

Report for the City Manager

Community Services: Engineering

Date: June 10, 2024

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



Engineering

Community Services | Dover, NH

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) meeting was cancelled due to a lack of a quorum.

Transportation Advisory Committee (TAC) (Jillian Semprini): TAC did not meet in May. The next meeting is scheduled for July.

Planning Board (Ken Mavrogeorge): Planning Board met on May 14th and 28th to review applications for a mixed-use development on Broadway, a new cellular tower on Tolend Rd, a lot line adjustment, and a concept for a residential development near Emerald Lane and Tolend Rd.

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

- Project take-aways from Brown and Caldwell (MAAM Consultant) on the Eelgrass Resiliency Project.
- An update on the Eelgrass Resiliency Project next steps and monitoring progress will be provided by PREP.
- Catch Basin Crediting Literature Review provided by UNHSC
- PTAP updates by NHDES/UNHSC
- GB2030 Regional Street Sweeper Project- City of Dover, Jamie Houle

Seacoast Stormwater Coalition (SSC) (Courtney Mitchell): Eleven communities and organizations within the seacoast region were granted awards totaling over \$200,000. The purpose of the grants is for communities to implement projects that increase water quality and build resilience. The workgroups met on May 21 to provide a summary of their projects. Projects range from conducting Natural Resource Inventories, updating Open Space Plans,

creating water resource protection guides, to implementing regulations. The City of Dover presented a current happenings and goals of the Regional Street Sweeping Program.

TIF Advisory/Cocheco Waterfront Development Committee (CWDAC)/Park Subcommittee (Jamie Stevens): The TIF advisory and CWDAC committees did not meet in May.

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
2024 YTD	62	75
May 2024	16	14

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.



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 identifying approximately 10,000 service line locations, which 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 2. As of June 5, 2024 there have been 554 responses to the survey with almost 30 received in the last month.



Figure 3: Scan this QR code to take a brief survey about the Community Services Open House.

Public Works Week Open House:

City Engineer Ken Mavrogeorge and Engineering Technician Jordan Chambers worked the Community Services Open House event on May 18th to kickoff Public Works Week (May 19th through 25th). An estimated 500 visitors attended the event which included free ice cream, souvenir cups, a touch a truck event, and tours of the new water treatment plant at Pudding Hill. The event was deemed a huge success by those in attendance and Community Services staff. Community Services has created an online survey to solicit feedback on the event to help with planning future events. The survey can be accessed through the following link or by scanning the QR Code in Figure 3 with your smart phone.

<https://polco.us/n/res/vote/dover-nh/public-works-open-house-feedback>



Figure 4: City Engineer Ken Mavrogeorge and Director John Storer serve ice cream at the Public Works Week Open House on May 18th.

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 Spotlight: Tree Removal and Capital Projects

Dover's Community Services Engineering Staff understands that residents value the roles that trees perform for our community and know that the removal of trees on Fifth Street and Grove Street is a concern. We also know street reconstruction projects disrupt neighborhoods, but are necessary to improve safety and quality of life for everyone in the community. Throughout all our projects, staff aim to be transparent and keep residents informed about potential disruptions. Ultimately, our staff are tasked with managing capital projects that prioritize the long-term health and stability of Dover's infrastructure, benefiting both the community and the environment.

Here are some reasons why the difficult decision to remove trees has been made and some things that City is doing to offset the loss of vegetation.

Sidewalk Condition and Accessibility:

A goal of any City street reconstruction project is to provide facilities that are accessible for all. Typically, the City aims to provide sidewalks that are ADA compliant and at least five feet wide. In most locations, within the project limits, a vegetated buffer between the sidewalk and roadway is also provided for added pedestrian safety.

Community Services recently obtained a condition assessment of all City-owned sidewalks and pedestrian ramps. Many of the City's sidewalks and curb ramps were found to be below standards set forth in the Americans with Disabilities Act. The City is committed to making improvements to improve accessibility and condition of City-owned sidewalks and pedestrian pathways.

