Report for the City Manager

Community Services: Engineering

Date: August 12, 2024

The purpose of this document is to summarize the work the City of Dover Engineering Department from July 1st through July 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
Vacant – Environmental Project Manager
Brenna Weston – Engineering Intern
Griff Bates – Engineering Intern

Staffing Update:

The Engineering Department is seeking a new Environmental Project Manager and posted the position in June. Applications are being accepted and those interested are encouraged to contact the City of Dover for information on how to be considered for the position or submit an application through the City's online job portal here: https://cityofdover.applytojob.com/apply/ujGMVJ9hbE/25002-Environmental-Projects-Manager-FullTime

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 July 15th to review questions received on topics from the December meeting on how the City responds to social media comments. The next meeting is scheduled for August 19th.

Transportation Advisory Committee (TAC) (Jillian Semprini): TAC met on July 22nd to discuss various items including pedestrian crossing requests, intersection safety concerns, stop sign requests and changes to school zone signage on Watson Road. The next meeting is scheduled for September 23rd.

Planning Board (Ken Mavrogeorge): Planning Board met on July 23rd. City Engineer Mavrogeorge was absent from the meeting but topics reviewed at the meeting included a review of a community trail extension, minor subdivision review, an amendment to a previously approved project and possible revisions to Chapter 170 of the Dover Code.

Municipal Alliance for Adaptive Management (MAAM): MAAM did not meet in July. The next meeting is scheduled for August 15th at the Rochester, NH DPW.

Seacoast Stormwater Coalition (SSC) (Director John Storer): The SSC met on July 17th in a virtual setting. Topics of the meeting included the following:

- PTAP Advanced Workshop on October 10th at 9 am.
- Review of Federal Highways Administration National Culvert Removal, Replacement, and Restoration Grants

The next Coalition meeting is scheduled for August 21st.

TIF Advisory Committee/Cocheco Waterfront Development Committee (CWDAC)/Park Subcommittee (Jamie Stevens):

- TIF Advisory Committee: Did not meet
- The CWDAC Park Sub-committee met on July 9th and 23rd to review selection of Paver Materials and Finishes from Northeast Earth Mechanics and possible endorsement of the Park Pavilion building from CJ Architects

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	94	100
July 2024	9	10

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.

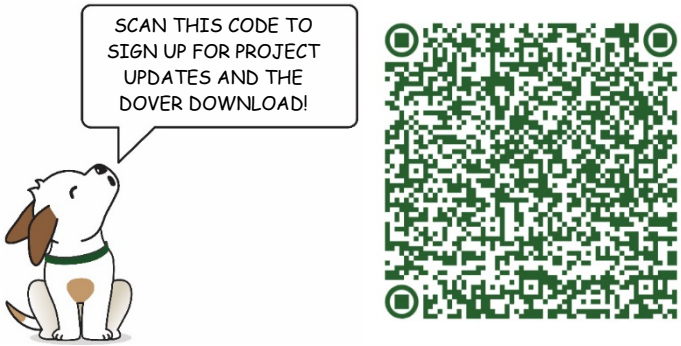


Figure 1: Rover the Community Services Dog and a QR Code to sign up for project specific updates and the Dover Download.

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.

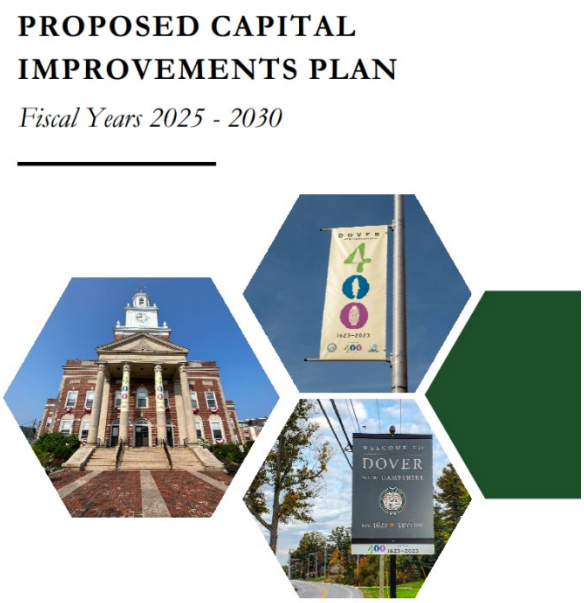
The inventory work to date includes identifying approximately 10,000 service line locations, which the team will need to identify the service materials for. In order to determine the materials of service lines, staff must comb through record drawings, water tie cards, and other City documents. To help 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.

