

City of
Fitchburg



Department of
Public Works

**301 Broad Street
Fitchburg, MA 01420
Phone: 978-829-1900**

DPW Weekly Update October 21 - October 27, 2019

Dear Mayor, Councilors, and Colleagues:

This past week marked the second annual statewide STEM Week in Massachusetts. The event is organized by the Executive Office of Education and it is an effort to promote Science, Technology, Engineering and Math to children. This year, DPW Deputy Commissioner Jeff Murawski, Conservation Commission Chair Tracey Sarefield, and Fitchburg Public School STEM Coordinator Jessica Stodulski collaborated to bring a scientist from the National Weather Service / National Oceanic and Atmospheric Administration (NWS / NOAA), Mr. David Vallee to give presentations to 8th Grade Classes in our three middle schools (McKay, Memorial, and Longsjø).

Mr. Vallee is the Hydrologist-in-Charge with the NWS/NOAA Northeast River Forecast Center. Mr. Vallee gave three presentations on the subject of climate change with emphasis on its impacts to rainfall and river flooding. His presentation was very informative with many animations and examples of extreme rainfall events. Mr. Vallee explained to the children how his love for climatology and hydrology developed through his life experiences and also helped children understand how everyday weather events can be predicted and modeled.

The final part of the presentation focused on the increased frequency of heavy precipitation events (greater than 2" of rain in one day) and how these events affect places like Fitchburg. The presentation was actually very interesting and timely to DPW as we prepare to kick-off the Municipal Vulnerability Preparedness plan that will formulate a plan to deal with the increased precipitation events and flooding issues in the city.

This event was also a great example of interdepartmental coordination and public outreach. As always, feel free to contact us with any comments or questions.

Sincerely,

Nicolas H. Bosonetto, PE
Commissioner of Public Works/City Engineer

CONSTITUENT SERVICES

DPW continued to respond to service requests in a timely manner through the [SeeClickFix](#) program. In the past two weeks DPW received 49 new requests and completed 28 requests. The total outstanding requests backlog is now 333, an increase of 21 from the previous reporting period. A majority of outstanding requests are for potholes, storm drains, and tree/brush trimming.

<u>Reporting Period</u> 10/07/19 - 10/20/19		<u>Previous Period</u>	<u>Change</u>
Previous Request Backlog	312		
New Requests	49	45	+4
Completed Requests	28	74	-46
Total Request Backlog	333	312	+21
Potholes	84	72	-13
Storm Drains	77	76	+1
Tree & Brush Pruning	56	53	+1
Traffic, Signals, Signs	18	17	+1
Berm Repairs	14	13	+1
All other categories	84	81	+3
New Requests	49	45	+4
Acknowledged	29	26	+3
Completed & Closed	6	6	0
Open	43	39	+4

ROADWAYS

Traffic Signs, Stripes, and Signals

Replaced missing street name signs at:

- Romano Avenue and South Street.
- Cherry Street and Snow Street.
- Knowlton Terrace (off of Blossom St)
- Fisher Road and Richardson/High Rock Road

Replaced signs at:

- Faded sign at Arlington & Chestnut Street.
- Stop sign knocked down in front of 238 Lincoln

Painted stopbars at industrial Drive/Victoria Lane.

Painted lane designations/stripping in roundabout at Mechanic/John Fitch.

Painted lines at Crocker Elementary, South Street Middle and at Memorial Middle Schools.

Sidewalks

Repaired sidewalk on Lunenburg Street at Moran Square.

Potholes

Pothole patching efforts continued this week with approximately 360 potholes¹ filled at various locations, including the following:

- Everett St
- Everett Street Ext,
- Milk Street,
- Pepper Road,
- Berkley Street,
- Webster Street,
- Robinson Street,
- Nichols Street,
- Pearl Hill Road,
- Intervale Road,
- Lynn Street,
- Connors Passway,
- Ronald Street,
- Pinard Ave,
- Willow Street,
- Pacific Street,
- Beech Street,
- Pratt Street,
- Spring Street;

Snow & Ice

Continued to produce sand at the airport pit. Continued to prepare and inspect trucks, plows and sanders. The first 25 loads (approx. 875 tons) of salt were delivered and moved into the salt shed.



