Pond improvement project.
- Conducted Public Hearing and approved FY24, Solid Waste & Recycling rates.
- Conducted an update on state-wide drought assessment conditions and related water use restrictions.
- Reviewed and approved recommendations on the Draft Scenic Roads Regulations issued to the Planning Board for the purpose of ensuring Public Works interest were captured as part of the procedural records.
- Authorized a letter of support to the Select Board regarding the Climate Action Committee interest in conducting a Climate Change Vulnerability Assessment.
- Reviewed and approved a request on behalf of the MBTA for the installation of private communication conduits within the Public Right-of-Way.
- Conducted an overview and update on Concord's Stormwater Management Plan, including matters relating to a federally issued Municipal Separate Storm Sewer Systems (MS4) permit, recent efforts made to evaluate and advance the concept of creating a municipal stormwater utility, and review select drainage and infrastructure issues.
- Authorized a letter of support to the Community Preservation Act in support of a steel structure assessment project associated with Sleepy Hollow Cemetery.
- Reviewed CPW's FY25 General Fund Capital Improvement Plan
- Conducted an overview of 2023/2024 Winter Maintenance Program.
- Reviewed the 2023 Roads Program.
- Reviewed CPW's FY25 Enterprise Fund Capital Improvement Plan including the 10-year financial proforma for both Water and Sewer enterprises.
- Reviewed and denied a request for exemption to the one connection per parcel policy detained within the Sewer Rules and Regulations for a subdivision involving the redevelopment of 80X Main Street.
- Discussed a stormwater management framework that might fund identified assessment and infrastructure maintenance and improvement needs.
- Discussed Draft Town Meeting Article language focusing on non-routine articles that would have direct impact CPW operations and services including the creation of a stormwater utility and \$50M borrowing for water treatment upgrades.
- Discussed a request from the Natural Resources Commission for PWC participation in a newly formed Warner's Pond Task Force.

The Public Works Commission and Concord Public Works continue to focus on their joint goal of promoting greater community involvement in Concord Public Works projects and programs. This deliberate strategy has resulted in greater responsiveness to all stakeholders and positive project outcomes. Examples of these efforts include neighborhood on-site meetings for large infrastructure improvement projects, and outreach meetings for the Roads Program. In addition, the Director continues to review the activities of Concord Public Works through the monthly Director's report and the Public Works Commission sets aside time for public comment during each meeting.

CEMETERY COMMITTEE

Mr. Rod Riedel, Chair
Mr. Geoffrey Walton, Vice Chair
Mr. Jerry Soucy
Mr. Brian Davidson
Ms. Priscilla White Sturges

Overview:

Concord cemeteries are an important asset to the Town of Concord. Visitors, historians, and residents use them as a window to the past, pleasant places for solitude and contemplation, as well as a final resting place. Concord cemeteries, include Old Hill Burying Ground (1635), South Burying Ground (1697), and Sleepy Hollow (1855), and total about fifty-five acres. Concord Public Works staff manages the Town's cemeteries, facilitating burials and cemetery upkeep, while also conducting plot purchases and sales. Concord is fortunate to have such diligent public servants in the positions they devotedly fill.

The Concord Cemetery Committee consists of five members responsible for oversight of the operation and maintenance of all Town-owned cemeteries, and for establishing policies and procedures for the cemeteries. In 2023, Ms. Priscilla Sturges joined the Committee as its newest member; the Committee is currently staffed at its designated number of five members.

Cemetery Grounds Maintenance:

Concord Public Works Staff and the Cemetery Supervisor manage the operations and maintenance of the cemetery grounds throughout the year. In 2023, Einstein's Landscaping worked under contract to provide lawn care and seasonal cleanups in Sleepy Hollow Cemetery. Mayer Tree Services, contracted by the Town, conducted tree maintenance throughout the year and removed trees or large branches damaged by storms.

Cemetery Projects:

• Columbarium

The Columbarium Subcommittee formed in 2022 and identified an area in the Knoll Section of Sleepy Hollow Cemetery that was ideal for a columbarium. The Town conducted an engineering review and issued a Request for Proposals ("RFP") for the

design and construction of a columbarium.

In 2023, the Columbarium Subcommittee met with the design team (per the RFP). It concluded that, before proceeding to a final design for the Columbarium, the entire area surrounding the proposed Columbarium site needed to be surveyed and assigned burial lots, paths, etc. Once this effort is completed (anticipated to occur in 2024), the Columbarium Subcommittee will develop a final Columbarium design.

• Stone Structures Restoration & Preservation

In 2023, Concord Public Works (CPW) received a Community Preservation Act (CPA) grant to restore and preserve stone walls and other stone structures in Concord's three cemeteries. CPA funds (\$340,000) were awarded in early July and were matched by Town funding (\$343,000). During the second half of 2023, CPW identified an appropriate contractor; repairs are expected to begin in 2024.

• Metal Structures Repair

In 2023, CPW applied for a Community Preservation Act grant (\$22,500) to evaluate every metal structure in Concord's three cemeteries, and to provide cost estimates for their restoration and repair. The Cemetery Committee anticipates this grant application will be considered for approval at the 2024 Town Meeting.

• Headstone Restoration

In 2022, CPW initially identified thirty-three headstones for restoration and preservation. Sixteen headstones were restored in 2022; eleven headstones were restored in 2023. The remaining six headstones will be restored in the spring of 2024. In 2023 additional headstones were identified that required restoration and preservation; these have been added to the list and will be restored as time and budget permit.

• Mausoleums

In 2020, the Cemetery Committee approved the designation of six lots in Sleepy Hollow cemetery for use as mausoleum sites. In 2023, the Town successfully concluded all necessary reviews and legal/regulatory approvals for the sale of the first mausoleum lot, which is in the Knoll section of Sleepy Hollow Cemetery. The foundation slab for this mausoleum has been poured and its

construction is expected in 2024.

Memorial Day/Veteran's Day Ceremonies:

In May 2023, American flags were installed by volunteers at veterans' graves in all cemeteries in preparation for Memorial Day. In November 2023, the flags were removed by Cemetery staff and retired during the Veterans' Day Observance ceremony.

Statistics:

In 2023, there were 139 interments at Sleepy Hollow Cemetery; thirty-four interments were full burials and 105 were cremations. Lot sales for the year totaled eighty-three; eight of these lots were sold to eligible former residents.

Friends of Sleepy Hollow:

The Friends of Sleepy Hollow Cemetery, Inc. (FOSHC) is a private non-profit organization whose purpose is promoting the preservation, beautification, and appreciation of the historic burial grounds in Concord. The FOSHC is led by President Kevin Plodzik.

In 2023, FOSHC contributed historically appropriate metal "Sleepy Hollow" signage to the metal gate structure at the entrance to The Knoll Gate. FOSHC also contributed a granite bench in honor of Gold Star families that was installed in the Star Circle section of the Sleepy Hollow Cemetery this past autumn. FOSHC also solicited and received a financial grant from the Garden Club of Concord; this grant will provide funding for landscaping at the "Gold Star" bench. The Committee is deeply grateful for the generous and thoughtful contributions the FOSHC has made and continues to make to Sleepy Hollow Cemetery. Andrea Solomon, who is a FOSHC member and former Cemetery Committee member, currently serves as the FOSHC liaison to the Committee.

ADMINISTRATION

Alan H. Cathcart
Director of Public Works

The Concord Public Works Team continues to focus on its principal mission to enhance the quality of life for those living, working or visiting the Town of Concord, and through sound management, communication, leadership, innovation, teamwork and vision provide dependable, high quality, responsive public works and utility services, consistent with community values and at reasonable costs to Concord's citizens, businesses, institutions and visitors for today and into the future.

Protecting the Town's Infrastructure/Providing Essential Services Concord Public Works is comprised of five Divisions. These include two staff Divisions, Administration and Engineering and three line Divisions, Highway & Grounds (which includes Recycling, Solid Waste Management and Cemetery Operations), the Water & Sewer Division and the recently added Facilities Division. The Department is responsible for planning and managing a large segment of the Town's infrastructure.