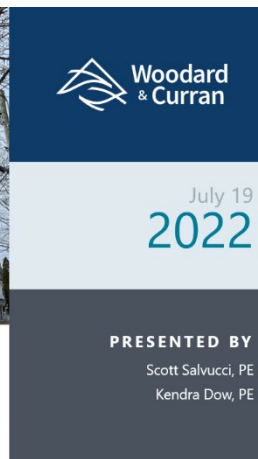


Figure 5: Tree in poor condition on Fifth St.



CITY OF DOVER, NEW HAMPSHIRE

FIFTH & GROVE STREETS RECONSTRUCTION PROJECT



Specifically, within the limits of the Fifth and Grove project, the sidewalks were found to be in poor to fair condition. The vast majority of these sidewalks were not ADA compliant due to severe damage caused by tree roots. The damage caused by the existing tree roots includes uneven pathways and tripping hazards which are not easily remedied.

Figure 6: Presentation from July 2022 public meeting.

Adequate Multi-Modal Access:

Due to the limited right of way and the location of the street trees within the Fifth Street and Grove Street area, tree removal was deemed necessary to provide an adequate and safe travel way, on-street parking, and sidewalks on both sides within the project limits.

As part of the Fifth Street and Grove Street Reconstruction Project, Community Services hosted three public meetings on July 19, 2022, July 10, 2023, and April 30, 2024. These meetings took place at various stages of the design process and all feedback received was considered during the design of roadway improvements. Additionally, public surveys were sent out to solicit feedback on specific topics raised at the public meetings, including the direction of travel on Fifth St and the types of trees that residents would like to see as part of the final restoration. Results from the surveys was presented at subsequent meetings and is available for review with the City.

Selecting the Right Trees:

The surveys conducted for the Fifth Street and Grove Street project included examples of native trees that align with the City of Dover's Central Business District (CBD) Street Tree Plan (which you can find here: [CBD Street Tree Plan](#)).

Prioritizing Existing Trees and Long-Term Benefits

The CBD Street Tree Plan, approved by the Planning Board, focuses on keeping healthy existing trees whenever possible. However, it also acknowledges that sometimes removal is necessary.

The plan, and the Master Plan's Climate Adaptation Chapter, both highlight the importance of street trees as part of an urban forest. These trees provide a range of benefits - from managing stormwater runoff and filtering air pollution to lowering temperatures.

Choosing Wisely for a Challenging Environment

The trees we plant today typically have tap roots that go deeper, promoting better water infiltration compared to trees with shallow, spreading roots. These deeper roots also help protect sidewalks from damage for years to come.

Selecting the right trees is crucial because the downtown environment can be tough on them. Trees face challenges like poor drainage, limited sunlight, car exhaust, animal waste, and potential conflicts with underground infrastructure.

Planting for Success and Beauty

Native Street Tree Replacement Options - Fifth & Grove Street

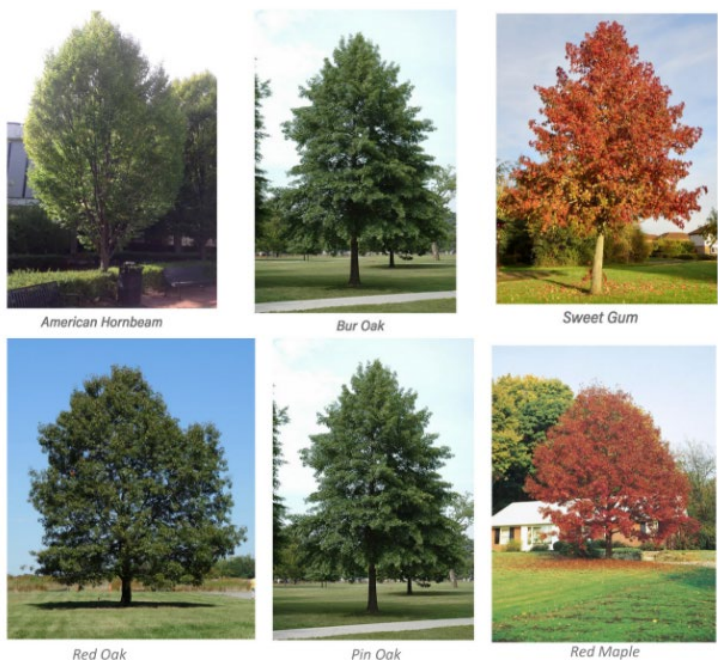


Figure 7: Native Tree Options Presented via Public Survey in October 2022.