Figure 1- Salt Shed Filling Up

Street-Sweeping

Picked up trash on South Street near Notre Dame School, Airport Road, Main Street, Leighton Street and Harvard Street.

¹ Based on average pothole size of 3.5 inches depth and 1.5 foot wide by 1.5 foot long (volume of 0.66 cubic feet or 0.02 cubic yards)

PARKS & RECREATION

The annual Halloween Maze was held on Sat., October 26, 2019 from 12-2 PM in partnership with the Main Street Trick-or-Treat event. The maze was well attended with well over 500 participants. The maze was set up with the help of the DPW Streets and Parks Divisions.

Repaired bleachers at Crocker Field.

Repaired leak in lady’s bathroom at Coggshall Park.

Installed ‘monkey walk’ at Whitney Park. Removed toys from Whitney Park and placed in storage.

Winterized water systems at Upper Common, Nikadas Field, and Coolidge Park.

Continued work on installation of backstop at Goodrich Park.

CEMETERIES

The cemetery crews continued to maintain the grounds by mowing, trimming, cleaning graves and monuments, picking up litter and painting.

In addition to routine maintenance and administration tasks, the following were completed:

Interments	4
Up righted monuments.....	0
Uncovered/cleaned flat monuments	0
Foundation marking for monuments.....	3
Catch basin repair	0
Trimmed Trees	0
Trimmed shrubs.....	0
Meeting with Families.....	3
Payments - invoiced/processed.....	10
Family Genealogy	1

DPW Engineering and Cemeteries divisions attended a meeting with Computemps to discuss the Forest Hill cemetery database and how best to add in latitude/longitude data for various lots/graves. This work is part of a larger project to purchase and implement a new cemetery management software.

DPW Engineering continued to work with Cemetery Division on GIS/GPS mapping of Forest Hill Cemetery ahead of purchase and implementation of a cemetery management software.

STORM WATER

Rainfall Amounts

Mon 21	Tues 22	Wed 23	Thur 24	Fri 25	Sat 26	Sun 27
0.11"	0.00"	0.70"	0.00"	0.00"	0.04"	1.23"

Courtesy: https://www.cocorahs.org_station_MA-WR-22

DPW Engineering investigated a resident's concern about an overgrown and partially filled in drainage swale. The swale begins at 676 Townsend Street and runs northeast along the shoulder of the road into Lunenburg, crossing two driveways before reaching a cross culvert that conveys flow beneath New West Townsend Road. The swale receives piped flow from two catch basins located on Cortland Avenue and sheet flow from Townsend Street/New West Townsend Road. See attached figure. DPW Engineering found the swale to be overgrown and somewhat full of sediment, but in otherwise fair condition. DPW Engineering will work with DPW Streets to clean the swale.

DPW Engineering provided the Mayor's office with bullet points summarizing key information about the City's stormwater system the City's Municipal Separate Storm Sewer System (MS4) permit:

- The City of Fitchburg owns and operates a stormwater system that collects rain runoff from roadways, parking lots, and other areas and discharges it to various water bodies around the City, such as the North Nashua River. It consists of an estimated 80 miles of piping, 1,600 drain manholes, 7,000 catch basins, and 450 outfalls to water bodies. Responsibility for the operation and maintenance of the stormwater system currently falls under the Department of Public Works (DPW) Streets Division.
- Discharges from the City's stormwater system have been regulated by the Environmental Protection Agency (EPA) under a Municipal Separate Storm Sewer System (MS4) permit since 2003. In 2018, the EPA introduced a new version of the permit. The new permit has much more stringent operation and maintenance requirements and necessitates significantly more administrative work for compliance.
- Over the past three years, the City has allocated approximately \$390,000 annually to fund the extra work required for the new permit. This funding has been used for the following:
 - Purchase of new vacuum truck for cleaning catch basins and culverts
 - Maintenance of street sweepers, since the entire City must now be swept a minimum of twice per year.
 - Purchase of tablets and a survey grade GPS for mapping of the stormwater system
 - Performing drainage system repairs and capital improvements, including drainage projects on Beech Street, Cleghorn Street, Stickney Road, Seneca Street, and Westminster Street
 - Hiring summer interns to perform system mapping and dry weather outfall screening
 - Hiring consultants to assist with the preparation of our Stormwater Management Plan (SWMP), Illicit Discharge Detection and Elimination (IDDE) Plan, and various other technical and administrative permit requirements

Catch Basins

Rebuilt catch basin on Newtonville Avenue.

