

City of  
**Fitchburg**



Department of  
**Public Works**

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

**DPW Weekly Update December 16 - December 23, 2019**

Dear Mayor, Councilors, and Colleagues:

This week the City Council and the Conservation Commission voted to accept two land preservation grants for the Jewell Hill Farm properties. These conservation grants are a \$237,440 LAND grant from EOEEA and a \$94,200 grant from the Trustees of Reservations that will together forever protect 138 acres of land in Fitchburg's northern watershed at a net cost of \$18,000 to the city.

DPW's Water Supply Division, along with the Janet Morrison and various non-profits, have been working to protect our drinking water supply by obtaining conservation restrictions (CRs) or fee-simple title over properties within the watershed to forever protect the land from development. Over the past decade, the City has been able to preserve 731 acres of land, which together with this week's addition, means the City will have a total of 869 acres of protected land in the northern and southern watersheds.

Jewell Hill Farm consists of a total of 298 acres of land in the Towns of Ashburnham, Ashby and the City of Fitchburg and it is located within our Northern Watershed. Additional work is underway by the Deputy Commissioner of Water Supply to protect the remaining 160 acres of Jewell Hill Farm in Ashby as well as to purchase a 20 acre lot adjacent to the Fitchburg Reservoir. The expected total of preserved land will be 1,049 acres. Protecting land from development within the watersheds is critical to preserving our pristine drinking water for future generations.

As always, if you have any comments or questions, please feel free to contact us.

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 37 new requests and closed 26 requests. The total outstanding requests backlog is now 313, an increase of 10 from the previous reporting period. A majority of outstanding requests are for potholes, storm drains, and tree/brush trimming.

<u>Reporting Period</u> 12/2/19 - 12/16/19		<u>Previous Period</u>	<u>Change</u>
<b>Previous Request Backlog</b>	<b>302</b>		
New Requests	37	41	-4
Completed Requests	26	25	1
<b>Total Request Backlog</b>	<b>313</b>	<b>302</b>	<b>+11</b>
Potholes	79	69	10
Storm Drains	63	62	1
Tree & Brush Pruning	49	48	1
Traffic, Signals, Signs	17	16	1
Berm Repairs	12	12	0
All other categories	93	95	-2
<b>New Requests</b>	<b>37</b>	<b>41</b>	<b>-4</b>
Acknowledged	2	4	-2
Completed & Closed	4	3	1
Open	33	38	-5

Continued work on redesign of DPW webpages. Nate LaRose is leading this effort for DPW.

## ROADWAYS

### Snow Operations

	Saturday 12/14	Sunday 12/15	Monday 12/16	Tuesday 12/17	Wednesday 12/18	Thursday 12/19	Friday 12/20
Rain Depth (in)	T	1.43	T	0.0	T	0.0	0.0
Snow Depth (in)	0.5	0.0	T	4.2	T	0.0	0.0

Courtesy: <https://www.cocorahs.org/ViewData/StationPrecipSummary.aspx>

This week brought extreme cold, leading to ice formation in many of the areas that remained soggy from last week's rain. DPW crews were out in full force throughout the week salting and sanding as needed. On Tuesday, crews once again plowed a significant snow storm that produced 4.2-inches of snowfall.

Streets Superintendent, Streets General Foreman, and Commissioner attended third and final snow operations training course offered by BayState Roads. The final course covered the use of liquids for pretreatment and de-icing operations. These courses have been very beneficial as the DPW continues its transition from sand to salt and liquids.

## Sidewalks

Sidewalks continued to be cleared of snow throughout the city. Parking lots and garages were also cleared of snow.

DPW Engineering met with members of the Disability Commission and the Library to discuss ADA sidewalk improvements.

DPW Engineering performed a review of plans for the proposed handicap ramp replacement at the Fitchburg Court House and provided comments to the project's engineer.

## Potholes

Pothole patching efforts continued during the week using cold-patch<sup>1</sup> filled at various locations, including the following:

- John Fitch Highway,
- Mechanic Street,
- Water Street,
- Wanoosnoc Road,
- Bemis Road,
- Ashburnham Street,
- Henry Street,
- Pine Street,
- Rollstone Street,
- Sheldon Street,
- River Street,
- Westminster Street.

## PARKS & RECREATION

Park Division crews assisted in the snow plowing, salting/sanding, and sidewalk clearing of the city throughout the snow storms.

Biddy League Practices began on 12/9/2019 on Monday, Tuesday and Wednesdays. Attended all practices. Provided equipment to coaches and met with parents.

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. Starting on October 1, 2019, 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.

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<sup>1</sup> 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)

## CEMETERIES

Cemeteries crews aided in the snow storm clean up by plowing the cemetery properties, sidewalks and roadways.

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

Full Interments .....	2
Inurnments.....	0
Up righted monuments .....	0
Uncovered/cleaned flat monuments.....	0
Foundation marking for monuments .....	0
Catch basin repair .....	0
Trimmed Trees .....	0
Trimmed shrubs .....	0
Meeting with Families .....	1
Payments - invoiced/processed .....	6
Family Genealogy .....	3

## ENGINEERING

### Stormwater

The City experienced heavy rain over the weekend. On Monday, DPW Engineering performed field inspections of areas with problematic drainage systems and low-lying areas to ensure that there were no flooding issues, dam issues, etc.

DPW Engineering finished performing an in-house review of the draft FEMA Flood Insurance Rate Maps (FIRMs) that were recently updated by the USGS. DPW Engineering also organized and attended an inter-department review session to solicit feedback from other interested departments. DPW Engineering compiled all comments and sent to the USGS. The FIRMs are used by the City and by insurance companies to determine the extent of potential flood hazards along the City's streams and rivers, most notably the North Nashua River. The last updates to Fitchburg's FIRMs were completed in 1991. Since that time, a significant amount of new and more accurate data has been collected regarding precipitation, stream flows, topography, etc. In addition, there has been a significant amount of development in and around the City that impacts how and when precipitation makes its way into the City's water bodies. These new maps take all of this new data into account, and represent a more accurate prediction of the flood hazards in Fitchburg.