By carefully considering these factors, we've chosen tree species that are expected to thrive in the CBD. Our goal is to create a sustainable and visually appealing streetscape that complements the overall project improvements.

Planting More Trees, Growing a Greener Downtown

In addition to the nineteen (19) trees being planted for the Fifth and Grove project, the City is also working to plant an additional 20 street trees in other areas around the CBD this year to replace trees that were dead or in poor condition.

Tree Waiver Process and Owner Notification:

The trees located within the public right-of-way on Fifth Street and Grove Street are technically not owned by the City, and are owned by the property owner who owns the land the tree(s) abut. Therefore, the City was required to conduct a tree assessment for each tree within the project area, notify the property owners of each tree, prior to removal, and compensate them for the tree through the City's Tree Waiver process. The trees within the Fifth Street and Grove Street project limits were assessed by a I.S.A Certified Arborist and an I.S.A. Tree Risk Qualified Arborist.

Our Commitment:

Community Services' Engineering team recognizes that removing mature trees is a loss to the local ecosystem, and are committed to planting new trees as part of this project, and others. Our intent is to plant a new tree in the same general location of where a tree is scheduled for removal.

TREE #	SPECIES	DBH (INCHES)	HEIGHT (FT.)	COND.	LOCATION
1	Sugar Maple	7	15	Poor	6th and Grove
2	Red Maple	9	20	Fair/Good	6th and Grove
3	Sugar Maple	6	15	Fair	6th and Grove
4	Sugar Maple	6.5	15	Good	6th and Grove
5	Red Maple	6.5	15	Good	6th and Grove
6	Silver Maple	47	60	Good	25 Grove St.
7	Red Maple	14	20	Good	4th and 5th
8	Crabapple	7	10	Good	4th and 5th
9	Sugar Maple	15	35	Dead	4th and 5th
10	Red Maple	12	15	Good	4th and 5th
11	Crabapple	7	10	Good	4th and 5th
12	Red Maple	15	25	Good	4th and 5th
13	Silver Maple	45	70	Fair/Good	53 Fifth St.
14	Norway Maple	16	40	Good	49 Fifth St.
15	Sugar Maple	16	30	Dead	45 Fifth St.
16	Norway Maple	15	25	Good	45 Fifth St.
17	White Ash	30	70	Fair	58/60 Fifth St.
18	Norway Maple	17	40	Good	56 Fifth St.
19	Norway Maple	20	40	Good	56 Fifth St.
20	Horse Chestnut	36	35	Fair/Good	Fifth and Grove
21	Bradford Pear	6	20	Good	Front of Sawyer School
22	Bradford Pear	4	15	Good	Front of Sawyer School
23	Bradford Pear	4	15	Good	Front of Sawyer School
24	Bradford Pear	4	15	Good	Front of Sawyer School
25	Honey Locust	12	35	Fair	Dover Cycle Parking
26	Norway Maple	13	25	Good	Dover Cycle Parking
27	Green Ash	15	25	Poor	Dover Cycle Parking
28	Norway Maple	15	25	Good	Dover Cycle Parking
29	Bradford Pear	18	25	Fair	Dover Cycle Parking
30	Sugar Maple	28	60	Poor	20/22 Fifth St.
31	Silver Maple	34	50	Poor	Opp. 18 Fifth St.

Figure 8: Tree Condition Assessment prepared by I.S.A Certified Arborist and I.S.A. Tree Risk Qualified Arborist from SavATree.

Smith Well Road Elevated Tank:

The new Elevated Tank at Smith Well was disinfected, tested, and filled in May and is currently online. The completion of the tank will allow for the existing Garrison Hill water storage tank to be taken offline later in 2024 for rehabilitation.

Waterfront Redevelopment:

The focus of waterfront construction in May was on completing subsurface utility work and preparing the base gravels on River Street and Seaport Way in preparation for future base pavement.

Highlights during May included the completion of the remaining water service work for townhome buildings E-1 and E-2, installation of the final sewer service lines for buildings E-1 and E-2 along River Street, and installing all catch basins and remaining drainage work in the roadway network.