These assets include Concord's municipal facilities, roads and roadsides; curbs and sidewalks; catch basins, storm drains, culverts and outfalls; traffic islands; guardrails; street signs and traffic signals; public shade trees and park trees; Town parks, common areas, playgrounds, ball fields, and recreation equipment; Town cemeteries; the Town's compost site and closed landfill, including the earth products and snow storage facility; the public water supply including its storage, pumping, and distribution systems; the Town's sewer collection, pumping, and treatment systems; and CPW buildings and equipment.

Delivering key services including water service; sewer service; recycling, curbside trash collection and disposal service; yard waste disposal; and winter snow and ice management along with other storm response and safety services is also a core responsibility of Concord Public Works.

CPW Team, Programs & Organization

Concord Public Works is made up of 62 dedicated individuals with a wealth of experience. It is a team that is passionate about Concord, which takes great pride in their work, and fully understands their stewardship responsibilities. In July of 2023, Concord Public Works assumed the day-to-day management and operational responsibilities of the Facilities Department which had previously resided under the authority of the Town Managers office. The Department was also restructured to allow for the creation of a new position, Environmental Health & Safety Manager. The Department also wished Todd Manchuso, Water & Sewer Division Supervisor, Rich Hathaway, Highway & Grounds Crew Leader, Peter Hardy, Water & Sewer Crew Leader, and Mic Hone, Park & Tree Crew Leader all valued and dedicated, long-standing team members, happy retirement.

Infrastructure Improvements and Initiatives

Once again, the team at Concord Public Works is pleased to provide the Town of Concord with quality and responsive service. The Divisional Reports that follow summarize a series of initiatives and accomplishments in 2023.

ENGINEERING DIVISION

Stephen Dookran, P.E. Town Engineer

Concord Public Works (CPW) Engineering Division is responsible for the planning, design, engineering and construction administration of the Town's roadways, sidewalks, bridges, and stormwater/drainage infrastructure assets. Engineering provides a wide range of professional engineering, construction management, and permitting administration for other CPW divisions as well as for other Town departments and divisions. These responsibilities are carried out by a team led by the Town Engineer and includes the Assistant Town Engineer, the Senior Public Works Engineer, two Public Works Engineers (one of whom serves as the Stormwater Engineer, and the Administrative Assistant. During 2023, the changes in staffing included the resignation of the Senior Public Works Engineer, which was backfilled by one of the Public Works Engineers, thereby creating another vacancy which was filled in October 2023.

Roadway Pavement Improvement Projects

The Roadway Pavement Improvement Program is a comprehensive program that implements various preservation treatments and traditional road reconstruction methods to maintain and improve the Town's 108-mile road network. The Town utilizes a pavement management program, called StreetScan to obtain the network pavement conditions index (PCI) and to prioritize roads for how and when roads get resurfaced to achieve the overall greatest benefit. Engineering consultant, Stantec evaluated the program to confirm accuracy of our road condition data and made recommendations to improve the program in the beginning of 2023. With insufficient funding of the program and rising costs, the PCI of our road network remains in only a fair condition with the average PCI in the mid-sixties.

Final Construction of the 2022 Roadway Improvement Projects

The majority of work under the 2022 Roads Improvement Project was completed in 2022 and the remaining work in 2023. This remaining work included the reconstruction of the Commonwealth Ave Corridor between Church Str and Laws Brook Rd, milling and paving of Bradford St and Winthrop St, fog sealing of Monument St (in bound travel lane only) between house #819 and Buttricks Hill Rd, and the installation of a micro surface on top of asphalt rubber along Annursnac Hill Rd to complete the combined treatment known as cape seal.

Design and Bidding of the 2023 Roadway Pavement Improvement Projects

Implementation of the Roads Pavement Improvement program was separated into three different phases. Phases I and II were designed to maintain and preserve roadways in good condition by deploying lower cost preservation treatments. Phase III targeted roads that were beyond repair and in need of rehabilitation and reconstruction and applied traditional paving methods. Engineering Staff along with assistance from Engineering's design consultant, Stantec developed the design and bidding documents and specifications.

2023 Pavement Management Phase I – Bonded Surface Wearing Course

This portion of the 2023 Roads Pavement

Improvement program was intended and bid for bonded wearing surface course preservation treatment. Bid prices received for incidental items were disproportionately higher than expected. Therefore, this contract was not awarded.

2023 Pavement Management Phase II – Microsurface, Fog Seal, Cold-in-Place Recycling
Phase II incorporated micro surfacing, fog sealing and cold-in-place recycling on various streets in fair to good condition. Bid prices received were also disproportionately higher than expected due to the incidental items needed to complete select treatments. Therefore, only the fog sealing portion of the contract was awarded. This work is anticipated to be completed in the spring of 2024 on Baker Ave, Old Marlboro Rd, Sudbury Rd, Laurel St, Independence Rd, Alcott Rd, and Shadyside Ave. Total length to be fog sealed is approximately 4.25 road miles.

2023 Pavement Management Phase III – Full Depth Reconstruction, Mill and Overlay
Phase III was designed for traditional paving methods consisting of mill and overlay and pavement reclamation on approximately 6 road miles. Work completed in 2023 included milling and overlaying of Old Marlboro Rd (0.7 miles) and Old Pickard Rd (0.6 miles), reclaiming and installation of paving binder course of Minot Rd, Butternut Cir, Fox Ln, Mallard Rd, and Black Duck Rd totaling 0.77 miles of reclaimed roads in 2023. The remaining work in this contract includes milling and overlaying of portions of Main St, Pine St, Central St, Walden St and ORNAC, along with reclaiming and paving of Mattison Dr, Alford Cir, Ayshire Ln, Macmillan Dr and is anticipated to be completed in the spring of 2024. Construction inspections and project management for work completed were performed by Engineering staff.

Road Crack Sealing

As part of our pavement management program, Engineering implemented the annual crack sealing program. In 2023, Engineering designed, prepared, and executed a contract to crack seal 10.6 road miles. All work was completed in the 2023 season.

Commonwealth Avenue Complete Streets Project The third Complete Streets Tier 3 Reconstruction

project - Commonwealth Ave Reconstruction was completed this year. This project replaced all the sidewalks and added two curb bump-outs at crosswalks between the railroad tracks and Beharrell St Ext. The work was extended to Laws Brook Rd intersection using Town funds. Upon receipt of the Complete Streets reimbursement from the State, the Town will select the next Complete Streets project and apply for the next round of funding.



Reconstruction of Commonwealth Avenue that includes Crosswalks, Sidewalks, Drainage infrastructure and Roadway Pavement.

Sidewalks/ADA Compliance/Crosswalks

Curb Ramp Improvements – Reconstruction of sidewalk curb ramps to meet ADA requirements was incorporated into paving projects and the Commonwealth Ave Complete Streets project. The reconstructed curb ramps include 5 ramps on Old Pickard Rd, 8 ramps on Old Marlboro Rd, and 10 ramps on Commonwealth Ave for a total of 23 new curb ramps.

Sidewalks – In addition to the sidewalks reconstructed on Commonwealth Ave, an 80-foot section of sidewalk at 94-96 Sudbury Rd was reconstructed. The cost was shared by that abutter who also agreed to give an easement to locate a portion of the sidewalk on private property to avoid the removal of a street tree.

Crosswalks – Existing painted crosswalks were repainted. No new crosswalks were added in 2023.

Pavement Markings

Engineering, in conjunction with the Community Safety Officer of the Police Department implemented the annual town-wide pavement markings project using two contracts in 2023. The project included the remarking of centerlines, shoulder lines, parking, crosswalks and stop bars. High volume traffic locations were striped twice to maintain an acceptable level of visibility all year.

