

Report for the City Manager

Community Services: Engineering

Date: May 10, 2023

The purpose of this document is to summarize the work the City of Dover Engineering Department through **April 30, 2023**.

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
Amelia DeGrace – Assistant City Engineer (Utilities)
Jillian Semprini, PE – Assistant City Engineer (Transportation)
Eric Sanderson – Facilities Project Manager
Gretchen Young, PE – Environmental Projects Manager
Jamie Stevens – Waterfront Construction Manager
Jordan Chambers – Engineering Technician

Service Calls

The Table below shows the total calls year to date and over the past month. There has been an increase in calls this year over past years due to the change in how Admin receives calls to the department. This has shown to result in a quicker response to callers many of whom provide an email address for a quicker response from Engineering staff.

Time Period	Logged Service Calls	Resolved Service Calls
Year to Date (2023)	162	122
Last Month (Month)	64	41



Figure 1: Rover the Community Services Dog

Public Outreach:

Community Services Mascot:

Engineering staff has been working with a consulting team from VHB and Media Services on materials for public outreach for the Stormwater Utility. Part of the strategy is to adopt a mascot, Rover the Community Service Dog, that will be used with various public education messages and highlight specific City services. This illustration development will lay the groundwork for a potential future use of the mascot for other public messages and public

events such as Apple Harvest Fest. It is anticipated that a formal roll out of the mascot will coincide with Public Works Week (May 21st – 27th, 2023).

CIP Projects

Chestnut Street Bridge: On April 28th the Chestnut Street was opened to pedestrians and vehicles three weeks ahead of the original opening date. The bridge's new membrane, pavement, and striping were installed during the last week of April with some final cleanup and private utility work expected through May. In addition to completing the project ahead of schedule, the project is tracking below the budget approved by the City Council in late 2022 by approximately \$650,000.



Figure 2: Chestnut Street opened to vehicles and pedestrians 3 weeks ahead of schedule.

Dover Stormwater and Flood Resilience Utility Fact Sheet



Growing Demands

As the City has grown and developed over time, the demands to keep up its stormwater infrastructure have also grown much like those of the water and sewer systems. The City now has over 100 miles of storm drainpipes and swales, and over 3,000 catch basins, as well as hundreds of culverts and outfalls. Much of this infrastructure is more than 100 years old and is overwhelmed during extreme rain events, resulting in increased flooding and property damage. At the same time, the City is facing more stringent regulatory requirements to manage stormwater and restore water quality in our adjacent water resources. These growing demands are causing the City's annual stormwater operating and capital improvement budgets to rise at an accelerated pace. Critical drainage and flood mitigation projects totaling more than \$5 million have been deferred due to competing funding priorities. Using property taxes to fund the stormwater budget is not sustainable or equitable, as the property tax portion used to fund the stormwater budget is not tied to a property's usage of the system. Not all properties contribute to the City general fund, such as tax-exempt properties, even though all developed properties generate stormwater.

As Dover celebrates its 400th anniversary, the City seeks to secure a more flood resilient and sustainable future with a stormwater and flood resilience utility.

Stormwater and Effects of Impervious Area

Stormwater runoff is rainfall or snowmelt that flows over land and does not soak into the ground. Impervious areas such as rooftops, driveways, and parking lots can create 20x more stormwater runoff than forested areas. As it travels, stormwater runoff picks up pollutants such as sediment, bacteria, and nutrients, which end up flowing into our local water bodies either directly or through the City's storm drain system.