Significant progress was made on electrical and telecommunication duct banks on Seaport Way and River Street. Over 85% of the work on River Street is complete, with the remaining section located near the southern end of building D. This section includes installing vaults and concrete encasement.

Upcoming work at the project includes finishing electrical and telecommunication duct bank installation at the Makem bridge intersection, paving the roadway network, final shoreline protection measures, and invasive species mitigation.

Willand Pond Milfoil Grant

The City is awaiting Governor and Council approval to accept and expend a \$14,140 state grant for milfoil treatments at Willand Pond. The grant would require a 50% match from the city, bringing the project total to \$28,280.

Milfoils are rooted, submerged aquatic plants in water bodies. The New Hampshire Department of Environmental Services, which is offering the grant to Dover, prepared a variable milfoil management plan in March, which calls for eradicating variable milfoil in Willand Pond. NHDES recommended an herbicide treatment as part of the plan. The Conservation Commission unanimously endorsed accepting the grant and supported “the milfoil treatment effort with the understanding that untreated milfoil would have a more adverse impact on Willand Pond than the herbicide application and that a long-term integrated pest management plan be developed for the Pond,” according to the background materials.



Figure 9: Assistant City Engineer Amelia DeGrace, who served as the City's Project Manager for the project, stands in front of the elevated Tank at Smith Well that was recently completed and filled.

319 Pond Retrofit Grant

The main goal of this project is to retrofit two (2) dilapidated stormwater control measures to improve the removal of nitrogen from stormwater keeping with the goals of the Great Bay Total Nitrogen Permit. Low cost and simple retrofits investigated by this grant funded project can be replicated by City staff beyond this project to further reduce nitrogen pollution into the Great Bay from stormwater runoff. Under Section 319, states, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects. Two locations in Dover were identified as potential candidates for this grant and were awarded to help make progress restoring or protecting watersheds. EPM and the team at UNH made site visits on May 28th to gather preliminary data. The locations of the ponds were at the Middle School and along Hubbard Rd.



Figure 10: Existing detention basin on Hubbard Road.

Dredge Cell Closure:

The City continues to work with the design consultant, Verdantas, on final plans and permitting applications for the closure of the Dredge Cell. Plans for a roadway extension from the waterfront to Maglaras Park have been prepared and are under review by City staff and the waterfront design consultant, Horsely Witten for incorporation into the ongoing project. In addition to extending the roadway from the waterfront to Maglaras Park, the City is working with Verdantas to design and permit upgrades to the park including the rehabilitation of the ballfields and improved parking.



Figure 11: Preliminary conceptual design for Maglaras park upgrades.



Figure 12: Assistant City Engineer Jillian Semprini and Special Projects Advisor Bill Boulanger meet with the contractor N. Granese and Sons at the corner of Fourth and Fifth Streets.

Fifth and Grove Reconstruction:

N. Granese and Sons cleared trees and began the temporary water service installation in preparation for the installation of the new water main and other utilities which will occur throughout the remainder of 2024. The Fifth and Grove project includes new utilities, accessible sidewalks, signage, and the complete reconstruction of the roadway.

Annual Street Paving Program:

In May, the City's Engineering and Operations formally kicked off the annual street paving program with a meeting with the selected contractor Brox Industries. The meeting focused on the contractor's schedule for paving operations which were planned to start in early June with pavement reclamation

work and pot hole patching. Major road repair work was conducted on Piscataqua Rd to address major road deterioration in the area in preparation for more major paving operations in 2025.

Tolend Landfill Update

The Dover Municipal Landfill Superfund Site located near Tolend Road is monitored annually as part of the Revised Environmental Monitoring Program, where groundwater and surface water samples are collected and analyzed for constituents of concern. Results of the sampling are published annually in the Annual Remedy Performance Report on the NHDES website. Current remedial activities include pumping groundwater at the toe of the Landfill as part of the Source Control Remedial Action (SCRA) and pumping groundwater seasonally from an area south of the SCRA system in an area identified as the Southern Plume. The Southern Plume system is currently being evaluated for expansion as part of the Southern Plume Groundwater Extraction Optimization. The Southern Plume 30 Percent Remedial Design was submitted to the regulatory agencies in January 2024 and is currently under review.

