

Report for the City Manager

Community Services: Engineering

Date: April 10, 2024



The purpose of this document is to summarize the work the City of Dover Engineering Department from March 1st through March 31, 2024.

The Engineering Division is comprised of a dedicated team of individuals who work collectively to, as the Division’s statement reads, “provide the City of Dover with professional engineering services that ensure long-range comprehensive planning, sound project design, and quality construction management, and to provide technical engineering assistance to other Departments of the City.”

Ken Mavrogeorge, PE – City Engineer
Bill Boulanger – Special Projects Advisor
Amelia DeGrace – Assistant City Engineer (Utilities)
Jillian Semprini, PE – Assistant City Engineer (Transportation)
Eric Sanderson – Facilities Project Manager
Jamie Stevens – Waterfront Construction Manager
Jordan Chambers – Engineering Technician
Courtney Mitchell – Environmental Project Manager

Staff Workload:

In addition to their daily project management responsibilities, the City’s Engineering staff also participate in the following Commissions, Committees, and Boards as either activate members or staff liaisons.

Dover Utilities Commission (Amelia DeGrace): The Dover Utilities Commission (DUC) met on March 18th where abatement, utilities, and finance reports were reviewed. The Commission discussed how to encourage more community involvement in the DUC and the upcoming Public Works Week.

Transportation Advisory Committee (TAC) (Jillian Semprini): TAC did not meet in March. Their next meeting is on April 15th. In March, City Engineer Mavrogeorge and Assistant City Engineer Semprini met with Engineering Staff from Portsmouth, NH to discuss their traffic calming program to look for ideas on how to improve Dover’s traffic calming measures. Discussion topics included how the general public can make requests to the City for the review of traffic issues, equipment that could be deployed to conduct studies, and temporary equipment that can be installed to test traffic calming improvements.

Planning Board (Ken Mavrogeorge): Planning Board met on March 12th to review conditional use permits for an Eversource transmission main upgrade project, the extension of an approval for a subdivision off Tolend Road, and various changes to the Site Plan and Subdivision Regulations.



Municipal Alliance for Adaptive Management (MAAM) (Courtney Mitchell): There was no meeting of the MAAM in March. The next meeting is scheduled for June 6th in Rochester, NH.

Seacoast Stormwater Coalition (SSC) (Courtney Mitchell): The SSC met on March 28th remotely to discuss Developers/Construction Audience Outreach Materials, and Year 6 Requirements and upcoming Infrastructure Funding Workshops happening in April. The next meeting of MAAM is scheduled for April 17th.

TIF Advisory/Cochecho Waterfront Development Committee (CWDAC)/Park Subcommittee (Jamie Stevens): The TIF advisory committee did not meet in March. The CWDAC committee met on Tuesday March 19th. Project updates were provided on the Waterfront, River St Pump Station, and Henry Law and River St reconstruction. The new names of the streets along the waterfront were discussed as the Council voted on March 13th to adopt the recommended names. The temporary closure of River St (Payne St) and the Makem Bridge will begin on April 8th and continue through the summer of 2024.

Great Bay Rowing Club presented an update on their program including the negotiations for a long term lease with the City for a boathouse in the new Nebi Park. The Deputy City Manager also noted that the City’s Waterfront Project Website was being updated more frequently and will continue to be through the remainder of the project.

Customer Service:

In addition to supporting other City Departments and working on Capital Projects, Engineering staff takes Service Calls from the public and responds to them as quickly as they can. The team meets regularly to review open Service Calls and discuss how to respond. The Table below shows the total calls year to date and over the past month.

Time Period	Logged Service Calls	Resolved Service Calls
Year to Date (2024)	35	51
March 2024	12	19

Public Outreach:

The Engineering Team routinely provides updates to Media Services for the various projects that are shared in advance of public meetings, major milestones, or in the event of a service shutdown or temporary road closure. Anyone can sign up for project specific updates using the QR code below.

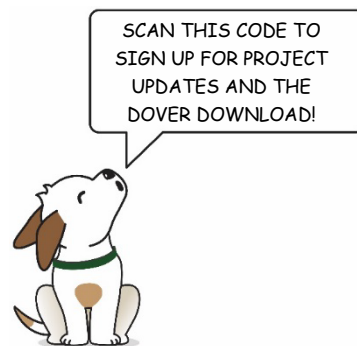


Figure 1: Rover the Community Services Dog and a QR Code to sign up for project specific updates and the Dover Download.

Public Works Week is Coming!

Public Works Week is coming up May 19th through May 25th and Engineering staff is working with Media Services and the other Community Service Division heads to plan activities and media materials that celebrate all the things that make Public Works an important part of all of our daily lives.



