



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

DPW Weekly Update October 14 - October 20, 2019

Dear Mayor, Councilors, and Colleagues:

This past week we experienced another extreme precipitation event when 3 inches of rain fell during Thursday morning's storm. NOAA defines an extreme precipitation event as anytime more than 2 inches of rain falls in a day. According to NOAA and MassDEP sources¹, overall precipitation and extreme precipitation events in our area are projected to increase in the coming decades.

Last week's storm event caused localized street flooding, downed trees, power disruptions to some of our treatment facilities, combined sewer overflows, and bypasses at the wastewater treatment plant. Luckily, the storm occurred at midnight and much of the disruptions were mitigated by DPW crews before most residents awoke.

DPW's storm response included Street Division crews mobilizing at 1:00 AM and clearing debris from catch basins and culverts to alleviate flooding. Downed trees were cleared from Sanborn Street, Mountain Avenue, Coggshall Park and Coolidge Park. Areas prone to flooding issues in the past were checked but no major issues were observed. The maximum rain intensity was 1½ inches per hour and this relatively low intensity reduced the amount of CSO overflow events. Only 4 out of 11 combined sewer overflow (CSO) regulators activated.

In order to prepare the city's infrastructure for the increase in extreme precipitation events, DPW Engineering will be kick-starting the Municipal Vulnerability Preparedness (MVP) plan with a "Core Team" meeting scheduled for November 1st. By completing the MVP Planning Grant and Hazard Mitigation Plan update, Fitchburg will be eligible to apply to MVP Action Grants and FEMA Grants to implement stormwater and flooding mitigation projects.

As always, feel free to contact us with any comments or questions.

Sincerely,

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

¹ <https://statesummaries.ncics.org/chapter/ma/>

CONSTITUENT SERVICES

DPW continued to respond to service requests in a timely manner through the [SeeClickFix](#) program. In the past two weeks DPW received 45 new requests and completed 74 requests. The total outstanding requests backlog is now 312, a decrease of 29 from the previous reporting period. A majority of outstanding requests are for potholes, storm drains, and tree/brush trimming.

<u>Reporting Period</u> <u>10/07/19 - 10/20/19</u>		<u>Previous</u>	<u>Change</u>
Previous Request Backlog	341		
New Requests	45	59	-14
Completed Requests	74	42	+32
Total Request Backlog	312	341	-29
Potholes	72	85	-13
Storm Drains	76	85	-9
Tree & Brush Pruning	53	57	-4
Traffic, Signals, Signs	17	19	-2
Berm Repairs	13	13	0
All other categories	81	82	-1
New Requests	45	59	-14
Acknowledged	26	32	-6
Completed & Closed	6	10	-4
Open	39	49	-10

ROADWAYS

Traffic Signs, Stripes, and Signals

Painted crosswalks on Boutelle Street.

Retimed traffic signal at River Street and Wallace Road to allow for concurrent green light on River Street. Traffic congestion has significantly improved with queues no longer forming during rush hours.

Potholes

Pothole patching efforts continued this week with approximately 200 potholes² filled at various locations, including the following:

- Fairlawn Street,
- Pearl Hill Road,
- Ashburnham Hill Road;

Paved Temple Street where the potholes were previously milled out.

² 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)

Snow & Ice

Continued to produce sand at the airport pit.

Signed up four DPW staff members to attend training on salt spreader calibration and snow/ice pretreatment techniques.

Seven loads (250 tons) of salt were delivered and moved into the salt shed.

DPW Engineering prepared GIS maps for salt treatment zones and plowing districts.

PARKS & RECREATION

Recreation director met with Children's Librarian to discuss time, date, themes and potential stories for the annual Winter Festival.

Reviewed and updated rental application for the Stonehouse and Gazebo at Coggshall Park.

In Partnership with the annual Trick or Treat on Main Street the Recreation Department will be holding its annual Halloween Party on October 26, 2019 from 12-2pm at the Fitchburg Senior Center. The Party will include a spooky maze, Halloween themed arts and crafts and movie screening.

Biddy League Registration is available online at www.fitchburgma.gov/activities. For more information visit www.fitchburgma.gov/biddyleague.