Engineering Projects:

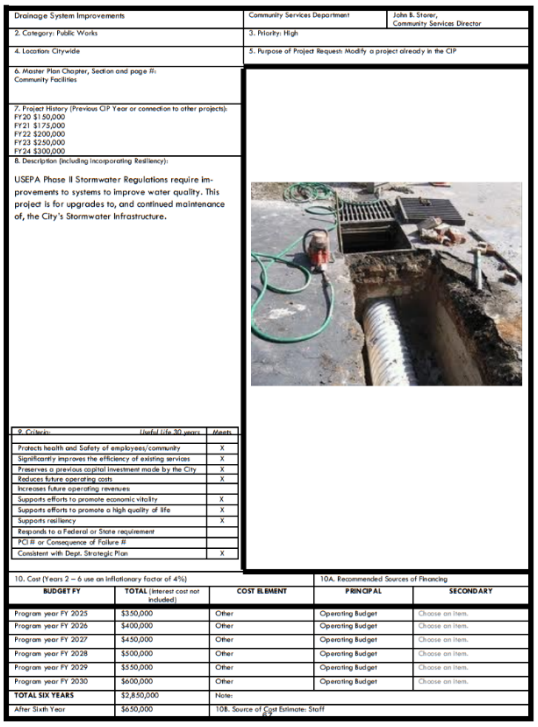
As noted above, the Engineering staff is actively supporting a number of projects across the city. The following are some highlights on just some of the active projects.

Project Spotlight: Capital Planning for Dover's Infrastructure: A Collaborative Approach

Each year, the City of Dover's various Departments work together with the Planning Department to develop a comprehensive Capital Improvement Plan. The plan consists of proposed projects from each department for the purchase, construction, or reconstruction of capital assets. In order to be included within the CIP, a project needs to have an estimated cost of $25,000 or more and have a useful life of three years or greater. In addition, the project needs to satisfy at least one of the following criteria:



- Protect the health and safety of employees and/or the community at large
- Significantly improve the efficiency of the existing services
- Preserve a previous capital investment made by the City
- Significantly reduce future operating costs or increase future operating revenues



Drainage System Improvements | Community Services Department | John B. Storer, Community Services Director

2. Category: Public Works | 3. Priority: High

4. Location: Citywide | 5. Purpose of Project Request: Modify a project already in the CIP

6. Master Plan Chapter, Section and page #: Community Facilities

7. Project History (Previous CIP Year or connection to other projects):
FY20 $150,000
FY21 $175,000
FY22 $200,000
FY23 $250,000
FY24 $300,000

8. Description (including Incorporating Resiliency):
USEPA Phase II Stormwater Regulations require improvements to systems to improve water quality. This project is for upgrades to, and continued maintenance of, the City's Stormwater Infrastructure.

9. Criteria: (Useful life 30 years)	Meets
Protects health and Safety of employees/community	X
Significantly improves the efficiency of existing services	X
Preserves a previous capital investment made by the City	X
Reduces future operating costs	X
Increases future operating revenues	
Supports efforts to promote economic vitality	X
Supports efforts to promote a high quality of life	X
Supports resiliency	X
Responds to a Federal or State requirement	
PCI # or Consequence of Failure #	
Consistent with Dept. Strategic Plan	X

10. Cost (Years 2 – 6 use an inflationary factor of 4%) | 10A. Recommended Sources of Financing

BUDGET FY	TOTAL (Interest cost not included)	COST ELEMENT	PRINCIPAL	SECONDARY
Program year FY 2025	$350,000	Other	Operating Budget	Choose an item.
Program year FY 2026	$400,000	Other	Operating Budget	Choose an item.
Program year FY 2027	$450,000	Other	Operating Budget	Choose an item.
Program year FY 2028	$500,000	Other	Operating Budget	Choose an item.
Program year FY 2029	$550,000	Other	Operating Budget	Choose an item.
Program year FY 2030	$600,000	Other	Operating Budget	Choose an item.
TOTAL SIX YEARS	$2,850,000	Note:		
After Sixth Year	$650,000	10B. Source of Cost Estimate: Staff		

Figure 3: Typical Capital Improvement Sheet for Drainage System Improvements

These large-scale projects, are the backbone of a thriving community and many projects are critical to keeping basic services running.

Each year, the Engineering Division of Community Services reviews opinions of probable construction costs, infrastructure condition assessment reports, and asset management plans prepared by professional engineers to determine what projects should be recommended for prioritization and at what cost to the City.

This review, coupled with an understanding of the City, aids in the team's goal of prioritizing projects that address immediate needs while setting the City up for long-term sustainability. The Engineering Division then sends capital funding recommendations to the Planning staff who ensure that the requests align with the community's vision.