Portland Ave Retaining Wall:

The contractor for the project, GW Brooks, anticipates to fully mobilize in June with temporary traffic signals for one way alternating traffic. It is anticipated that work will last until the end of 2024.

Henry Law Ave and Payne Street Reconstruction:

Engineering staff met with the design consultant Kleinfelder in Henry Law Park to review the condition of the wall along the park's boundary with the Cochecho River. The purpose of the site walk was to assess concerns with material subsiding from behind the wall into the river. It is expected that a portion, if not all of the wall along the park will need some work during the Henry Law Avenue Reconstruction project.

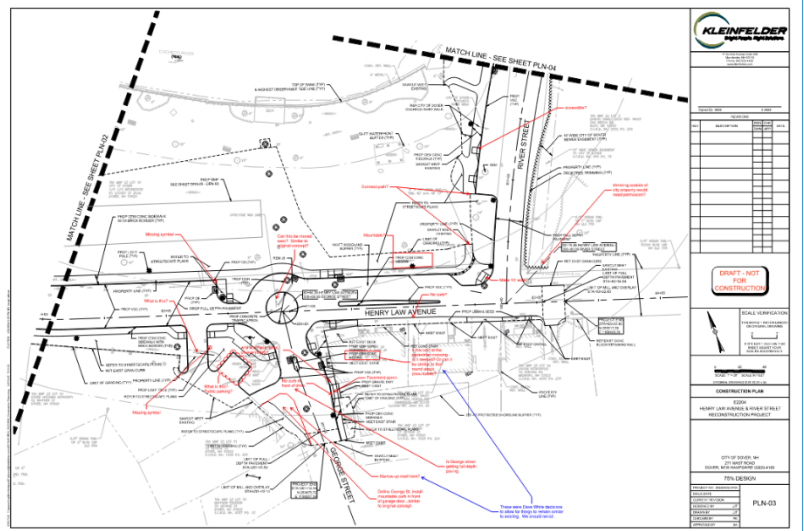


Figure 13: 75% Design plans with markups from Engineering staff.

The Engineering staff met in May to review 75% design drawings for Henry Law Ave and Payne Street Reconstruction work. The project is scheduled to break ground in 2025 and include a large stormwater best management practice below Henry Law Park.

Garrison Hill Tank Rehabilitation:

Engineering staff reviewed 90% drawings for the tank rehabilitation which is scheduled to begin in late 2024. Upgrades to the 1960s tank are being made possible by the newly constructed elevated tank on Smith Well Rd.

Court and Union St/Lower Central Ave Reconstruction Projects:

Engineering Staff have reviewed 95% design drawings so that bid documents can be prepared later in 2024 for construction in 2025. These projects include upgrades to utilities, drainage, and street pavement reconstruction.

Rapid Rectangular Flashing Beacons (RRFBs):

Engineering staff is working with Operations on the installation of new RRFBs in the downtown area including at Williams St and School St.

Traffic Signal Management

The City's consultant Sebago Technics wrapped up a year long study of the traffic signals and provided a technical memorandum with recommendations for capital projects to improve signal operations and resiliency.

Downtown Pedestrian and Vehicular Improvement Project:

Design Development Level Documents (60%) were submitted by consultant GPI for the Downtown Pedestrian and Vehicular Improvement Project. This project includes the changing of traffic downtown from one way to two way. It also includes upgrades to pedestrian facilities and landscaping. A public meeting in the fall of 2024 is expected.

Crosby Road Drainage Evaluation:

A Request for Proposals (RFPs) has been prepared for a drainage evaluation for the Crosby Road Industrial Park. Flooding concerns in the area have been raised by property owners and the City will be looking for a consultant to assess the various culverts, bridges, and drainage swales for capacity limitations and provide recommendations for improvements.

Facilities Projects:

Ice Arena Glycol Tank Replacement:

The ice arena's glycol tank replacement project is underway. Careno Construction successfully removed a wall to create access to the chiller room, allowing Davis Mechanical to safely pump the existing glycol into a temporary holding tank. The old tank was then removed and hauled away for recycling by the recycling center team. The good news is the new tank was installed on May 28th, 2024, and Davis Mechanical has already begun reinstalling the piping. With everything on track, the project is expected to be completed by June 19th, 2024. This includes system commissioning, ensuring everything is operational before the ice-making process resumes.