Main St/Baker Ave/Cottage St Intersection Redesign

The Engineering Division selected a consultant, Jacobs to perform a redesign of the Main St, Baker Ave, and Cottage St intersection as well as the Main St, Crest St, and Old Bridge Rd intersection. The redesign is underway and is addressing alignment problems as well as signal equipment upgrades and location. It is anticipated that easements from abutting properties will be needed for the proper placing of new signal poles.

Main Street/Walden Street Intersection Improvements

The Engineering Division supported the Planning Division in applying and obtaining a Shared Streets and Spaces Grant for \$197,663.75 from MassDOT for a speed reduction project at the Main St/Walden St Intersection. The design and bid documents were prepared by Hayner-Swanson, Inc. The proposed design was presented to the Historic District Commission, the abutting businesses, and the general public in order to get consensus. The construction contract was advertised for bids and a contract was awarded. However, delays pushed the schedule to late fall, a time that could have significant impacts to business activities in the area. The contractor requested that the contract be terminated, and the Town complied. A new contract will be executed for construction in 2024.

Parking Lots

The MBTA parking lot in West Concord is the highest priority of parking lots needing major pavement rehabilitation and capital funds have been appropriated in FY 24 for that work. Engineering staff surveyed the lot and started preparing a design that not only includes resurfacing the lot, but also increasing/maintaining parking spaces, improving storm water quality, improving ADA accessibility, and enhancing traffic flow patterns. Bidding and construction will be scheduled in 2024.

The Engineering Division has undertaken the redesign of the Fairyland Pond parking lot on Walden St with the primary objective of improving drainage. The proposed grading plan aims to redirect runoff towards a proposed water quality facility located on the northern side of the parking lot. This project was bid as part of the 2023 Pavement Management Phase III contract and construction is expected to begin Spring 2024.

Guardrail Projects

Engineering designed, prepared bid document, and contracted a guardrail replacement project that included replacing 1,500 feet of deteriorated guardrail along high traffic roadways. The guardrail replacement was completed and took place along Sudbury Rd (915 ft) and Elm St (580 ft). This contract was extended to replace damaged guardrail end terminals on Lowell Rd, Fitchburg Turnpike and Cambridge Turnpike. Due to the Town's preferred guardrail material (Cor-ten steel) not lasting as long as industry standard galvanized steel, there is a need to increase the rate of guardrail replacement.

Stormwater Management/Drainage Improvements

Currently, the stormwater management program faces a funding shortage, which limits the scope of possible drainage improvements town wide. Drainage improvements are limited to work undertaken by the Town's Road Program. Drainage improvements completed this year through the 2022 and 2023 Roads Pavement Improvement Programs includes:

- Replacement of 8 catch basins
- Repair of 1 gutter inlet
- Installation of 2 new gutter inlets
- Replacement of 1 leaching catch basin
- Installation of 1 leaching catch basin
- Repair of 1 manhole
- Replacement of 1 manhole
- Installation of 3 new manholes
- Replacement of 83 feet of plastic pipe
- Installation of 40 feet of new pipe
- Cleaning of 225 feet of pipe

The Engineering Division has developed plans for stormwater drainage improvements along Walden St, stretching from 584 Walden St. to the

Concord-Carlisle High School driveway loop road, as well as for the Fairyland Pond parking lot. These projects are scheduled for construction during the upcoming spring. Additionally, the Engineering Division has developed design plans for drainage improvements along Lowell Rd from 1195 to 1155 Lowell Rd, Prairie Rd at Cousins Park, Alcott Elementary School playground, and Potter St. However, these projects have been postponed due to project reprioritization and budget constraints.

Stormwater Utility

Due to the lack of a reliable and dedicated source of funding for stormwater management, the Town, through the Engineering Division, selected Weston & Sampson Engineers, Inc. to develop and establish a Stormwater Utility. Working in partnership with Town engineering staff, this engineering firm is in the process of ongoing evaluation regarding the budgetary requirements of the Stormwater Management program that includes the MS4 permit obligations, addressing the maintenance and capital needs of the drainage system and reduction in flooding. This assessment will play a role in shaping the recommended fee and rate structure for the Stormwater Utility. Simultaneously, a warrant article was prepared for adoption of the Enterprise fund at the Town Meeting in April 2024. Public outreach on this effort included a presentation to the Public Works Commission on September 9, 2023, and participation in a well-attended Water Forum hosted by CPW on and the Sustainability Department on December 5, 2023. A preliminary report drafted by the consultant outlining its recommendations is expected to be completed in January 2024.

Town-Wide Culvert and Bridge Assessment

The Engineering Division's consultant, Wright-Pierce started the Town-wide Culvert and Bridge Asset Management Plan in 2022. The goals of this study were to evaluate the 176 culverts and 8 Town-owned bridges, identify any critical needs on these structures, and then to develop a maintenance and repair plan for the short and long terms. The consultant provided their final draft report and recommended maintenance and repair plans, based on presumed funding for the culverts and bridges. CPW Engineering will use this report to recommend the maintenance plan for future projects.

Warner's Pond Dam Inspection

Warner's Pond Dam is categorized as an Intermediate-sized Significant (Class II) hazard potential dam. It underwent an inspection in June to assess its current condition, following the guidelines outlined in 302 CMR 10.04. The dam was determined to be in a satisfactory condition, a rating that remains unchanged from the previous inspection conducted in 2018. The assessment noted a significant overgrowth of woody plants, grass, and brush vegetation which were removed in November, and the report was submitted to the Office of Dam Safety. In addition, the Engineering Division revised the Emergency Action Plan (EAP) for Warners Pond Dam and distributed it to all designated responders as part of the EAP.

Gerow Recreation Area

CPW Engineering was assigned to the management of this project that was stalled since July 2022. Construction by Cole Contracting resumed in September 2023 completing the pavilion building structure, paving of the parking and drive areas, sidewalk repairs at the Commonwealth Ave entrance, and a general cleanup of heavy overgrowth. Final completion including the replanting of trees will be done in 2024. An extension of an engineering contract with Greenman Pederson was executed for inspection and environmental monitoring.



Completed Pavilion Structure

National Pollutant Discharge Elimination System (NPDES) MS4 Permit

The Year-5 Annual Report (July 1, 2022-June 30, 2023) for the MS4 permit was completed and forwarded to both the EPA and MassDEP in September 2023. Below, Engineering has summarized the actions taken by the Town during this reporting year to fulfill these requirements:

1. **Public Participation:** The Town actively engaged the public in the review and implementation of the Stormwater Management Program (SWMP). Additionally, an educational event was organized in local elementary schools to raise awareness about the importance of preventing pollutants from entering our surface waters.
2. **Community Outreach:** The Town proactively communicated with town residents, businesses, and industries, encouraging the adoption of stormwater pollution mitigation methods.
3. **Incident Reporting:** The Town reported a single Sanitary Sewer Overflow within the reporting period, ensuring compliance with reporting protocols.
4. **Personnel Training:** Annual training sessions were conducted for personnel involved in the Stormwater Management Program, specifically focusing on Illicit Discharge Detection and Elimination.
5. **Site Plan Reviews:** A total of 12 site plan reviews on their stormwater impacts and management were carried out for development or redevelopment projects that disturbed one or more acres of land.
6. **Stormwater Site Inspections:** The Town conducted at least 8 stormwater site inspections to monitor compliance.
7. **Phosphorus Reduction:** In line with year-5 requirements for phosphorus reduction, five town-owned properties were identified for the installation of green stormwater infrastructure retrofit opportunities and assessed for cost. Additionally, a demonstration project was identified, which is slated for completion within year-6 of the permit.
8. **Green Stormwater Infrastructure Assessment:** The existing Town-owned green stormwater infrastructure was assessed to determine the amount of phosphorus removed by these

structures before releasing stormwater flows into the Assabet River watershed.