Figure 2: Scan this QR code for access to the Water Service Line inventory.

Water Service Line Inventory:

The United States Environmental Protection Agency's (EPA's) revised Lead and Copper Rule (LCRR) requires all community water systems to prepare a service line inventory by October 16, 2024. This revision is in response to the Flint, MI water crisis; inventories will be available to the public and will be used to identify service lines with potential lead contamination.

Led by Assistant City Engineer, Amelia DeGrace, preparation of the inventory has been a true team effort, with the Office of Information Technology (OIT), Community Services Utilities, Water & Sewer Billing, Media Services, and Engineering all pitching in. NHDES awarded the City a \$75k grant to prepare the inventory.

The inventory work to date includes the organizing of over 10,000 meters that the team will need to identify the service materials for. In order to determine the materials of service lines, staff must comb through record drawings, water tie cards, and other City documents. To help staff identify materials for services lines, an online survey has been developed and is currently live through the City's website for the public to submit information on their water service. The survey can be accessed by scanning the QR code in Figure 3. As of April 9, 2024 there have been 510 responses to the survey.

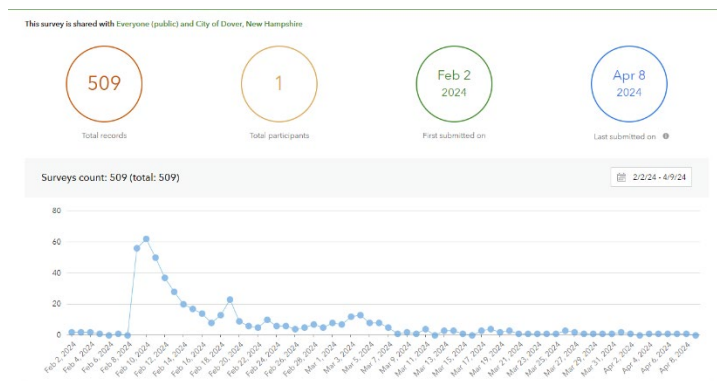


Figure 3: Water Service Line Inventory Participation Results.

Engineering Projects:

As noted above, the Engineering staff is actively supporting a number of projects across the city. The following are some highlights on just some of the active projects.

Project Highlight: Annual Street Paving

The City of Dover owns and maintains about 135 miles of paved roadways, which excludes state-owned roads such as the Spaulding Turnpike, Dover Point Road, Durham Road, Knox Marsh Road and Littleworth Road.

The City of Dover’s Pavement Condition Management Program is a key part of the overall paving program as it serves to track the pavement condition of the City’s roadway system and identifies strategically timed repair techniques to achieve its full value of the initial investment. The City completed a pavement assessment in 2012 (by city staff) and another in 2015 (by a consultant), that were used to guide the management of paved roadways for much of the past decade.

In 2022, the City hired a consultant, Stantec, to update the Pavement Condition Management assessments, which is currently being used to support the decision making for roadway infrastructure projects over the next several budget cycles. It is recommended that all of the City’s roads be re-assessed every three years by a similar process.

Roads to be paved are evaluated annually by the City’s Engineering and Operations staff based on the findings of the City’s pavement management program assessments. Staff use the assessment program findings and knowledge of other City projects to plan out the paving list for the following two years. The projected paving then gets refined based on available funding. Each year, an amount is appropriated for general street improvements through the Capital Improvement Program (CIP) and funded through the city’s operating budget.



Figure 4: Stantec's Road Tester 3000 for rating paved roadways.

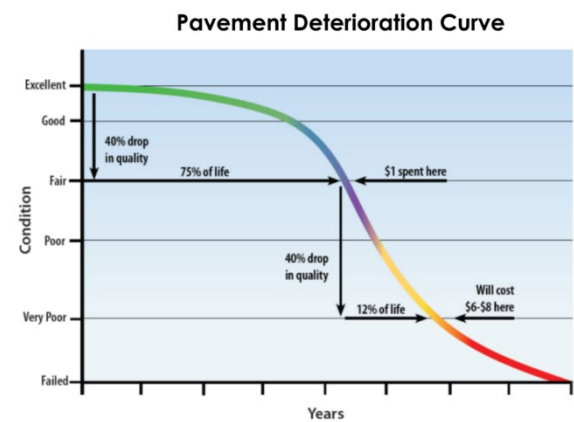


Figure 5: Pavement deterioration curve.