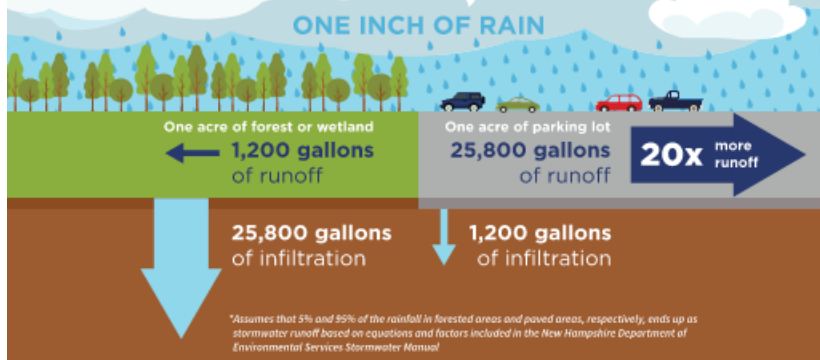


Figure 3: Stormwater Utility Fact Sheet

Stormwater Utility: The City's consultants (Stantec and VHB) have finalized a fact sheet for distribution to the general public in advance of public meetings in May and June. The first of the meetings is scheduled for Tuesday, May 23, at 5:30 p.m. in Room 305 of the McConnell Center. After completing the initial meetings, Engineering staff will schedule smaller meetings with groups around the City including HOAs and community organizations for the summer and early fall. Staff will be holding a join DUC and Ordinance Committee meeting on June 19th, to discuss and seek recommendation on the specifics of the future fee structure. The Stormwater Utility is on track for an early 2024 presentation to, and possible vote by, City Council.

Putty Hill Water Treatment Plant: Work this month primarily focused on completing the siding and exterior envelope and beginning the extensive plumbing network throughout the interior. Contractor is on track to complete project in Spring of 2024.



Figure 4: Putty Hill Treatment Plant

Street Reconstructions: The Engineering staff continues to advance the designs of multiple street reconstruction projects including the following: Fifth and Grove St; Court and Union St.; Henry Law and River St. It is anticipated that these projects will be ready for bid this summer and released for bid in the late summer/fall. Work for these projects are anticipated to occur in spring 2024 and continue through mid-2025. Street Reconstruction projects are Capital Improvement Plan projects that include comprehensive upgrades to water, sewer, drainage, lighting, road surfaces, and sidewalks within neighborhoods.

River Street Pump Station: The River Street Pump Station is on track for a May bid release after review by Community Service staff and the NHDES. Improvements to the pump station are expected to take 18 months to complete and coincide with the Waterfront Infrastructure Improvements project.

Smith Well Road Elevated Tank: The foundation of the new elevated tank is under construction with pouring of the foundation scheduled for early May 2023. The new 1-million-gallon tank is being constructed to allow the City to take the Garrison Hill tank offline in 2024 for rehabilitation. The new tank is currently on track for final completion in early 2024.

Cocheco Stormwater Master Plan: Engineering staff met with the NHDES and the City's consultant Kleinfelder on April 24th to review the Alternative drainage alignments in the Oak/Ham/Ela neighborhoods. This area consists of over 200 acres that drains to the recently installed Broadway culvert that contributes to the Cocheco St. outfall. A preferred alternative will be selected and will serve as the basis of design for the Oak, Ham, and Ela Neighborhood reconstruction (+/- 100 acres). It is anticipated that the final report will be completed by the end of 2023.

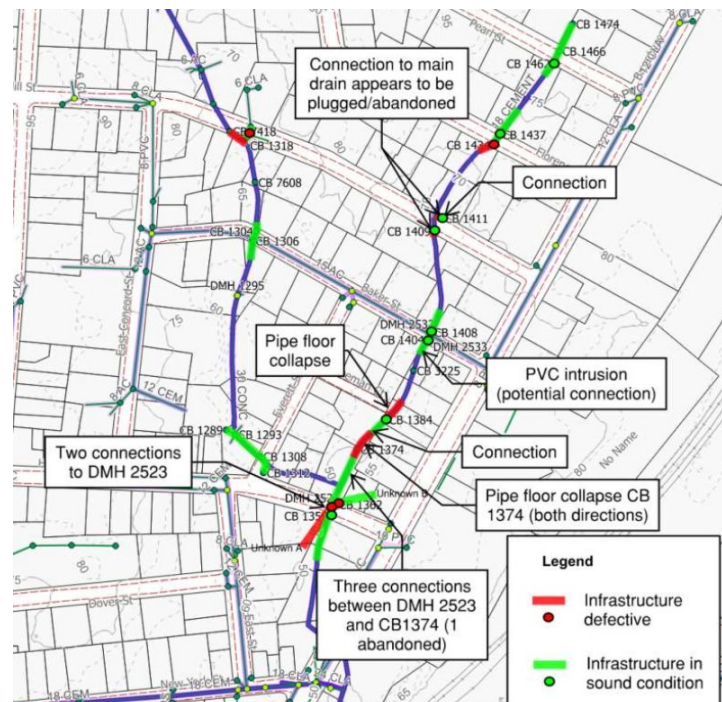


Figure 5: Field investigation summary for the Cocheco Stormwater Master Plan.