9. **Catch Basin Inspections:** A total of 572 catch basins were inspected, and 404 cubic yards of sediment were removed, contributing to enhanced stormwater quality.
10. **Street Sweeping:** A substantial effort was made with the sweeping of 360 miles of pavement, ensuring that streets remained clean and free from debris that could potentially affect stormwater runoff.

Right of Way/Driveway Permitting

- Engineering staff issued a total of 192 permits - 124 Right-of-Way permits and 68 Driveway permits utilizing the Full Circle platform to accept, review and issue permits. R-O-W permits were typically issued for the installation or repair of utility mains, structures, or service lines or for impacts caused by private development work to infrastructure in the public right-of-way. Driveway permits were typically issued for the reconstruction of or the installation of a new driveway that accessed the public right-of-way. Staff also performed pre-, during- and post-inspections of the work sites for each permit.
- The Public Works Commission (PWC) approved the placement of two wayfinding park signs in the Lexington Rd and Old Bedford Rd public rights of way for the National Park Service. The PWC also approved work by the MBTA to install underground communication lines in the public right of way of Belknap St and Baker Ave.

Private Development Plan Reviews

Staff reviewed a total of fifteen private development projects in 2023, and due to staffing shortages, the Engineering Division requested that some of the larger projects be peer reviewed and Engineering will then evaluate the peer review comments. The projects requiring significant effort were: Dunkin Donuts at 794 Elm St, Concord Middle School at 835 Old Marlboro Rd, Concord Center for the Visual Arts at 37 Lexington Rd, Novo Riverside Commons at 292-294 Baker Ave, and Assabet River Homes located at 406 Old Marlboro Rd. Staff also performed field observations of soil testing for stormwater management.

Town-Requested Engineering Services

- Assisted in the contracting and the provision of inspectional services in the construction of the foundation of the Napoli Mausoleum at the Sleepy Hollow Cemetery.
- Staff collaborated with the GIS Division and Highway & Grounds teams to create a GIS-based inspection report and user map for catch basin cleaning. This aims to streamline catch basin maintenance efforts in compliance with MS4 requirements.
- Engineering continued support on the construction of the Bruce Freeman Rail Trail.
- Engineering responded to numerous requests for public records.
- Provided technical support to Natural Resources in their engineering evaluations of Warner's Pond.
- Engineering continued its review of the revised proposed Scenic Roads regulations, submitted comments, and discussed the subject with the Public Works Commission.

Grants of Location (GOL) for Utilities in Public Ways

Engineering staff performed reviews on plans and documents submitted to the Select Board by utility companies petitioning for approval to locate new utility lines, services, and appurtenances overhead or underground in the public right-of-way. For the completed reviews, Engineering forwarded its comments and conditions of approval to the Select Board prior to the scheduling of the public hearings. The projects are listed below with the status of the GOL. Upon approval, the utility company will file for a right-of-way permit for the installation of the new line. During this year, National Grid delayed several of its petitions because of their unacceptance of conditions placed by the Engineering Division. Both parties worked to re-establish conditions that would be amenable to both CPW and National Grid and the reviews on the petitions resumed.

- Commonwealth of Massachusetts Department of Correction's GOL for 1238 Elm St to 999 Barretts Mill Rd. This petition has been approved by the Select Board.
- Comcast's 92-100 Commonwealth Ave Underground Cable. This GOL hearing was held by the Select Board on 10/11/2023.
- Comcast's 48 Buttricks Hill Rd. This GOL

hearing was held by the Select Board on 10/11/2023.

- Comcast's 495 Monument St. This GOL has been withdrawn by the resident.
- National Grid's 4 - 195 Thoreau St GOL request.
- National Grid's 150 Lexington Rd GOL request.
- National Grid's Main St GOL request from Edgewood Rd to Winslow St.
- National Grid's GOL Request for Crescent Rd, Hosmer Rd, Garland Rd, Wilson Rd, Nashoba Rd.
- National Grid's 398 Simon Willard Rd GOL request.
- National Grid's Lowell Rd GOL – Withdrawn by National Grid.
- National Grid's Davis Ct GOL request.

Concord-Carlisle High School Access Road

Upon request by the School Department, Engineering staff managed the design and construction of the Concord-Carlisle High School driveway loop road improvements. A preliminary design performed by the Engineering Division was passed on to Hayner-Swanson, Inc. for final design plans and bidding documents. The project included pavement reclamation, lighting and sidewalk upgrades, curb installations, ADA ramp updates, and drainage improvements. A portion of the site was an Activity and Use Limitation (AUL) area designated by MassDEP, necessitating soil disposal and worker safety precautions. Engineering staff also worked with the Beede Center for entrance improvements, providing design plans and cost estimates. Construction began in early July, with major work completed before the new school year in late August.

Surveys

- Engineering staff conducted existing conditions survey of the parcel located at 12 Main St, assisting Concord's 250 Permanent Memorial Committee and their design consultant in selecting a site for a future monument. The survey captured surrounding features, including topography, existing utilities, monuments, trees, and critical access points/routes.
- An existing condition survey of the MBTA lot was performed by Engineering staff in preparation for the design and reconstruction of the parking lot.
- Various surveys were conducted to determine if

trees that require removal are located inside the Town's Right-of-Way or are inside private property.

Traffic Management Group

Engineering staff is an integral part of the Traffic Management Group (TMG), made up of representatives from the Concord Police Department, Planning Department, CPW Highway and Grounds Division, and CPW Engineering Division that manages resident traffic related concerns and requests within in the Town's public rights of way. Engineering's role in the TMG is to provide technical recommendations related to engineering standards and practices. Some of the more significant items that was performed by the TMG this year were the recommendations to the Select Board to make changes to the "Traffic, Parking and Pedestrian Rules & Regulations" regarding parking at the Stow St parking lot, Hubbard St, Monsen Rd, and Seven Star Ln. The TMG has also made many improvements to the Town's roadway signage to make it more consistent with the aforementioned regulations.

Comprehensive Transportation Study

Under the management of the Planning Division, Stantec Consulting Services started work on this study in August. Project management was temporarily assigned to CPW Engineering because of a temporary staffing situation in Planning. The first meeting with the general public was held in October and a summary of stakeholder input was prepared. A town-wide survey on mobility needs and patterns was conducted through December 8, 2023. The study will continue in 2024.

Grant Applications

- Engineering staff along with engineering consultant Wright Pierce, prepared and submitted a Massachusetts Culvert Replacement Municipal Assistance grant application for the replacement of Spencer Brook culvert. This grant was not awarded to the Town.
- Design and technical support were provided by Engineering staff to DPLM for the submission of the Massworks grant for proposed improvements to the Kenny Dunn Square intersection.

MassDOT Municipal Paving of Rt 126

The Massachusetts Department of Transportation selected Walden St between Route 2 and the Lincoln town line to be paved in 2024. Under this program, MassDOT aids municipalities in paving qualified local streets. Engineering met with State officials to determine the work needed and an agreement will be developed for Town signature.

HIGHWAY AND GROUNDS

Aaron Miklosko
Highway & Grounds Superintendent

Highway & Grounds Division

The Highway & Grounds Division of Concord Public Works maintains approximately 107 miles of public streets, along with the associated drainage systems consisting of approximately 62 miles of drain lines, 3,630 catch basins, 216 culverts, 1,640 drainage manholes, 431 outfalls, 162 leaching structures, 15 detention basins, 7 bio-retention areas, and 3 dams. The Highway & Grounds Division also maintains 58 miles of sidewalks, 3,055 signs, over 90 vehicles and pieces of equipment and the Town's compost site. The Division is also responsible for 82 acres of public parks and grounds that consist of 50 acres of active recreation areas. The Highway & Grounds Division maintains all 23,000 public shade trees and park trees under the direction of the Town's Tree Warden.

HIGHWAY AND STORMWATER MAINTENANCE

CPW's Highway & Grounds Division completed routine maintenance and improvements to Concord's roads and sidewalks throughout the year.