Together, these departments weigh the merits of each project, understanding that adequate funding is paramount for the realization of these essential improvements. Our infrastructure is the lifeblood of our city, providing the

foundation for public health, safety, and economic growth. Investing in it today is an investment in tomorrow's Dover.

A good example of the type of funding decisions that are made during this process is the need for adequate funding of vehicles for Community Services. These are the trucks and machines that City staff uses to repair utilities in emergencies and keep the roads free of snow in the winter.

As one would expect, due to the rising costs of vehicles since the pandemic in 2020, funding for replacement vehicles is falling below sustainable levels to maintain the current fleet. During a review of this year's CIP requests with Community Service staff, it is clear that Community Services lack several vehicles needed for daily operations, and many existing ones are well past their prime. Below is a summary of the problem, impact, and potential solution to this issue which is a similar approach that Engineering uses for each Capital Project.

The Problem:

- **Outdated Fleet:** Our current ten-year replacement schedule is not being met. Many vehicles, like the **1999** water truck and the **1985** loader snow blower, are far beyond their useful lifespan.
- **Increased Costs:** Holding onto older vehicles leads to higher maintenance costs, lower fuel efficiency, and diminished resale value. The recent sale of two vehicles highlights this issue. They were well past their useful life and brought in minimal revenue.
- **Operational Risks:** Aging vehicles are less reliable, increasing the risk of breakdowns during critical times like winter plowing.
- **Parts Shortage:** The auto industry landscape has changed and as a result, parts for older vehicles are becoming increasingly scarce, causing extended downtime during repairs.

Heavy Equipment Replacement	Community Services Department	John B. Storer, Community Services Director
2. Category: Public Works	3. Priority: High	
4. Location: 272 Mast Road	5. Purpose of Project Request: Equipment: Scheduled Replacement	
6. Master Plan Chapter, Section and page #: Community Facilities		
7. Project History (Previous CIP Year or connection to other projects): FY20 $300,000 FY21 $350,000 FY22 $400,000 FY23 $450,000 FY24 $500,000		
8. Description (including incorporating Resiliency): The City's inventory of vehicles and equipment includes nearly 130 units w/ a replacement value of $8.9 million. This includes 16 large dump trucks and 4 loaders for snow removal. Projected replacements for FY25 include: • 2005 International 6-wheeler with plow and sander (#74) • 2005 International 6-wheeler with plow and sander (#75) • 2011 Holder Sidewalk tractor w/ sander, plow snow blower		

9. Criteria:	Useful Life 30 years	Meets
Protects health and Safety of employees/community		X
Significantly improves the efficiency of existing services		X
Preserves a previous capital investment made by the City		X
Reduces future operating costs		X
Increases future operating revenues:		
Supports efforts to promote economic vitality		X
Supports efforts to promote a high quality of life		X
Supports resiliency		X
Responds to a Federal or State requirement		
PCI 19 or Consequence of Failure 19		
Consistent with Dept. Strategic Plan		X

10. Cost (Years 2 – 6 use an inflationary factor of 4%)			10A. Recommended Sources of Financing	
BUDGET FY	TOTAL (Interest cost not included)	COST ELEMENT	PRINCIPAL	SECONDARY
Program year FY 2025	$550,000	Heavy Equipment	Capital Reserve	Choose an item.
Program year FY 2026	$600,000	Heavy Equipment	Capital Reserve	Choose an item.
Program year FY 2027	$650,000	Heavy Equipment	Capital Reserve	Choose an item.
Program year FY 2028	$700,000	Heavy Equipment	Capital Reserve	Choose an item.
Program year FY 2029	$750,000	Heavy Equipment	Capital Reserve	Choose an item.
Program year FY 2030	$800,000	Heavy Equipment	Capital Reserve	Choose an item.
TOTAL SIX YEARS	$4,050,000	Note:		
After Sixth Year	$850,000	10B. Source of Cost Estimate: Past 5 year history of State bid		

Figure 4: Typical Capital Improvement Sheet for Public Works Heavy Equipment Replacement.

The Impact:

- **Inefficiency:** Older, inefficient vehicles cost the city more in maintenance, fuel, and pollution while also hindering daily operations due to lack of availability.
- **Safety:** Older, unreliable vehicles pose safety risks to both City staff and the public.
- **Winter Preparedness:** A breakdown during a snowstorm could leave the City unprepared to handle critical tasks like road clearing.

The Potential Solution:

- **Strategic Replacement:** Increase investment in a program that replaces vehicles based on a ten-year schedule, prioritizing critical equipment like snowplows and hook trucks. Leasing programs could be explored to ensure access to new, reliable vehicles within budgetary constraints.