Preliminary Street List and Repair Method

Street	From	To	Avg. Width (ft)	Approx. Length (ft)
INDIAN BROOK DR	TOWN LINE	NEW ROCHESTER RD	120	550
BARRY ST	SMITH WELL RD	END	35	1133
CENTRAL AVE	RR	MILK ST	56	1220
EAST ST	HAM ST	NEW YORK ST	36	465
DURREL ST	SAINT JOHN ST	WINTER ST	27	561
WINTER ST	BROADWAY	END	15	502
SAINT JOHN ST	CHAPEL ST	BROADWAY	30	518
WASHINGTON ST	MINERAL PARK DR	ARCH ST	34	4407
WASHINGTON ST	ARCH ST	CHESTNUT ST	44	2519
WALLACE DR	COLUMBUS AV	END	25	1584
JENNESS ST	CENTRAL AV	STARK AV	28	141
PISCATAQUA RD	TOWN LINE	BACK RIVER ROAD	26	7864
BERKSHIRE LN	TANGLEWOOD DR (W)	TANGLEWOOD DR (E)	30	630
TANGLEWOOD DR	SPRUCE LN (W)	SPRUCE LN (E)	32	1555

Figure 6: Initial list of streets to be paved in 2024.

Roads that are severely degraded and require a complete reconstruction are candidates for a standalone CIP project that often incorporates upgrades of public utilities, such as water, sewer and stormwater drainage. Because these projects are significant and often require debt financing to complete, they are typically planned at least six-years out.

Roads with a structurally sufficient subbase are generally good candidates for pavement maintenance through the Street Paving Program to extend the service life of the road until funding becomes available for a complete street reconstruction through a CIP project.

Other Engineering Projects:

Putding Hill Water Treatment Plant:

The City's consultant and contractor have begun to start up the treatment plan which is on track for substantial completion in early 2024 and final completion by summer 2024. Once online, the plant could provide an additional 1 million gallons of drinkable water per day to City residents, boosting its current capacity back to levels prior to when the aquifer was taken offline.

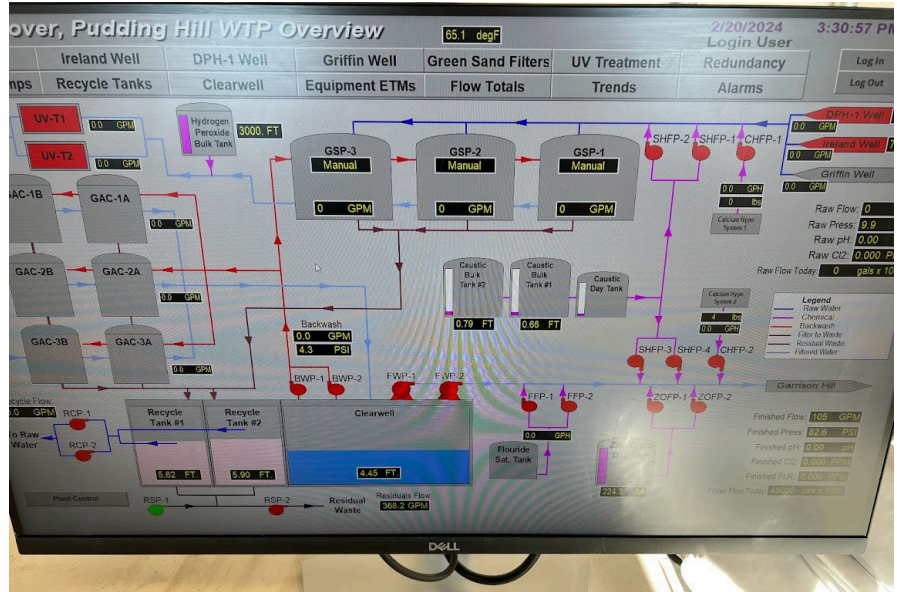


Figure 7: Putding Hill SCADA system.

Waterfront Redevelopment:

The City's contractor, Northeast Earth (NEEM), completed work to satisfy the commitment for the transfer of parcels 1-4 and 1-5 to the private developer, Cathartes. Work included:

- Completion of obstruction removal from parcels 1-4 and 1-5 including the removal of debris remnants of the former WWTP building.
- Partial closure of the 1-4 and 1-5 parcels in accordance with the Remedial Action Plan or RAP. This included survey of the earth at subgrade prior to the



Figure 8: Parcel 1-4 and 1-5 subgrade work at the Waterfront.

- application of delineation warning fabric. Once the fabric was placed, a minimum of two feet of earth was placed over the fabric to "close" the area. Upon reaching the final RAP grade, a post-closure survey was conducted to confirm the minimum amount of fill was placed.
- Bluff over burden removal was performed to make way for the ledge drilling and blasting crews to complete a series of charge detonations. Despite regular significant rain events this work was completed ahead of schedule.