Concord Public Works crews began preparations for the annual Patriots' Day Parade in early March by sweeping the streets and sidewalks, leveling stone dust sidewalks, and raking out the open space areas along the route.

Street sign maintenance performed by CPW was informed via the Town's Traffic Management Group. This group includes representatives from Highway & Grounds, Engineering, and the Concord Police Department. CPW prioritized improvements affecting sightlines for signage and pedestrian safety.

During the spring season, roadside mowing began. CPW staff targeted trimming in areas where vegetation affected traffic sightlines and pedestrian safety.

The spring town-wide street sweeping program was completed by July 1st this past year. CPW continued to perform additional sweeping of arterial roads again in the fall to remove leaves and other debris from catch basin grates to prevent clogging in the stormwater drainage system and mitigate street flooding during heavy rain events. Staff also continued weekly sweeping in the business districts, including Concord Center, Thoreau Depot, and West Concord.

During the summer months, Concord experienced several extreme rain events that resulted in significant washouts along the roadways. CPW's Highway & Grounds Division worked quickly to repair them with treatments applied in collaboration with the Engineering Division to attempt to mitigate erosion in the future.

Full-depth roadway patching, sidewalk reconstruction and drainage infrastructure repairs continued to be a major priority for the Highway & Grounds Division during the construction season. Many of the repairs were identified during routine inspections that were conducted as part of the catch basin cleaning program. Highway crews cleaned 375 catch basins in 2023, removing over 300 cubic yards of material from the storm drain system. Ongoing monitoring and maintenance of other environmental infrastructure including bio-retention areas, detention basins, drain swales, culvert headwalls and outfalls continued in 2023.

PARKS AND GROUNDS MAINTENANCE PROGRAM

CPW's Highway & Grounds Division continued to provide a high level of maintenance service at the Town's parks, athletic fields, traffic islands and outdoor facilities in 2023.

Routine maintenance of these grounds continues to be a priority for the Highway & Grounds Division with consideration of environmental impacts and sustainable practices. Frequent mowing, ball field preparation and playing field painting was

completed with a goal of providing quality and consistent playing conditions for Concord's youth sports programs and other users within the community. The Highway & Grounds Division also continued to support public-private partnerships with local organizations, such as the West Concord Green Thumbs, to maintain the hanging flower baskets that lined the streets in West Concord and the community gardens.

WINTER MAINTENANCE PROGRAM

Concord's winter maintenance program requires accurate prediction of winter weather events and formulating strategic plans for the deployment of staff and resources. CPW relies on many resources to achieve this, including real-time weather forecasting information provided by the Town's contracted weather service, Precision Weather Forecasting. Concord Public Works also utilizes roadway weather information system technology in five strategic locations in Concord to help provide the real time data necessary to prepare and respond to winter events.

Winter maintenance activities include de-icing, roadway plowing, sidewalk clearing and snow removal from municipal lots and business districts. Concord's winter maintenance program has many components, including an anti-ice pre-treatment in which CPW crews apply a brine solution to designated roadways in Concord when conditions allow. This is an environmentally sustainable technique that prevents snow and ice from bonding to the roadway. This allows for a reduction in salt use before and after a weather event, saving time and money, as well as reducing environmental impacts.

The first significant winter response during the 2022-2023 season occurred on November 15th, 2022, with one inch of snow accumulation. The largest accumulation events were January 22nd, 2023, through January 24th, 2023, and March 13th, 2023. These two events resulted in 4.5 inches of snow accumulation. January's storm was a 29-hour snow operation for the CPW crews, and March's storm lasted 17.5 hours. Throughout the season, CPW responded to 18 winter weather events and the Town saw a total of 27 inches of snow.

CEMETERY OPERATIONS

CPW's Cemetery Division provided burials year-round and properly maintained the Town's three cemeteries. A great deal of pride is taken in the professional and compassionate service that is provided to residents. In 2023 there were 139 interments at Sleepy Hollow Cemetery. 64 of these interments were Concord residents at the time of their death. 34 of the interments were full burials and 105 were cremations. There were also 5 disinterments. Lot sales for the year totaled 83 with 8 of those being sold to eligible former residents.

A Cemetery Specialist was hired to assist a very seasoned Cemetery Supervisor with the duties of caring for the Town's three cemeteries and serving the residents. With assistance from the Highway & Grounds Division, they provided mowing and spring/fall cleanups for the Old Hill Burying Ground and South Burying Place. CPW crews performed all other maintenance for the cemetery including pothole patching, tree and stump removal and water system maintenance.

The use of contracted landscaping services continued for the mowing and seasonal cleanup needs of Sleepy Hollow Cemetery with a renewed contract with Einstein's Solutions, Inc.

PUBLIC SHADE TREE PROGRAM

CPW's Highway & Grounds Division and the Town's Tree Warden continued the implementation of the urban forestry management plan, which was developed by Davey Resource Group. In 2023 the Town planted 102 new trees, ranging from Eastern Redbud to Yellowwood Trees. These included public shade trees, set-back plantings, and Cemetery trees.

CPW tree crews performed routine tree maintenance throughout the public right-of-way in 2023. Trees were trimmed up to a height of 15 feet and over-hanging hazards were removed. The CPW Highway & Grounds Division also responded to several severe storm events, in which trees were damaged or fell into the right of way and required removal.

An Invitation For Bid was issued for Tree Maintenance Support Services in 2023. The contract was awarded to Mayer Tree Services. In addition to

providing cost effective pruning and general forestry maintenance, this contract also provides for storm and emergency responses for time sensitive hazardous tree issues.

COMPOST SITE MANAGEMENT

The Town's compost site at 755 Walden Street was open seasonally Wednesdays and Saturdays for residents to access the site for the disposal of brush, leaves, and invasive species, along with recycling of mattresses. This facility was visited over 19,150 times by residents during the months of April – December. In 2023, a container was added to collect bagged Styrofoam for recycling throughout the season. The paint shed collection depot made it possible for 453 residents to drop off left over or unwanted paint with 105 residents taking advantage of this opportunity for reuse. CPW continued to utilize the compost site for equipment storage and as a staging area for surplus wood debris generated from tree maintenance activities. The compost site was staffed in early January and late December, providing opportunities for residents to recycle Styrofoam, holiday lights and trees after the holidays. During the winter season, the site is used for snow storage. Snow is hauled to this location from parking lots and business district areas following snow plowing events.

FLEET MAINTENANCE PROGRAM

CPW implemented a new fleet maintenance program in 2023 which included the purchase of fleet maintenance software and the hiring of two fleet mechanics. This comprehensive program will aid the department in purchasing and maintaining properly sized and appropriately equipped vehicles and equipment. This program will allow the department to continue to provide efficient and effective delivery of Public Works services for the Town of Concord. In 2023, CPW took delivery of a Ford F550 Heavy Duty Dump Truck for Plowing/De-Icing and a 2023 Caterpillar Loader which were funded with allocations from the FY23 Annual Town Meeting. A 2023 Caterpillar Skid Steer and a 2023 Chevrolet Bolt EV were procured with funding allocated at the FY24 Annual Town Meeting.

RECYCLING AND WASTE

Melissa Simoncini
Environmental Services Program Administrator

DropOff SwapOff

Participants

<i>Year</i>	<i>May</i>	<i>October</i>
2019	930	842
2020	-	425
2021	630	790
2022	685	546
2023	750	562

Curbside Collection, Disposal, and Processing

The municipal curbside collection program provided trash and recycling services to 3,508 households. Subscribers to the municipal curbside collection program set out 820 tons of mixed paper, 618 tons of commingled containers, and 2,129 tons of solid waste for collection.