A new drain line is being installed on Westminster Street just north of Warner Street to alleviate flooding from a collapsed culvert.

Berms

Installed berms at 273 Theresa Street and 15 Warren Street.

WATER SUPPLY

The Water Supply Division produced 28.2 million gallons of drinking water this past week. The Bickford pump station is transferring 4 million gallons per day (MGD) from Bickford Reservoir to Mare Meadow. Reservoirs continued to be inspected and patrolled.

Water Treatment

Reservoir Levels as of 10/24/19			
Northern Reservoirs	Elevation below spillway		Southern Reservoirs
Fitchburg/Ashby	-2.40 feet	-0.34 feet	Meetinghouse
Scott	-2.91 feet	-3.28 feet	Mare Meadow
Lovell	-0.42 feet	-1.05 feet	Bickford
Water Filtration Plant Flows/Production from 10/17/19 through 10/24/19			
	Falulah Plant	Regional Plant	Totals
Raw Water Inlet (Gal)	7,614,000	24,357,000	31,971,000
Backwash to waste (Gal)	874,000	3,029,000	3,903,000
Finish Water - Treated & Distributed (Gal)	6,863,000	21,328,000	28,191,000
Capacity	(6 MGD) 16%	(12 MGD) 25%	(18 MGD) 22.3%
Efficiency	90.1%	87.6%	88.2%

Fire Hydrants

Total Hydrants	Out of Operation	Hydrants Replaced	Hydrants Repaired	Painted	Flushed	Winterized
1,632	1	0	0	0	18	36

- FWD personnel continued flushing hydrants on the High System in the areas of Kimball Street, Beech Street, Ashburnham Street, and Exeter Street.
- On Wednesday FWD personnel began winterizing hydrants the Oak Hill system.
- FWD conducted a hydrant flow test at 36 Flat Rock Road on Wednesday 10/23 at 9:00 am.

- Investigated discolored water complaints on Ashburnham Street and Exeter Street, distribution personnel flush hydrants in these areas.
- FWD observed a fire line flow test at Great Wolf on Tuesday, test was conducted by Johnson Controls and Great Wolf for the old conference center building. It was discovered that the fire sprinkler system at this building does not activate the fire pump at Lacava pump station; Johnson Controls is looking into a solution.

Water Distribution

- On Monday FWD personnel renewed city side of the water service with 1" poly to 164 Clarendon Street. Trench was back filled, compacted and paved, sidewalk was backfilled, compacted and concrete panel replaced.
- On Tuesday FWD personnel paved trenches on Leroy Street at Pershing Street and 49 Kimball Street
- On Wednesday FWD personnel shut off/disconnected at tap the service to 106 Summer Street (Demolished building). Trench was backfilled, compacted and paved.
- On Thursday FWD personnel renewed city side of the water service to 12-14 Summer Street.
- On Friday FWD personnel paved the trench and sidewalk at 12-14 Summer Street.
- Investigated a discolored water complaint at 157 Narrows Road checked area and talked to Treatment personnel who advised work was just done on the PRV's at the Narrows Road station which is believed to be the cause.
- Checked on contractor (Boucher Construction) installing the sewer and water services at 600 Pearl Hill Road.
- FWD repaired the pressure sensing line at Lacava pump station, this line had been plugged and thawing machine was used to try to free it up with no luck. After sitting with the curb stop off, water was discovered coming out of the curb stop box (stop and waste valve installed backwards). We opened the valve and had water coming out of the line and within a few minutes there was full pressure/flow. We reinstalled the lines that were removed inside and is now usable.

Meters and Billing

- Pulled meter and backflow from Beekman Park, ball valve was closed on arrival. Ball valve was opened and water blew out of relief valve (backflow needs to be repaired).
- Pulled meter and backflow from Gateway Park.
- Pulled meter from irrigation system at Nikitas Field and Turtle Park.
- Completed an inspection at 291 Westminster Street to review meter locations and determine what lines are on/off (building is being sold).
- Loaded laptops for reading of water meters city-wide, which will be completed 10/28-10/29.
- Total of 15 real estate closings - final readings completed along with preparation of final bills for attorneys/realtors. Future real estate closing final readings also scheduled.
- Revised billing accounts with information for water meters and MIUs (meter interface units) that were replaced/installed during the course of the week. Missy

and Jennifer completed tracking paperwork for new Neptune meters/MIUs that were taken from stock by employees for installations.