The Fitchburg Recreation Department is pleased to announce the 2019-2020 Walking and Jogging Club registration is now available. The Walking and Jogging Club is a partnership between the City of Fitchburg and Fitchburg State University which allows local residents to escape the cold and wet winter months and walk inside at the Fitchburg State University Recreation Center's jogging track.

Fitchburg State welcomes Fitchburg residents of all ages to walk or jog on the 1/11th of a mile track, which is suspended above the gymnasium on the second floor. Minors must be accompanied by an adult. The program is open Mondays through Fridays from 6:00 AM to 12:00 PM, Saturdays from 10:00 AM to 3:00 PM and Sundays from 3:00 PM to 10:00 PM. The walking club ends on April 1, 2020. Registration is required and is now available in the City of Fitchburg Recreation Department.

Trimmed shrubs at street hockey rinks and at the Steam Line Trail.

Picked up trash and cut grass in parks.

Crews continued the installation of the backstop at Goodrich Playground.

Removed graffiti from statue at Main Street and Prichard Street.

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.....	4
Payments - invoiced/ processed.....	7
Family Genealogy	6

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 14	Tues 15	Wed 16	Thur 17	Fri 18	Sat 19	Sun 20
0.00"	0.00"	0.00"	2.97"	0.06"	0.00"	0.00"

Courtesy: <https://www.cocorahs.org>

DPW Engineering received and began reviewing the draft Alternatives Analysis report from Tighe & Bond for McTaggart's Pond Dam. DPW Engineering will finalize its review of the report this week and provide comments back to T&B. Once the report is complete, T&B and DPW Engineering will begin preparations for presentation to the rest of the City and the public. Based on information contained in the report, the City will be able to make an informed decision about whether to repair or remove McTaggart's Pond Dam.

DPW Engineering reviewed a proposal from Tighe & Bond to perform a Phase I inspection of the Waste Water Treatment Plant Dam in West Fitchburg and provided feedback to the Deputy Commissioner of Wastewater. This dam impounds water from both Flagg Brook and the Whitman River. Waste Water Treatment Plant Dam was originally constructed to store water for manufacturing operations. There is no current use associated with the impoundment other than some limited access for recreation.

DPW Engineering went on the Travis & Sherman morning show on WPKZ and gave a short background on stormwater and the City's MS4 permit from the EPA. Per permit requirements, the main message conveyed was about cleanup of leaf litter. Residents should be sure to properly bag their leaf litter and yard waste, and not dump it in catch basins, streams, lakes or ponds or blow it into the street. Not only does leaf litter and yard waste clog the catch basins and lead to street flooding, but the organic material also breaks down and contributes to excess phosphorus in receiving water bodies.

Catch Basins

Rebuilt catch basin on Westminster Street.

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

WATER SUPPLY

The Water Supply Division produced 29.6 million gallons of drinking water this past week. The Bickford pump station was transferring 5 million gallons per day (MGD) from Bickford Reservoir to Mare Meadow but Thursday's storm knocked out power and we are still awaiting for National Grid to restore. Reservoirs continued to be inspected and patrolled. An ATV trail was blocked off to protect the Kirby property in the Fitchburg Reservoir watershed.

Water Treatment

Reservoir Levels as of 10/17/2019			
Northern Reservoirs	Elevation below spillway		Southern Reservoirs
Fitchburg/Ashby	-2.54 feet	-0.06 feet	Meetinghouse
Scott	-3.80 feet	-3.48 feet	Mare Meadow
Lovell	-0.62 feet	-1.34 feet	Bickford
Water Filtration Plant Flows/Production from 10/11/19 through 10/17/19			
	Falulah Plant	Regional Plant	Totals
Raw Water Inlet (Gal)	7,813,000	25,680,000	33,493,000
Backwash to waste (Gal)	892,000	2,954,000	3,846,000
Finish Water - Treated & Distributed (Gal)	6,921,000	22,726,000	29,647,000
Capacity	16%	27%	23%
Efficiency	88.6%	88.5%	88.5%

Fire Hydrants

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

On Thursday, FWD personnel repaired a hydrant that was hit (hit and run) at 203 Airport Road (reported on Thursday morning).