<i>Year</i>	Subscribers (as of December 31)			
	<i>Number of Subscribers*</i>	<i>Recyclables collected(tons)</i>	<i>Trash collected (tons)</i>	<i>Recycling Rate</i>
2019	3,679	1,577	2,609	38%
2020	3,587	1,693	2,623	38%
2021	3,657	1,592	2,505	38%
2022	3,622	1,462	2,162	40%
2023	3,508	1,439	2,129	40%

Curbside Recycling Rate

Residents using Concord’s municipal curbside collection program recycled 40% of the materials they set at the curb. It does not include the materials collected for recycling at the semi-annual DropOff-SwapOff events, nor the more than 1,000 households that contract with private haulers for the collection of their trash and recyclable materials.

Reuse and Recycling DropOff & SwapOff Events

In 2023, Concord Public Works held DropOff events on Saturday May 20th, with 750 participants and Saturday September 30th, with 562 participants. Pre-registration was required, which assisted with crowd control and traffic flow. These events supported CPW’s goal of reducing the number of items in the Town’s waste stream. Many volunteers helped make these events possible.

Hazardous Products Collection

Subscribers to the curbside collection program receive one free pass per year to the Minuteman Household Hazardous Products Facility in Lexington (for up to 25 lbs. or 25 gallons of hazardous waste). The facility is generally open one

weekend day a month from April – November. 135 residents visited the Minuteman facility during the April-November 2023 events.

Compost Site-755 Walden Street

From April through December 2023, residents made more than 19,150 visits to the 755 Walden Street Compost Site, dropping off leaves, grass clippings and brush. 453 residents dropped off paint and 105 residents picked up paint for reuse at the paint shed on site. Styrofoam block was accepted for recycling throughout the season as well. Styrofoam block, string lights and Christmas Trees were accepted for recycling at the facility after the December holidays.

Landfill Inspection & Reporting

MassDEP requires an annual landfill inspection by a third-party MassDEP-approved inspector for closed landfills in the Commonwealth. Concord Public Works coordinated the annual landfill inspection with Weston & Sampson. The inspection was conducted in November of 2023. The annual landfill

inspection report included a summary of the 2023 monitoring results at the landfill. There were no deviations from applicable performance standards in water or air quality identified.

The Town’s closed landfill post closure monitoring and maintenance requirements in accordance with 310 CMR 19.132, mandate groundwater and landfill gas monitoring. There are nine groundwater wells and twenty-three soil gas probes associated with the 755 Walden Street closed landfill. The former landfill, which has now been put back into productive beneficial reuse with the construction of a utility scale solar facility, received formal closure certification from MassDEP on 10/16/13.

pickup of mattresses at private addresses. This option is in addition to the Town procured container which has been placed at the Compost Site at 755 Walden Street. For information on how to recycle mattresses visit www.concordma.gov/mattress.

Concord residents can recycle their textiles by participating in Concord’s textile recycling program, which is supported by Baystate Textiles and offers donation bins at the following school locations: Alcott Elementary School, Concord/Carlisle High School, Ripley Administration Building, Sanborn Middle School, and Willard Elementary School.

Year	Visits to the Composting Site			
	Leaves & grass	Brush	Paint Drop-off	Paint Pickup
2019	6,871	4,367	410	116
2020	14,257	7,040	Closed	Closed
2021	12,883	6,243	448	143
2022	12,272	5,671	295	253
2023	13,221	6,327	453	105

Keeping Mercury Out of the Environment

During 2023, Concord Public Works collected 5,202 linear feet of fluorescent light bulbs, 1,085 pounds of nickel cadmium, lithium, and lead acid batteries, and 1,842 compact fluorescent bulbs from residents and municipal facilities, for recycling.

Grants

Concord Public Works obtained a Recycling Dividends Program (RDP) grant from MassDEP in the amount of \$8,400. The grant can be utilized to purchase recycling-related equipment including but not limited to curbside recycling bins, compost bins and public space recycling bins.

Textile & Mattress Waste Ban

In 2022, the Commonwealth implemented new regulations for mattresses and textiles which require they be kept out of the solid waste stream and instead recycled or donated for reuse. This is part of the Massachusetts statewide plan to reduce waste by 30% by 2030. In 2023, the Town of Concord engaged with a vendor to facilitate the

WATER AND SEWER

Jeffrey A. Murawski, P.E., Superintendent

In 1974 and 1976, Annual Town Meeting established separate Water and Sewer Enterprise Funds, to ensure that the operation, maintenance and capital investments in Concord’s water and sewer systems would be responsibly managed and financially viable. Expenses incurred for each system are covered by revenues from customers of each respective enterprise. Monthly billing is performed, and dozens of requests for new, replacement and rehabilitated water and sewer services are reviewed for conformance with system standards and policies. The Water & Sewer Division of Concord Public Works (CPW) is responsible for managing the day-to-day operations of drinking water and sanitary sewer infrastructure.

WATER SYSTEM

Concord was provided with legislative authority to establish a public water system in 1872. In 1874, water from Sandy Pond, Lincoln, began flowing through the original network of water mains to Concord Center. Today, the water system has evolved to include six groundwater wells and one surface water source (Nagog Pond), seven water pumping stations, two water treatment facilities, and a high-pressure water main network consisting of over 136 miles of pipe. Two covered storage reservoirs, one located on Annursnac Hill and the other located on Pine Hill in Lincoln provide a total reserve capacity of 7.5 million gallons. There are presently 5,696 accounts receiving

potable water service and fire protection from this supply. This represents approximately 95% of Concord residents and businesses, along with a small number of properties along the Route 2A water main from Nagog Pond that are in the Town of Acton.

Drinking Water Regulations and Policies

Per- and Poly-fluoroalkyl (PFAS) Substances: On March 14, 2023, EPA released a proposed national primary drinking water regulation (NPDWR) for Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS), as well as for four additional PFAS and their mixtures. In the proposed rule, EPA presents updated noncancer toxicity values based on evaluating additional scientific information. These updated values are different from those used to calculate the 2022 Interim Health Advisory levels, which EPA based on the best available science at that time. Note that the Maximum Contaminant Level Goals (MCLGs) in the proposed rule are zero.

The 2022 Interim Health Advisories for PFOA and PFOS will remain the same as EPA finalizes a national primary drinking water regulation for those contaminants, which was anticipated by the end of 2023. The new regulation is anticipated to include both a nonenforceable Maximum Contaminant Level Goal (MCLG) and an enforceable standard, or Maximum Contaminant Level (MCL) or Treatment Technique (TT).

Lead Service Line Inventory – As part of the 2021 Federal Lead and Copper Rule Revisions (LCRR) and more recent updates proposed in 2023 (identified

Compound	Interim Health Advisory Level (2022)	Proposed MCLG or Goal (2023)	Proposed MCL (2023)
PFOA	4 ppt	0 ppt	4 ppt
PFOS	20 ppt	0 ppt	4 ppt
PFNA PFHxS PFBS GenX	n/a	1.0 (unitless Hazard Index)	1.0 (unitless Hazard Index)

“Lead and Copper Rule “Improvements” (LCRI), Concord will be developing a public-facing lead service line (LSL) inventory, a lead service line replacement plan; and increase education and outreach of these efforts prior to October 16, 2024. This past year, the Water Division received a \$168,850 grant from the Drinking Water State Revolving Fund (SRF) to help catalog water service material throughout our system that will lead to the development of a Lead Service Line Replacement Plan (LSLRP). The LSLRP will involve replacement of all remaining lead service lines identified within our system within a five-year period.

To this end, Division staff have partnered with the Concord’s GIS team to update and incorporate all available information for all water services, including material type. Any water services of unknown material entering buildings built prior to the lead ban effective date in 1986 will be considered ‘potentially lead’ until otherwise observed. For more information on lead water services in Concord please visit <https://concordma.gov/lead>

Water Use and Demand Management

In 2023 Concord received its Water Management Act (WMA) Registration statement, renewed once every ten years, affirming our “authorized” water withdrawal cap of 2.10 million gallons per day (MGD) based on an annual daily average. Back In 2001, Concord also received a WMA Permit authorizing an additional average daily withdrawal capped at 0.42 MGD resulting in a total authorized average daily withdrawal volume is 2.52 MGD. In 2022, the MassDEP informed the Town that Concord’s Permit allowance, originally anticipated to be received in 2023, but still not issued, would reduce the permit allowance to 0.10 MGD for a total allowance of 2.2 MGD. This reduction, once imposed, will also be issued with enforceable conservation standards of 65 gallons per day per capita (RGPCD) for residences and a 10% allowance for system losses (primarily attributed to leaks).