Figure 14: Glycol tank removal in progress.



Figure 15: Ice arena cooling tower replacement.

Ice Arena Cooling Tower Replacement:

The ice arena's cooling tower, which had been in operation for over 20 years, was successfully replaced on May 14, 2024. The outdated system experienced significant leaks, resulting in daily water loss.

The replacement project was completed within a two-day timeframe. Day one focused on the meticulous removal of the old cooling tower. Day two involved painting the base of the new tower and carefully reattaching the plumbing to ensure proper function.

This vital upgrade will ensure optimal ice conditions within the arena while eliminating prior water loss concerns.

Ice Arena Flat Roof Replacement:

The ice arena's roof replacement project is moving forward steadily. Initial plans required fasteners to secure the backer board. However, after uncovering electrical wiring close to the roof deck in late fall, the project team opted for a safer approach. They conducted pull tests and ultimately selected an adhesive backer board system.

With favorable weather conditions, crews began the work in early May. The process involved meticulously removing the existing roof materials, adhering the new backer board to the deck, and finally installing a fresh layer of EPDM roofing. The new roof has already passed its initial test during recent rainstorms, with no leaks detected. The project nears completion with metal flashing installation scheduled for mid-June. This final step will fully waterproof the arena and ensure optimal ice conditions.



Figure 16: Ice arena roof replacement.

Jenny Thompson Pool Pump Repairs:

The Jenny Thompson Pool is undergoing pump repairs to restore full functionality. One of the pool's pumps had been inactive for several years due to a water leak. Over time, the idle pump became seized.

To address the issue, city staff contacted AAA Pump for pump removal and repair. The non-functional pump was removed on May 10th, 2024 and is currently at AAA Pump's facility for repairs. Once the repairs are complete, the pump will be reinstalled at the pool. In the meantime, the pool remains operational thanks to its second pump.

The pool is also undergoing a design for a major rehabilitation in late 2024 to repair the pool structure, the deck, and appurtenances around the facility including ADA accessibility. Weston and Sampson is currently working on design documents which will be presented to the City later in summer 2024.

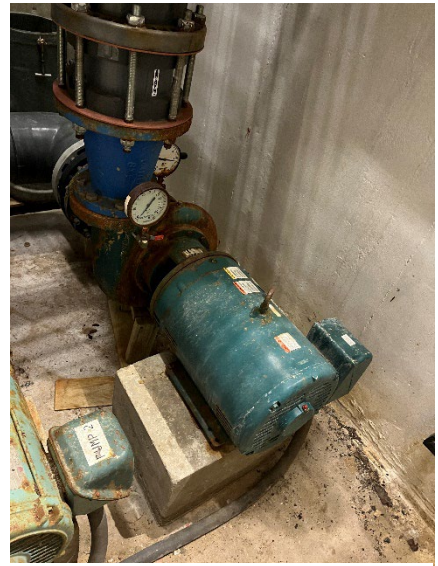


Figure 17: Jenny Thompson pump restoration.

Permits and Licenses:

Permit and License Summary for May 2024:

Driveway Permits:	22
Utility Licenses:	4
Paving Licenses:	2
Excavation Permits:	8
Certificate of Occupancy Inspections:	11
Construction:	1
Obstruction Permits:	2

Wastewater Permit Review Summary for May 2024:

Sewer Connection Permit:	0
Septic Design Reviews:	5

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.

Two (2) projects came to TRC in May that required Engineering review:

- Locust Street Residential Building
- 105 Durham Rd – Multi Family

Construction Oversight:

Engineering Technician, Jordan Chambers, continues to conduct oversight of over 65 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.)
- Ember Dr (New Rochester Rd.)

Preconstruction Kickoff Meetings:

There were two (2) preconstruction meetings in May. One for the Inspection Services Expansion at Mast Road and the other for the residential subdivision at Ember Drive (New Rochester Rd).



Figure 18: Courthouse Redevelopment on Second St opened for tenants in



Figure 19: New medical office building on Durham Rd is nearing completion.