Water Distribution

- DPW Engineering finalized the RFP for replacement of the transmission line between the Falulah Water Treatment Facility and the Falulah water storage tanks and plans to distribute to the on-call consultants Monday this week.
- FWD set up appointments for backflow testing. Left door tags on properties as necessary to get property owners to set up appointments for backflow testing.
- FWD investigated zero/repeat readings and tampers discovered during monthly billing. New Neptune meters/MIUs (meter interface units aka electronic registers) are being installed whenever access is gained to a house/building (for any purpose, not just for investigation of zero usage).
- Inspected/sealed new meter installations by private contractors and installed MIUs (plumbers installed the meters and FWD personnel inspect the installation and install the MIU).
- Removed seasonal meters at Coolidge Park and Crocker Splash Park.
- Completed a Cross Connection Survey at Munksjo Paper (River Street) and also reviewed the meter situation at the same time for the meter upgrade project. There is one 4-inch meter that now only supplies a bathroom and two hot water heaters and the water usage is not enough to register on the 4-inch meter – this meter should be downsized to a 1-inch meter. There is a 3-inch meter that has been removed and the line is shut off/disconnected outside the building. There is also a 6-inch meter that is shut off right at the meter and reportedly has not been used in over 10 years; however, the owner believes it cannot be shut off outside of the building because the line may be connected to other fire service lines – this will have to be investigated further (we would like to see line shut off and meter removed so it can be removed from monthly bill run).
- On Friday, FWD personnel excavated and repaired a leak on the 8-inch water main on Pershing Street at LeRoy Street – joints had pushed apart due to lack of thrust block at 45 degree bend near to failed joint. This leak was on a new 8-inch water main that M.E. Smith installed in 2017. The repair and cause of failure was documented with pictures and Weston & Sampson (who provided construction oversight for this work/project) was notified of this issue.
- FWD personnel finished cleaning and then painted the 16-inch by 16-inch by 4-inch tee that was removed from the water main in front of City Hall.
- Investigated a possible water leak (water on sidewalk) at 126 Mechanic Street, a sample was collected and determined it was a sewer issue. Wastewater was notified.
- On Tuesday, FWD personnel excavated and repaired a water service leak at 164 Clarendon Street. Trench was backfilled, compacted, and paved.
- On Tuesday, FWD personnel charged and flushed the new 8-inch fire/domestic service line to City Hall. It was then shut off in street and the contractor then pressure tested (passed) and disinfected the line on Wednesday.
- On Wednesday morning at 2:00 a.m. treatment personnel reported extremely high usage/flows on the High System (treatment personnel were called in due to low tank alarm). On call distribution personnel came in and started to look for a leak (nothing had been reported). The leak was found on an 8-inch private water line at 35 Daniels Street (Seaboard Box Company). The water main was shut off and isolated by 3:30 a.m. The building owner and Fitchburg Fire were notified.

- A contractor (Hydra-Tech) responded to 35 Daniels Street to complete repairs to the broken water line. The break was found to be under the building on fire sprinkler riser #3. This line was isolated and the 8-inch water line was turned back on.
- On Wednesday, FWD personnel attempted to renew city side of the water service at 17-19 Summer Street. The tap was excavated but when personnel attempted to shut it off the "T" head broke off the corporation. A shutdown of the water main will have to be completed to renew service – this will be scheduled for next week so customers can be given adequate notification.
- On Wednesday, FWD personnel cold-patched the trench and loamed/seeded around curb stop box at 49 Kimball Road.

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	17
Inspections of Work on Water System	3
Record Plan Updates	12
Curb Stops Turned off/on	7
Located/cleaned gate/curb boxes	5
Final Readings/Real Estate Closings	11
New Meter Installations	5
Backflow Preventers Tested	19
Residential Appointments Made	11
Totals	90

WASTE WATER

During the first week of October, the WWTF treated 40.5 million gallons of sewage with 1.15 million gallons bypassing secondary treatment due to rain event. In total, 47.6 tons of organics and 86.7 tons of solids were removed and prevented from entering the Nashua River.