In 2023, the total water production required to meet our system demands was 1.78 million gallons per day or 650 million gallons for the year. A peak day demand of 3.13 million gallons was recorded on May 31, 2023. Data required to calculate RGPCD and total system losses (or “unaccounted” for water use) was not available by the time this report was published.

Integrated Water Resource Planning Initiative Partnering with CPW’s Engineering Division, the Town’s Sustainability Director and representatives from the Health Division, Natural Resources Division and Planning Division, the Water Division continued to advance the Town’s integrated water resources planning initiative. Work performed in 2023 included the identification of programmatic gaps in short and long-term service needs and regulatory compliance goals associated with drinking water supply, wastewater treatment and capacity, and stormwater. This effort was captured in a Vulnerability Assessment (Draft) compiled by a team from Kleinfelder and Brown & Caldwell.

The integrated planning process and companion Long Term-Water Supply Study (Draft) will also help inform decisions relating to treatment needs and management strategies required to address Per- and Poly-fluoroalkyl (PFAS) compounds (more auspiciously identified as “forever chemicals”) along with escalating cost estimates for the construction of the Nagog Pond Surface Water Treatment Facility. Investments upwards of \$50 to \$75 million dollars will be needed over the next 10-years to upgrade Concord’s water infrastructure to meet these new water quality standards. Concord also continued to participate in a regional water supply expansion evaluation study lead by the Massachusetts Water Resources Authority (MWRA). These findings were captured in a July 2023 report entitled “MWRA Water System Expansion Evaluation to MetroWest Communities.”

Water Main Leak Detection: New England Water Distribution Services LLC (Windham, NH) performed a water main leak detection survey on approximately 50% of the water distribution system. The acoustic survey targeted water mains, hydrants, select gate valves, and select service lines located in the northern half of the distribution system. One minor leak (~3 gallons/min.) was discovered at a newly installed hydrant located at the end of Mallard Drive. The Division is working with the construction contractor (Gravity Construction) and the hydrant supplier (Kennedy/MH Valve) to repair the leak (scheduled to be repaired in Jan./Feb. 2024).

The Division continues to maintain its commitment to its comprehensive water conservation program that encourages efficient water use via seasonal increasing

block rates, the provision of complimentary residential water saving devices including showerheads, aerators, garden nozzles, rain gages, and toilet fill cycle diverters, as well as customized outreach and assistance to customers who are interested in learning more about indoor and outdoor water savings opportunities. As funds allowed, the Division continued to offer rebates on water-saving toilets and high-efficiency clothes washing machines.

Water Quality and Drinking Water Compliance

In compliance with Federal and State drinking water requirements, staff perform extensive routine water quality monitoring activities for regulatory compliance and treatment optimization at all operating stations and throughout the distribution system. Within Concord's system, over 500 tests are run each year to assess approximately 145 potential contaminants, like bacteria, perchlorate, pesticides, metals, etc.

While routine PFAS sampling continues to demonstrate that Concord's water supply meets existing standards, we are aware that three of our existing sources will likely require advanced treatment once EPA finalizes their regulatory review of these standards and releases new updated standards as detailed above.

Lead Service Line Replacement Program: CPW's Water & Sewer Division continues to eliminate lead service lines in Concord, which account for less than 5% of the active services in Concord. The typical cost for a private contractor to replace a lead service line is \$5,000 or more, per the American Water Works Association (AWWA). To incentivize property owners to replace their lead service lines, the Public Works Commission approved a Lead Service Line Replacement Program (LSLRP) in May 2017. This program enables Division personnel to perform work on private property, subject to certain requirements and restrictions, at a cost not to exceed \$1,500. Participating customers are also offered an interest-free 12-month payment plan. Six lead service lines were replaced in 2023, bringing the total to 53 lead service lines replaced since the program's inception.

Nagog Pond Update

In March of 2023, the Second Phase of the Nagog Pond Intake Project started with equipment mobilization by the General Contractor, D&C Construction. The

project involved lining approximately 1,400 LF of 16-inch diameter of old cast iron pipe. The work suffered significant delays during the cleaning of the existing pipe, as there was more than expected sediment (buildup) in the host pipe and removing this sediment was crucial first step for the lining to work as designed. After many weeks of intense cleaning, the lining work started in the last week in June. Certified Installer, Insituform, was the subcontractor furnishing and installing the Primus Lining System. The lining work was completed in the second week of July. Additional delays occurred during the commissioning of the lined pipe when the contractor encountered pressure problems in the pipe after the lining was completed. To date, the design engineering firm Environmental Partners and the General Contractor D&C are still conducting investigations attempting to determine the cause of the low pressure in the pipe. The current restricted water flow limitation represents a significant problem because of the required seasonal flow from the Nagog Pond water source.

Water Pumping Station Rehabilitation and Upgrades

Division crews continued to perform routine operation and maintenance of the seven water production facilities and related treatment systems which make up our total water supply. In addition to these routine inspection and service activities, capital upgrades are also planned and performed on the millions of dollars of assets including associated mechanical, electrical, plumbing and instrumentation and control systems housed within these facilities. Notable improvements performed within the past year include:

During the Winter of 2022/2023 (beginning December 14th, 2022), Denis L. Maher Co., of Sterling, MA, performed well cleaning, well redevelopment, inspection and assessment of mechanical components of the Deaconess Well Site, Rear Well (Well 10G). Beginning February 14, 2023), Denis L. Maher Co., returned to perform well cleaning, well redevelopment, inspection and assessment of mechanical components of the Robinson Well (06G).

Water Mains

The water distribution system consists of approximately 136 miles of water main ranging in size from 6-inch to 16-inch. A replacement/rehabilitation program has been developed to maintain and improve upon system

service reliability. Improvement/replacement projects are prioritized based on age, condition, and material of pipe. Plans and schedules are further refined with consideration to other public works initiatives such as drainage improvements, annual CPW Roads Program or CMLP underground initiatives. Each year, new mains may also be added to the system to allow for service to new or existing properties where frontage to the municipal water distribution system had not otherwise existed. During 2023, Consultant Engineer Environmental Partners prepared the construction bid documents for the Butternut Circle Watermain Project. The project included the replacement of approximately 4,000 LF of 8-inch ductile iron pipe and 10 new/replacement hydrants in Butternut Circle, Minot Road, Mallard Drive, Black Duck Road, and Fox Lane.