- **Modernization:** Newer vehicles are more fuel-efficient which reduces operating costs and our environmental impact.
- **Improved Efficiency:** A reliable fleet streamlines operations and minimizes downtime.
- **Enhanced Safety:** Modern vehicles come equipped with improved safety features, protecting staff and the public.

Winter is Coming:

With winter approaching, the need for a reliable fleet becomes even more critical. Investing in replacements now could prevent equipment breakdowns and ensure smooth operations during the coming season.

Fifth and Grove Reconstruction:

N. Granese and Sons continues to work on the installation of the new storm drainage in Fifth St. and Grove St. The Fifth and Grove project includes new utilities, accessible sidewalks, signage, and the complete reconstruction of the roadway. Traffic disruptions within the project area are expected intermittently for the rest of 2024 as the project progresses. Drivers are encouraged to sign up for project updates to keep up with proposed closures, detours, and shifts in traffic patterns to minimize delays. Alternative routes are available around the project site. Patrons to local businesses are encouraged to sign up for notices too as parking restrictions on Fifth and Grove will continue through 2024 in select areas as construction progresses.

Annual Street Paving Program:

In July, Brox Industries, Inc., the city's paving contractor, paved Saint John St., Durrell St., and Winter St. The work included milling the current pavement, raising castings, and paving. Upon completion of this work, the contractor mobilized to Washington Street to prepare for paving.

Portland Ave Retaining Wall:

The contractor for the project, GW Brooks continues to make progress on the construction of the new Portland Ave. wall. The project includes new lighting and sidewalks along Portland Ave. It is anticipated that work will last until the end of 2024.

Crosby Road Drainage Evaluation:

A Request for Proposals (RFPs) was released 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. Three (3) bids were received in July and the project is expected to be awarded to the winning bidder in August and last until February 2025.

Cochecho Waterfront Redevelopment:

July marked another significant advancement in the Cochecho Waterfront project. Essential infrastructure work, including the installation of electrical and telecommunication duct banks on Seaport Way, has been finalized. Progress on drainage systems is also evident with the completion of outfall #3.
Preparations for the future park pavilion building are underway. Contractors have begun exploring the site for obstructions and have successfully removed remnants of the old wastewater treatment plant. Foundation support for the Pavilion is being established through the installation of rammed aggregate piers. Granite toe wall construction is nearing completion, and site work for the park area is progressing steadily.
Meanwhile, the private developer, Cathartes, is moving forward with the construction of Building C. Foundation work for both Buildings C and D is in progress, with Keller completing the necessary ground improvements to support the structures. Additional utility installations are also being carried out on privately owned parcels. Windover Construction has engaged North East Earth Mechanics to handle utility installations, excavation, and grading for the project.

Figure 5: Waterfront foundation progress on building C.

Facilities Projects:

Adventure Park Upgrades:

Plans for enhancements are coming together for the City's Downtown Adventure Park. The plans for the installation of granite curbing around the swing and sandbox areas to replace the wooden posts, installed during the park's original construction, are underway. Upgrades to the water/sand play area are also being planned including the addition of a granite feature carved by Community Services staff. Temporary closures to the park are anticipated after Labor Day in early September to ensure safety during construction. The park will reopen before Apple Harvest Day in early October. Special Project Advisor Bill Boulanger and Facilities Project Manager Eric Sanderson are leading this project on behalf of Community Services.

Figure 6: A new granite water feature was carved by CS staff for the upcoming Adventure Park upgrades.

Figure 7: Park Street Park pathway improvements.

Park Street Park Upgrades:

Work recently took place on the pathways within the Park Street Park. Pathways were widened and a reinforcement grid and gravel were placed to make the pathways more traversable by pedestrians and maintenance vehicles. Work will continue in August to improve the pathways to ensure ADA accessibility is maintained by adding finely graded material to the pathways.

Permits and Licenses:

Permit and License Summary for July 2024:

Driveway Permits:	6
Utility Licenses:	2
Paving Licenses:	1
Excavation Permits:	8
Certificate of Occupancy Inspections:	14
Construction:	3
Obstruction Permits:	1

Wastewater Permit Review Summary for July 2024:

Sewer Connection Permit:	0
Septic Design Reviews:	1

Figure 8: Community Recreation Building at Karolina Way.

Figure 9: 2 Grove Street is beginning to rise.

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.

One (1) project came to TRC in July that required Engineering review:

- 105 Durham Road – Multi-unit Residential Development for adults with Intellectual Developmental Disabilities (IDD).

Preconstruction Meetings:

There were two (2) preconstruction meetings held in July.

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.)
- New Community Recreation Building (Karolina Way)
- Mixed Use Residential – The Station (2 Grove St)
- Waterfront Private Development