- Revised accounts in the cross connection/backflow testing/tracking software (customer name changes, phone numbers, etc.).
- Revised information in the Tolemi tracking software/database (used by City departments for identifying/tracking problem properties, code violations, etc.).
- Responded to miscellaneous customer inquiries about payments, missing bills, high/low usage, water use restrictions, water main work, and hydrant flushing.

In addition to routine maintenance and administrative tasks, the following services were completed:

Water Permits and Inspections	
Type	Number
Emergency DigSafe Mark-outs	0
DigSafe Mark-outs	14
Inspections of Work on Water System	2
Record Plan Updates	5
Curb Stops Turned off/on	4
Located/cleaned gate/curb boxes	10
Final Readings/Real Estate Closings	15
New Meter Installations	4
Backflow Preventers Tested	30
Residential Appointments Made	0
Totals	84

WASTE WATER

During the third week of October, the WWTF treated 47.4 million gallons of sewage with 3 million gallons bypassing secondary treatment due to heavy rain event. In total, 49.5 tons of organics and 92.3 tons of solids were removed and prevented from entering the Nashua River.

<u>Week of 10/13/2019 - 10/19/2019</u>		
Sewage Flow	47.38	Million Gallons
Rainfall	2.50	inches
Secondary Bypass	2.994	Million Gallons
BOD _{in} (lbs)	103,831	pounds
BOD _{out} (lbs)	4,920	pounds
BOD Removal (%)	95.15%	
TSS _{in} (lbs)	194,460	pounds
TSS _{out} (lbs)	9,910	pounds
TSS Removal (%)	95.16%	

Sewer System

- Plugged pipes and formally abandoned two manholes that were no longer needed on Airport Road. Built an invert in one manhole to direct flow to trunk sewer. By completing this project on Airport Road, the City has re-routed a sewer service to an actual active sewer, and formally abandoned a sewer that was discontinued in 1974. The situation was discovered during routine sewer cleaning a year ago.
- Conducted combination manhole checks due to large rain event last week. A total of 18 out of 179 combination manholes showed transference to either the drain or sewer side of the manhole.
- CSO block checks due to rain event early in the week - only 1 event at CSO-39 at Water/Walnut Street.
- Put mastic sealant on three covers on Summer Street to stop them from rocking.
- Did additional grinding on Townsend Street patches to achieve proper vertical reveal, and chipped out left-over asphalt around manholes.
- Raised a buried manhole off of Water Street near the Flea Market.
- Paved the following projects:
 - Airport Road manhole abandonment.
 - Townsend Street Patches.
 - Walton Street manhole repair.
- Attended meeting with State Department of Housing and Urban Development on Green Acres drain/sewer project. Decided that City would push ahead on combination manhole separations and not join forces with the State's Project to save administration and contractual issues. The combination manhole designs were forwarded to PJ Albert for review and pricing. A total of nine manholes need to be installed prior to the Green Acres Project, and expected to be completed by Winter.
- Continued with edits to DPW On-Call Contractor Contract.
- Discovered buried sewer manholes off of Intervale Avenue and Bond Street – will raise in coming weeks.
- Met with Unutil Representatives for coordination of a line assignment for the First Street as part of the CSO-39 separation project. Unutil will place gas main in sidewalk, allowing a corridor for the Wastewater Division to install a new sewer which is 20 feet deep at certain points.
- Reviewed the Siphon Cleaning Contract Documents from Weston & Sampson, comments will be forwarded next week.
- Met with resident on East Prospect Street who has a sewer easement, marked out a manhole with heavy roots for a Dig-Safe. The manhole will be replaced as it is a problem area.

Attended the 2019 New England Pretreatment Coordinators Workshop, in Lowell, MA. Highview Street constituent issue is resolved.

Participated in Boys & Girls Club of Fitchburg and Leominster's "2nd Annual STEM Career Fair", representing Fitchburg DPW.