- The blasting work helped NEEM achieve appropriate subgrade and the ability to generate materials for use around the rest of the site. In total, over 100k cubic yards of material have been relocated in this effort and approximately 25,000 tons of ledge material have been crushed and processed.
- The installed sheeting was removed in the Cochecho River to expose the newly constructed granite toe wall recently constructed along the shoreline. Only approximately 100 feet of toe wall remains to be constructed.

Smith Well Road Elevated Tank:

Work continues on the interior of the new elevated storage tank. The new 1-million-gallon tank is being constructed to allow the City to take the Garrison Hill tank offline in 2024/2025 for rehabilitation. The new tank is currently schedule for final completion in mid-2024.

Garrison Hill Water Tank Rehabilitation:

The City's consultant, Underwood Engineers, continues to advance the plans for the rehabilitation of the 4 million gallon Garrison Hill Water Tank. Additional survey work will be performed in the spring of 2024 in anticipation of the project being bid in late 2024. The rehabilitation of the tank will be under construction by spring 2025 once the City's new 1-million-gallon elevated storage tank is tested, filled and brought online. Additional work for the project was requested from the engineering consultant in early 2024 to support the design of the repairs. This work is scheduled to be heard by the Council in April.

Mill Street Pump Station Upgrade:

The City has engaged the engineering firm Woodard & Curran to conduct an assessment on the Mill St Sewer Pump Station to determine what upgrades to the station would look like as the station is reconstructed in 2025. The evaluation builds off a City-wide assessment of the sewer pump stations completed in 2023 by Wright Pierce and will look at consolidating pump stations to reduce the City's annual operating costs. In March, an internal meeting with City Engineering staff was held to review the draft station assessment. During that meeting the various design alternatives were reviewed so they could be sent to the consultant for an



Figure 9: Mill Street Pump Station.

evaluation in the basis of design. The basis of design is expected to be submitted by the end of April 2024 so that a design can be selected and moved forward in 2024. Once a preferred alternative is selected, a recommendation will be presented to the Council.

River St. Pump Station Rehabilitation:

The contractor for the project, Waterline, has mobilized equipment to the pump station on River Street (Payne Street) to start interior demolition. Work is expected to last over 12 months but be finished prior to the completion of the waterfront project. Improvements to the station will include improved odor control measures.

Sidewalk Improvements:

Engineering staff is overseeing the assessment of all the City's sidewalks to help inform future sidewalk reconstruction projects. Green International Affiliates, Inc., the firm selected to complete the assessment is wrapping up their assessment all of the City's public sidewalks and curb ramps in preparation for the development of a summary of their findings and make recommendations for which sidewalks need repairs. This summary of findings will also include a 5-year sidewalk improvements program that the City can execute to improve sidewalks across the City with a focus on priority routes including those close to schools and businesses and those in need of ADA accessibility improvements. The summary of findings will be completed in the spring and a presentation to the City Council is anticipated to outline a plan to improve City sidewalks. To date 109 miles of sidewalks and over 1213 curb ramps have been assessed by the consultants.



Figure 10: Existing failed concrete sidewalk.

Cocheco St Outfall Replacement:

Engineering staff met with the NHDES and Eversource at the project site to discuss the permitting of the replacement outfall and Eversource's soils remediation project.

Dredge Cell Closure:

Dover's dredge cell is located west of Maglaras Park and was constructed in the early 2000s to dispose of material dredged from the Cocheco River in coordination with PSNH and the USACE. The City's consultant, Verdantas is under contract to design the final cap of the dredge cell and a public parking facility/snow dump on top of the cell. It is anticipated that construction on the dredge cell closure will begin in 2025 once excess materials from the waterfront are moved up to areas in and around the dredge cell. As part of the design, the roadway from the waterfront is being extended up to Maglaras Park. Verdantas is in the process of planning additional survey of the dredge cell and Maglaras Park complex to support conceptual designs for the disposal of excess materials generated by the Waterfront Development. Concepts for the work are expected to be prepared in the summer of 2024.

Facilities Projects:

Inspection Services Expansion:

City Engineering staff have been working with the City's design build contractor and architect to finalize the design plans for a new Inspection Services building for the Community Services parcel on Mast Road. The City is saving on design engineering costs by taking on the site civil components of the project themselves and securing competitive bidding for the survey of the site. The City also anticipates completing some of the site work including utilities for the new building to further save on construction costs. In March, the City engaged with SW Cole to conduct borings at the Mast Road facility to aid in the foundation design. Final plans are under development with site work expected to commence in late spring 2024.