Waterfront Redevelopment: Engineering Staff evaluated the list of deductions submitted with the winning bid for the waterfront project and made recommendations on which deductions to exercise. Engineering staff has continued to coordinate with the consultants on the preparation of conformed documents for distribution to the contractor in advance of the start of

construction. It is anticipated that construction will commence in summer 2023 and last between 2 to 3 years. The private portion of the project is likely to start in early 2024 once the developer secures the necessary permits for their development from the state. Engineering staff will provide full time oversight of the public improvements and part time observation of the private work.

Cocheco St Outfall Replacement: Engineering staff met with Eversource and the City’s engineering consultant in late April to review a preliminary cost estimate and schedule for the construction of the replacement for the existing stormwater outfall. It is anticipated that construction will start in November 2024 and run through March 2025.

Portland Ave Retaining Wall: The City’s Engineering consultant is currently value engineering the plans to reduce costs. The project is expected to go out to bid in the fall of 2023 and be completed by November 2024.

Street Paving Program: The 2023 annual street maintenance bid was opened on April 27th with Continental Paving the apparent low bidder. The City anticipates awarding the contract at the May 10th City Council meeting with paving occurring soon thereafter and running through the summer of 2023. Below is the list of streets to be paved under the 2023 program. Engineering staff has also developed a preliminary list of streets to be paved in 2024 that will be released later this year.

LIST OF STREETS

Preliminary Street List and Repair Method

Street	From	To	Avg. Width (ft)	Approx. Length (ft)	Pavement Thickness (in)	Repair Method
BROOKLINE AVE	WASHINGTON ST	FOURTH ST	20	900	4	Reclaim & 4" repave
CEDARBROOK DR	FOURTH ST	END	26	1090	2	2" overlay (1/2" mix)
FOURTH ST	WASHINGTON ST	BRIDGE	30	2480	1.5	Edge Mill & 1.5" overlay (1/2" mix)
IONA AVE	BROOKLINE AVE	CITY LIMITS	20	330	4	Pave gravel road
KENNEDY CIR	FOURTH ST	END	32	490	2	Edge Mill & 2" overlay (1/2" mix)
MITCHELL CT	CEDARBROOK DR	END	26	260	2	2" overlay (1/2" mix)
CRESCENT AVE	GLENWOOD AV	HORNE ST	32	1220	2	2" overlay (1/2" mix)
GLENCREST AVE	GLENWOOD AV	HORNE ST	32	1090	2	2" overlay (1/2" mix)
GROVE ST	SIXTH ST	ASH ST	32	1700	2	Edge Mill & 2" overlay (1/2" mix)
HELLMAN AVE	HORNE ST	END	14	240	1.5	1.5" overlay (1/2" mix)
HILLCREST DR	HOUGH ST	HILLCREST DR (N)	24	2510	2	2" overlay (1/2" mix)
HORNE ST	SIXTH ST	25' N OF ASH ST (E)	28	1260	1.5	1.5" overlay (1/2" mix)
HOUGH ST	HORNE ST	CENTRAL AV	28	1550	1.25	1.25" shim (1/2" mix)
MAPLE ST	SIXTH ST	350' N OF ASH ST	32	1900	2	Edge Mill & 2" overlay (1/2" mix)
CHESTNUT ST	WASHINGTON ST	BRIDGE (S)	46	460	2	Full-Width Mill & 2" overlay (1/2" mix)
LOCUST ST	CENTRAL AV	SILVER ST	32	2960	3	Full-Width Mill & 3" overlay (1/2" mix)
FAIRFIELD DR	SUNSET DR	HARTSWOOD RD	28	590	4	Reclaim w/ cement injection & 4" repave
SUNSET DR	BELLAMY RD	CATARACT AV (E)	24	1830	4	Reclaim w/ cement injection & 4" repave
OLD GARRISON RD	RABBIT RD	289 OLD GARRISON RD	14	1470	4	Pave gravel road
LEATHERS LN	BACK RIVER RD	KATIE LN	24	1030	4	Reclaim & 4" repave
RED BARN DR	BACK RIVER RD	END	20	560	1.5	1.5" overlay (1/2" mix)

Hough Street Emergency Culvert Repair: Engineering staff is soliciting bids for a precast concrete culvert to replace three failed corrugated metal culverts below Hough Street between Maple Ave. and Horne St. While an Emergency Authorization Permit was issued by the NHDES at the end of April, an early May storm washed out a portion of the road resulting in the temporary closure of this section of Hough St over Berry Brook. The replacement is expected to occur as soon as a culvert can be manufactured and delivered. This section of the road is expected to open prior to the end of August.