Emergency Water Main Repairs: Based on the age and condition of water main located throughout the water distribution system, it is not uncommon for sections to fail. When they do, they can cause sudden pressure drops or water discoloration that can affect a few customers or larger neighborhoods. Depending on the nature and location of each break, individual water service interruptions can also occur and last for several hours. This past year, the Division performed emergency repairs at the following locations:

- Baker Avenue water main leak, on January 20th, 2023
- College Road water main leak, on February 11th, 2023
- Monument Street water main leak, on April 6th, 2023
- Turning Mill Road water main leak, on April 30th, 2023
- Riverside Avenue water main leak, on July 24th, 2023
- Lowell Road water main leak, on August 16th, 2023
- Ridge Road water main leak, on September 12th, 2023

Annual Water Report Summary Table					
Water Statistics	2023	2022	2021	2020	2019
Miles of Main	136.1	136.1	135.9	135.7	134.7
Hydrants	1,349	1,339	1,336	1,330	1,330
Main Pipe - New (linear feet)	0	1,025	1,002	1,000	500
Main Pipe - Replaced or Rehabilitated (lf)	4,060	0	0	7,932	3,337
Main Breaks	7	3	4	4	4
Number of Service Accounts	5,696	5,690	5,651	5,641	5,634
Total Water Demand (million gal.)	650	696	647	722	664
Daily Average Demand (million gal.)	1.78	1.91	1.8	1.97	1.82
Peak Day Demand (million gal.)	3.13	3.29	3.04	3.85	3.36
Unaccounted for Water (percent)	*	8.5	12.2	9.9	10
Residential per Capital per day (gal.)	*	63.6	62.2	75	60
Annual Precipitation (inches)	66.78	39.73	54.91	42.26	51.18
Mean Annual Precipitation (inches)	42.43	42.19	42.23	42.16	42.15
Residential Rate per Unit (unit = 7.48 gal.)					
Base Rate- Step 1	\$0.08	\$0.07	\$0.07	\$0.06	\$0.06
Conservation Rate – Step 2 (May 1 – Oct. 31)	\$0.16	\$0.14	\$0.14	\$0.12	\$0.12
Conservation Rate – Step 3 (May 1 – Oct. 31)	\$0.20	\$0.18	\$0.17	\$0.06	\$0.15
General Service Rate per Unit of 7.48 gallons					
Step 1 - (<50 Units)	\$0.08	\$0.07	\$0.07	\$0.06	\$0.06
Step 2 - (>50 Units)	\$0.20	\$0.09	\$0.08	\$0.08	\$0.07

SEWER SYSTEM

Concord was provided with legislative authority to create a municipal sewer system in 1894. By early 1900 a small, centralized collection system carried wastewater from Concord center via a network of gravity mains to a collection chamber located at 141 Keyes Road where it was then pumped to a cluster of filter beds located approximately one mile away on fields located adjacent to Great Meadows. The present system consists of approximately 34 miles of collector mains (gravity and low pressure), two pumping stations, six neighborhood lift stations and a 1.2 MGD treatment plant. The present sewer system serves 1,927 customers, or approximately 35% of the community.

Wastewater Regulations and Policies

Sewage Release Notification Regulation: Massachusetts state regulation 314 CMR 16.00 – “Notification Requirements to Promote Public Awareness of Sewage Pollution” became effective on January 21, 2022. The regulation addresses requirements for public notification for “partial treatment” events at treatment facilities and Sanitary Sewer Overflow (SSO) discharge releases that overflow into the surface waters of the Commonwealth. Provisions set forth in regulation 314 CMR 16 became “required and enforceable” as of July 6, 2022.

NPDES Permit: Concord submitted a Notice of Intent (NOI) on December 1st, 2022, to EPA to operate and discharge its wastewater treatment facility (WWTF) under a new medium-size treatment facility National Pollutant Discharge Elimination System (NPDES) General Permit. The USEPA and MassDEP, on February 7th, 2023, and February 28th, 2023, respectively issued to the Town authorization to operate the publicly-owned treatment works (POTW) and to discharge treated effluent to the Concord River under the terms and conditions of Concord’s Medium WWTF General Permit Authorization #MAG590030, effective April 1st, 2023. In 2023, there were no exceedances, and the WWTF was in full compliance with the Permit.

Sewer Pumping Stations

Sewer pumping stations carry wastewater from local networks of gravity flowing pipes (collection system) and then pump this wastewater to a central wastewater treatment facility located off of Bedford Road. The

size and complexity of each pumping station depends upon local land elevations, topography, and the volume of wastewater handled. The Lowell Road and Assabet Sewer Stations are the two largest facilities in Concord, designed to handle flows from the most densely populated and commercialized neighborhoods of West Concord and Concord Center. Six smaller neighborhood lift stations serve less populated areas of Town, with much more modest physical footprints.

In 2023, the Division procured the furnishing and installation of two standby power generators to serve the Park Lane Lift Station (30kW) and the Old Bedford Road Pumping Station (48kW). The bid was awarded to New England Generator, of Pembroke, MA who completed these upgrades thereby reducing risks of potential sewer overflows during localized power interruptions. The new standby generators are powered by natural gas in the event the stations lose electrical grid power.

Division crews continued to perform routine operation and maintenance of the eight operating sewer facilities.

Collection System

The sewer collection system is composed of over 34 miles of gravity and low-pressure force collection main (ranging in size 2-inch to 27-inch diameter) with manholes that allow for access and maintenance of this system. Approximately 50% of Concord’s sewer collection system is made up of clay pipes – much of it dating back to the original sewer system installed over 100 years ago. Concord continues to investigate the condition of this infrastructure and repair or replace it as needed to reduce preventable inflow and infiltration (I/I). Inflow and infiltration refers to stormwater and groundwater that flows into the sanitary wastewater collection system through illicit connections or leaking pipes.

Infiltration and Inflow Program

Inflow & Infiltration Plan:

In accordance with a MassDEP approved Infiltration/Inflow (I/I) Control Plan (2018), Division crews continued to conduct sewer inspection and cleaning using a specialized jetter/vacuum truck, as part of capacity, management, operations, and maintenance (CMOM) best management practices for sewer system operations. In 2023, the total amount of linear feet for sewer main pipe that was cleaned (jetted) by the

Division was approximately 32,573 linear feet.

The 12-month (rolling average) of wastewater flow processed through Concord’s wastewater treatment plant (through the December 2023 reporting period) was 1.15 MGD, just below the 1.2 MGD permitted capacity assigned to this facility. The combined total of the infiltration rate (of groundwater) and the inflow rate (stormwater) into the collection system was estimated at approximately 23.6% of the total sewer flow for the year. This rate falls within acceptable industry limits and well below the USEPA “excessive” rates benchmark value. In 2023, there were no Sanitary Sewer Overflow releases or partial treatment events identified within Concord’s service area.

Wastewater Treatment Plant Operations

Woodard & Curran, Inc. (Portland, ME) continues to operate the Concord Wastewater Treatment Plant (WWTP), located off of Bedford Street. They are operating in the 2nd year of a 4-year service contract.

The CPW – Water & Sewer Division oversees the plant and the services provided by Woodard & Curran to ensure day to day operation and maintenance is performed in a quality manner and according to federal and state regulations. In 2023, the facility and associated equipment ran reliably and in compliance with federal and state issued permits.

In the last few years, the facility has been operating near the permitted limit of 1.2 MGD (million gallons per day) approved by MASSDEP. This increase in flow is the result of the economic development of the Town. We are currently assessing and exploring options on how to increase the permitted capacity. This is usually a long and strenuous process because of the strict regulations set by the EPA and DEP.

Sewer Statistics	2023	2022	2021	2020	2019
Assabet Pumping Station					
Total Pumped (million gallons)	138.45	89.5	Un-	62.38*	88.18
Monthly Average (million gallons)	11.54	7.46	avail-	6.24*	7.35
Daily Average (million gallons)	0.38	0.25	able at	0.20*	0.24
Lowell Road Pumping Station					
Total Pumped (million gallons)	426.23	312.76	Un-	297.27	314.07
Monthly Average (million gallons)	35.52	26.06	avail-	24.77	26.17
Daily Average (million gallons)	1.17	0.86	able at	0.81	0.86
Bedford Street					
Total Pumped (million gallons)	8.57	7.84	7.90	7.41	7.33
Monthly Average (million gallons)	0.71	0.65	0.66	0.62	0.61
Daily Average (million gallons)	0.02	0.02	0.02	0.02	0.02
Collection System					
Number of Service Accounts	1,927	1,913	1,905	1,649	1889
Miles of Sewer Main	34.03	34.03	34.03	34.03	34.03
Main Pipe Inspected (lf.)	0	0	2,342	48,941	48,000
Main Pipe Replaced/Rehabilitated (lf.)	0	0	2,342	12	0
Rate per Unit (unit = 7.48 gallons)	\$0.13	\$0.12	\$0.1212	\$.1188	\$.1165

**Based on 10 months – station flow meter bypassed for rehabilitation project*