Facilitated scientist guest speaker to Fitchburg 8th Graders (at McKay, Memorial, and Longsjö), Mr. David Vallee (NWS/NOAA Hydrologist-in-Charge). Mr. Vallee leads the Northeast River Forecast Center, in Taunton, MA.

Participated in an AWWA webinar on an emerging contaminant of concern.... "PFAS", which is ubiquitous throughout commercially available products of many kinds. This webinar's title was "Shifting PFAS Treatment Costs - Making Polluters Pay".

ENGINEERING

DPW Engineering attended a meeting with the Fitchburg Housing Authority (FHA) and their architect and engineer for the proposed utility work at the Green Acres Housing Development. DPW Engineering, DPW Streets, and DPW WW plan to work together on separating the Combination Manholes in the housing development and performing necessary spot repairs to the drainage system ahead of the work by the FHA next year.

DPW Engineering met with ChanneLine to discuss their culvert lining product, which essentially consists of pre-manufactured glass reinforced plastic (GRP) panels with structural tongue-and-groove joints that snap together in place. Once the panels are in place the annular space is grouted. The grout fills void space between the existing culvert and the GRP panels and adheres to the outer skin of the GRP panels, which are treated with a bonded graded aggregate. DPW Engineering is interested in this product to address issues with a culvert running beneath the Forest Hill Cemetery and Nikitas Field, and will follow up with ChanneLine on cost.

DPW Engineering visited East Prospect Street to investigate a resident complaint of a 6-inch depression in the road. Upon inspection, DPW Engineering observed that the water system on this road was replaced at some point in the recent past, and while the trench patches appear to be in good shape, the rest of the street has fallen apart and settled about 6 inches below the trench patches.

DPW Engineering and Commissioner Bosonetto visited the site of a proposed parking lot across from 431 Westminster Street to identify the best location for a crosswalk based on sight distances. See attached figure. The City agreed to install this crosswalk and accompanying sidewalk improvements in exchange for a drainage easement from the property owner. DPW Engineering presented this configuration to the property owner and is awaiting approval.

DPW Engineering reviewed a plan for a proposed single family home at 160 Stickney Road and provided comments to DPW WW.

Continued Design evaluations for ADA Ramps and crosswalks at intersection of Franklin Rd and Oak Hill Road.

Finished ADA ramps and crosswalk design for #855 John Fitch Highway.

Began ADA ramps and crosswalk design for #350 John Fitch Highway.

Engineering Services			
	<u>Type</u>	<u>Number</u>	<u>Fees</u>
PERMITS	Dumpster Permits	2	
	Trench Permits		
	Excavation Permits		
	Driveway Permits	1	
	Sign Permits		
	Sewer Permits		
INSPECTIONS	Driveway Inspections	1	n/a
	Trench Inspections		n/a
	Site Inspections	3	n/a
	Dig-Safe requests		n/a
	Sewer/Drain Inspections	5	n/a
	Street Light Inspection	4	n/a
	New Address Assignments	1	n/a
	Parcel Updates		n/a
	Planning Reviews	3	n/a
	Totals	21	\$0.00

ADMINISTRATION

- Reviewed plow contracts received and corresponded with prospective contractors and their insurance agents. At this point we have 7 contractors that have submitted complete packages.
- Continued to work on calculating the industrial billings for FY20 Q2.
- Continued to run reports for the water department financial review.
- Attended meeting to discuss future DPW capital needs. Researched state and collaborative contracts for equipment and sent to Commissioner, Superintendent, Civil Engineer.
- All DPW divisions processed bi-weekly payroll.
- Reviewed all DPW Department accounts for accuracy and monitored budgets.

Invoicing, Warrants, and Payrolls

	Invoices		Deposits		Billings	Payroll
<u>Division</u>	<u>Number</u>	<u>Total \$</u>	<u>Number</u>	<u>Total \$</u>		
Streets/Admin/Engineering	59	\$ 39,393	*Note 1			\$ 67,064
Cemeteries						\$ 11,207
Parks						\$ 7,321
Recreation	8	\$ 378				\$ 20,211
Water Supply	43	\$ 48,030				\$ 56,971
Waste Water	54	\$ 114,132	*Note 2	\$ 38,380		\$ 74,969
Total	164	\$ 201,933		\$ 38,380	\$ -	\$237,744
*1 - Engineering Permits & Performance Bonds						
*2 - Septage at East Plant (Gallons)						