Facilities Projects:

Fish Ladder Park: Staff met with potential bidders at the mandatory pre bid meeting on April 17, 2023, three companies attended. The Bid opening has been scheduled for May 17, 2023. While some prep work is anticipated to commence prior to 400th celebration, the majority of work will occur in late summer 2023. Park improvements include new brick walkways, park bench pads, trash receptacles pads, and landscaping.



Figure 6: Failed triple culvert below Hough Street.



Figure 7: Concept Sketch for the Mast Rd Expansion for Inspection Services.

Inspection Services: Staff have been finalizing the RFQ for the expansion of the 271 Mast Road facility house staff from Inspection Services. The City will be seeking qualifications from design build firms to address the needs identified in a space needs Assessment conducted by the Deputy City Manager in 2022. The goal is for Inspection Services to be moved into the expansion in the fall of 2024.

Community trail Scaled Solar System: Facilities and Grounds staff from the Community Services Department installed the 13 stanchions along the community trail. On each stanchion is a scaled example of the planet as well as a small informational plaque, 10 planets and 3 informational plaques were installed for this project. The display officially opened May 5, 2023.



Figure 8: City crews install the Community Trail Scaled Solar System.

Permits:

Permit Summary for April 2023:

Driveway Permits:	17
Utility Licenses:	5
Paving Licenses:	5
Excavation Permits:	9
C/O Inspections:	6
Obstruction Permits:	9



Figure 9: Clearing for future medical office building on Durham Rd.

Site Review/Project Oversight Support:

Technical Review Committee: Four projects came to TRC in March that required Engineering review:

- A mixed-use residential development at 30 Grapevine Dr
- An 11-lot subdivision off Gulf Road
- Reconstruction/expansion of the COAST bus facility on Knox Marsh road
- A new community recreation building for the White Cliffs of Dover complex on Knox Marsh Rd.



Figure 10: Sitework at residential project at 757 Central Ave.

Wastewater Review Summary for March 2023:

Sewer Connection Permit:	3
Septic Design Reviews:	2



Figure 11: Progress at Courthouse Redevelopment on First St.

Construction Oversight: Engineering Technician, Jordan Chambers, continues to conduct oversight of approximately 63 private construction projects approved by the Planning Board. Projects that are underway or have been completed include:

- Bluebird Self Storage (Littleworth Rd.)
- 5-unit Residential Property (Rutland St.)
- Copley Commons (Leathers Ln.)
- Tiny Home Development (Back River Rd.)
- 9 Lot Subdivision (Porchlight Dr.)
- Copper Drive Subdivision
- Unutil John Davis Station (55 Applevale)
- Bellamy Rd. (Sophie Dr.)
- Little Bay Marina (421 Dover Pt Rd)

In addition to the oversight of projects, Engineering facilitated one preconstruction meeting for a proposed 757 Central Ave (Goosetail Dr) in April.

Staff Notes: In addition to their daily 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 next DUC meeting is scheduled for May 15, 2023.

Transportation Advisory Committee (Jillian Semprini): The next TAC meeting is scheduled for May 22, 2023.

Planning Board (Ken Mavrogeorge): Planning Board met once in April and heard two Lot Line Adjustment Applications.

Municipal Alliance for Adaptive Management (MAAM) (Gretchen Young): No meeting was held in April. The next meeting will likely be in June and will focus on the recent petition for EPA to exercise its Residual Designation Authority in the Great Bay Watershed.

Other Staff News:

Gretchen Young, PE Dover's Environmental Projects Manager presented at the University of New Hampshire Environmental Justice workshop for research facility and scientists. The workshop was aimed at bringing an equity lens to the work done at the Earth, Oceans, and Space research department.

City Engineer, Ken Mavrogeorge, served as a sponsor to a team of UNH students whose Capstone project included sampling various locations around Dover for evidence of PFAS. The team presented their findings to the City in March and to their class in early May. This project will likely lay the groundwork for future sampling throughout the City.

Assistant City Engineer Jill Semprini has been working with Planning Staff on securing a CMAQ grant for transportation improvements along Durham Rd. Over the past month she has been working with the SRPC as that organization completes the air quality study.