Week of 10/06/2019 - 10/12/2019		
Sewage Flow	40.48	Million Gallons
Rainfall	1.10	inches
Secondary Bypass	1.153	Million Gallons
BOD _{in} (lbs)	101,556	pounds
BOD _{out} (lbs)	6,453	pounds
BOD Removal (%)	94.44%	
TSS _{in} (lbs)	186,303	pounds
TSS _{out} (lbs)	12,874	pounds
TSS Removal (%)	94.32%	

Sewer System

- Installed a new summit sewer manhole on the sewer line in Appleton Circle to remove a combination manhole (CMH). We now have 179 CMHs remaining, down from an original count of 262 CMHs. (See picture)
- During this week's rain event, we received about 3" of rain. Since the rain was a steady pace, only 4 out of 11 combined sewer overflow (CSO) regulators activated. The maximum rain intensity was 1½ inches per hour. The relatively low intensity reduced the amount of CSO overflow events. During the coming week, the City will inspect combination manholes for flow transference between the drainage and sanitary system using a tell-tale block system. These checks are required by the EPA for any rain event over 2" in 24 hours.
- The City has also begun using its new Sewer Flow Meter web-based platform called ADS PRISM to monitor CSOs and problem areas. The system can send notifications and alarms to the Sewer Team and provides data access from anywhere through a web connection.



Figure 1: Appleton Circle, CMH Separation.

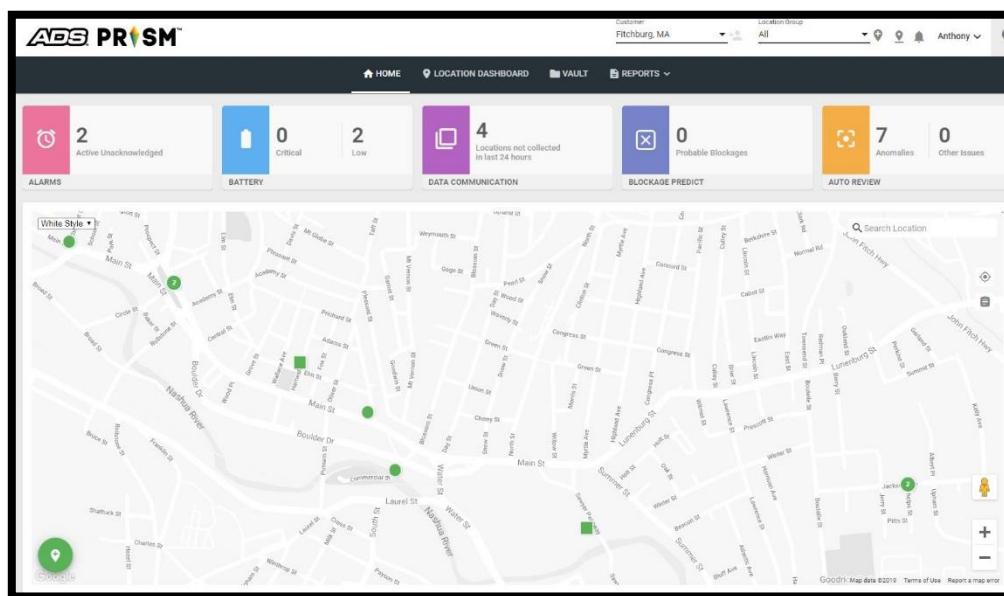


Figure 2: "Screenshot" of ADS "PRISM" web platform for monitoring CSOs.

- Checked 40 sewer problem areas during storm event - no issues were noted by the Collections Crew.
- Cut brush around the pipe storage garage at the West WWTF.
- Used new grinder machine to prepare three patches on Townsend Street in preparation for paving.