Dover Transportation Center:

After 24 years, the Columns supporting the roof over the Dover Transportation Center platform had reached the end of their useful life. The Facility Project Manager worked with staff from Unified Builders Inc. the City's contracted carpentry vendor, to repair rotted sections of the existing columns and sheath each of the 22 columns with PVC planking. This material is used on exterior projects to prevent any rot from occurring. While the material comes from the manufacturer in the color white, it will be painted green to match the rest of the trim on the building. Along with the exterior work, carpenters resized an interior opening to accommodate the installation of a future roll down door, that will be installed in mid-May.



Figure 11: Dover Transportation Center Column Replacement.

Library Expansion/Renovation:

City staff have been working with design staff from SMP Architects, to finalize plans along with final budget projections for the large scale renovation project. The City contracted with S.W. Cole Engineering, to conduct geotechnical analysis of the soils around the library to complete the structural engineering for the future addition. In preparation for the boiler replacement that will begin in early April, staff have been working with Alliance Mechanical to ensure the process is smooth, with minor interruptions to the library staff and patrons. When the project is completed, the library will have 2 high efficiency gas boilers that will be connected to the city's automation controls allowing the system to operate at peak efficiency, The project is projected to be completed by the end of April 2024.

Permits and Licenses:

Contractor Paving Contractor and Utility Contractor Licenses are required to ensure contractors are properly qualified, suitably insured, and have provided the City with an emergency contact information. Licenses must be obtained prior to commencing work within the City of Dover. Licenses in Dover expire on December 31 each calendar year, regardless of when the license was obtained. The fee for the license is not prorated based on when the license is obtained.

Contractor Paving Contractor and Utility Contractor Licenses may be submitted online through the City's online permitting portal, EnerGov. The site can be reached by going to the following website:

https://permits.dover.nh.gov/energov_prod/selfservice#/home

Licenses:

Paving Contractor License

A Paving Contractor License application and fee must be submitted to, and approved by, the Community Services Department prior to paving on the City's roads and within the City's rights-of-way.

Utility Contractor License

A Utility Contractor License application and fee must be submitted to, and approved by, the Community Services Department prior to working on water, sewer, or storm drainage systems owned or controlled by the City of Dover, including system connections located on private property that connect to the public system.

Permit and License Summary for March 2024:

Driveway Permits:	7
Utility Licenses:	3
Paving Licenses:	3
Excavation Permits:	6
Certificate of Occupancy Inspections:	9
Construction:	0
Obstruction Permits:	1

Site Review/Project Oversight Support:

Technical Review Committee:

The City's Engineering staff typically takes between 1 to 4 hours for each review as part of the Technical Review Committee. The review focuses on engineering related design elements such as utilities (water and sewer), stormwater, parking lot layout and pedestrian pathways. To ensure that projects efficiently move through the TRC process, City Engineering staff is available for preapplication meetings with applicants. To schedule a meeting with staff, call 603-516-6450.

Five (5) projects came to TRC in March that required Engineering review:

- 1-3 Webb Place: Construction of a new bank with drive thru.
- 48 Whittier Street: Revised site elements for project approved originally in 2022.
- Quality Way: Light manufacturing development with 34,000 sf of building space.
- Locust Street: 2,400 sf residential building and parking.
- 14 Broadway: Revised site elements for project approved originally in 2021.

Wastewater Permit Review Summary for March 2024:

Sewer Connection Permit:	2
Septic Design Reviews:	1

Construction Oversight:

Engineering Technician, Jordan Chambers, continues to conduct oversight of over 60 private construction projects approved by the Planning Board. Projects that are underway or have been completed include:

- Copley Commons Subdivision (Leathers Ln.)
- Tiny Home Development (Back River Rd.)
- Sophie/Banner Dr Subdivision (Bellamy Rd.)
- Goosetail Dr (757 Central Ave.)
- 725 Central Ave Development (Central Ave and Brick Rd.)
- Medical Office Building (Durham Rd.)
- Northeast Credit Union (Education Way)
- Emerson Ridge (Old Oak St.)



Figure 12: Medical Office Building on Durham Rd.

Preconstruction Kickoff Meetings:

There were no pre-construction kickoff meetings in March.

Annual Street Completion List:

Jordan Chambers worked with Deputy Director Dave Fredrickson to check on the status of the various private subdivisions under construction throughout the City to provide an estimated percent complete to the City Clerk's office by April 1. This review is conducted annually in March.