- Installed butyl to keep eight covers from rattling (mostly on Summer Street, near Boutelle Street).
- Paved one trench on Townsend Street (the new manhole we installed on Appleton Circle), and installed base course on the manhole on Walton Street that we replaced the frame and cover.
- Removed a cracked manhole cover that fell into a manhole on Bemis Road.
- Assisted a resident with a sewer service issue on Kimball Road by reviewing a CCTV of the sewer lateral, provided homeowner with some options for repair, and a list of contractor's bonded in the City to do replacement work.
- Coordinated with the State on the FHA Green Acres drainage project; we will be holding a meeting next week with all stakeholders.
- Conducted a dye test at #126 Mechanic Street with Health Department; homeowner's lateral was found to be blocked, and sewerage was escaping adjacent to sidewalk. Health Department is working with property owner on a repair.
- Met a Contractor and FFD at the North St. Station to discuss repair of a damaged pump station hatch. Contractor to provide WW & FFD with a quote for review.
- Ordered \$3,000 in road plates to cover open trenches/manholes.

Sewer System

Deputy Commissioner of Waste Water attended MWWA 1-day seminar on "PFAS", "Understanding EPA's New Risk Assessment Requirements", and the "Proposed Revisions to 314 CMR 4.00 - MA Surface Water Quality Standards".

Participated in monthly morning drive radio segment, on WPKZ's 'Morning Kommute' program, with Travis & Sherman.

Coordinated private property access for acoustic consultant to conduct overnight "background noise" sound measurements, to address nuisance noise at East Plant.

Attended City Council Meeting, where easements for gas utility service to the East Plant were voted by Council.

Submitted grant funding application to Fitchburg Cultural Council, for "The Continuing Adventures of CC Sewercam" (sequel), for 2020 release.

Continuing coordination for Massachusetts STEM Week 2019 presentations at Fitchburg Public Schools (McKay, Memorial and Longsjo), for Friday - Oct. 25th.

Committed to participating in Boys & Girls Club of Fitchburg and Leominster, for BGCFL's STEM Week Event on Thursday evening (Oct. 24th).

ENGINEERING

DPW Engineering staff attended workshop held in Burlington to learn to use new management software tools from StreetScan. Staff provided very positive feedback on the capabilities of the new system.

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.

GASB 34-FIXED ASSETS draft submitted to City Auditor for review.

LUCA review completed. No appeals necessary from City of Fitchburg.

Engineering Services			
	<u>Type</u>	<u>Number</u>	<u>Fees</u>
PERMITS	Dumpster Permits		
	Trench Permits		
	Excavation Permits		
	Driveway Permits	2	
	Sign Permits		
	Sewer Permits		
INSPECTIONS	Driveway Inspections		n/a
	Trench Inspections	5	n/a
	Site Inspections	10	n/a
	Dig-Safe requests		n/a
	Sewer/Drain Inspections		n/a
	Street Light Inspection		n/a
	New Address Assignments		n/a
	Parcel Updates	2	n/a
	Planning Reviews	1	n/a
	Totals	20	\$0.00

ADMINISTRATION

- Received several plow contracts back from interested contractors- most are incomplete at this point. Followed up with insurance companies to secure correct documentation. Answered questions that have come up regarding our requirements to prospective contractors.
- Finalized Chapter 90 reimbursement paperwork for 2 projects now complete.
 - Microsurfacing \$204,422
 - Salt shed \$57,712
- Worked on calculating the industrial billings for FY20 Q2.
- Reviewed applicant qualifications for the wastewater administration coordinator position.

- Submitted the October 2019 sewer commitment to the Treasurer's office.
- Reviewed all DPW Department accounts for accuracy and monitored budgets.

Invoicing, Warrants, and Payrolls						
	Invoices		Deposits		Billings	Payroll
Division	Number	Total \$	Number	Total \$		
Streets/ Admin/ Engineering			*Note 1			
Cemeteries	8	\$ 675				
Parks						
Recreation	3	\$ 18,381				
Water Supply	43	\$ 46,374			\$ 548,393	
Waste Water	13	\$ 5,965	*Note 2		\$ 35,730	\$ 899,657
			*Note 3		\$ 20,965	
Total	67	\$ 71,394	-	\$ 56,695	\$ 1,448,050	\$ -

*1 - Engineering Permits & Performance Bonds

*2 - Septage at East Plant (Gallons) 420,353

*3- Annual Repayment Agreement pmt 1 of 20