DPW Engineering continued working on Phase I dam inspection reports and Emergency Action Plan updates for various dams as required per the Office of Dam Safety (ODS).

### Site Reviews & Inspections

DPW Engineering performed a review of a proposed parking lot at 8 Congress Place and provided comments to the Building Department.

Reviewed and commented on plans for ADA ramp and sidewalk work proposed for the courthouse. Reviewed plans for ADA ramp at 15-17 Lunenburg Street.

Asset Management

DPW Engineering continued development of GIS based asset management system. Continued to review Streetscan pavement management system deliverables.

Permits and Inspections

DPW issued and inspected 24 projects, including:

- 53 Forest Street - Water Service
- Unitil Gas - 7 excavation permits
- Woodland Estates - Sewer Connection
- Mechanic Street - Emergency sewer repair
- Spruce at Salem Street - Water repair
- Street lights - Cortland Avenue & Daniels Street

<b>Engineering Services</b>			
	<u>Type</u>	<u>Number</u>	<u>Fees</u>
<b>PERMITS</b>	Dumpster Permits	0	
	Trench Permits	1	\$75.00
	Excavation Permits	7	\$525.00
	Driveway Permits	0	
	Sign Permits	0	
	Sewer Permits	1	\$2,000.00
<b>INSPECTIONS</b>	Driveway Inspections	0	n/a
	Trench Inspections	4	n/a
	Site Inspections	5	n/a
	Dig-Safe requests	2	n/a
	Sewer/Drain Inspections	2	n/a
	Street Light Inspection	2	n/a
	New Address Assignments	0	n/a
	Parcel Updates	5	n/a
	Planning Reviews	1	n/a
	<b>Totals</b>	<b>30</b>	<b>\$2,600.00</b>

**WATER SUPPLY**

The Water Supply Division produced 28.3 million gallons of drinking water this past week. No transfer of water between reservoirs is taking place. Reservoirs continued to be inspected and patrolled.

Wyman Pond gate is open 8 inches, it was opened 4 more inches this week to compensate for the rainfall/snowmelt that occurred and maintain the 2-foot drawdown for the winter months. The Reservoir Caretaker is monitoring the level on a daily basis and opening/closing the discharge gate as needed to maintain seasonal drawdown.

Protected 138 acres of watershed woodland by obtaining conservation easements.

Water Treatment

Reservoir Levels as of 12/20/19			
Northern Reservoirs	Elevation below spillway		Southern Reservoirs
Fitchburg/Ashby	Full	Full	Meetinghouse
Scott	Full	Full	Mare Meadow
Lovell	Full	Full	Bickford
Water Filtration Plant Flows/Production from 12/13/19 through 12/19/19			
	Falulah Plant	Regional Plant	Totals
Raw Water Inlet (Gal)	5,485,000	26,948,000	32,433,000
Backwash to waste (Gal)	834,000	3,314,000	4,148,000
Finish Water - Treated & Distributed (Gal)	4,651,000	23,634,000	28,285,000
Capacity	(6 MGD) 13%	(12 MGD) 28%	(18 MGD) 22%
Efficiency	85%	88%	87%

Fire Hydrants

Total Hydrants	Out of Operation	Hydrants Replaced	Hydrants Repaired	Painted	Flushed	Winterized
1,632	2	0	0	0	0	0

- Tuesday, 12/17 - FWD personnel investigated the condition of a fire hydrant that was hit on Foster Street at Rollstone. No damage to hydrant was found.

## Water Distribution

- Monday, 12/16 - FWD personnel repaired a leak on Salem Street at Spruce, leak was found at the tap on a 1-inch service line serving 18 Salem Street. Gas main and sewer/drain pipes were in the same trench and, accordingly, much work had to be done by hand. Trench was backfilled, compacted and cold patched.
- Tuesday, 12/17 - FWD personnel performed snow plowing and treated/sanded as needed during the snow storm.
- Wednesday, 12/18 - FWD personnel excavated and repaired the curb stop at 38 Ward Street. Trench was backfilled and compacted to grade.
- Wednesday, 12/18 - FWD personnel prepped vehicles and equipment for bitter cold weather forecasted for Thursday into Friday, which included adding diesel additive and checking anti-freeze levels and temperature ratings.
- Thursday, 12/19 - FWD personnel worked through the bitter cold excavating and repairing a leak on a 1-inch water service at the tap in front of 33-39 Leyte Road. Trench was backfilled and compacted.
- Friday, 12/20 - FWD personnel finished clean up and cold patched the sidewalk in front of 33-39 Leyte Rd. Also dropped off W22 (Ford utility body) at CMA for front-end work and brought W40 (6-wheel dump truck) to the DPW Mechanics to have the exhaust welded. Thank you DPW Mechanics!
- Hauled clean fill from the city pit to Rindge Road.
- Picked up cold patch at Keating's and salt/sand from DPW.
- Investigated water flowing into basement at 31 Phillips Street - determined to be groundwater.
- Investigated water running down driveway at 115 Arlington Street - testing of sample that was collected indicated it was groundwater.
- Investigated low pressure at 51 York Avenue - changed meter and plumber change wheel valve. Water flow/pressure was restored and owner was pleased.
- Investigated a report of a hole in the sidewalk in front of 91 Falulah Street, it was found to be a missing curb box cover (a new cover was installed).
- Investigated possible "lead" water service lines reported by the meter installation contractor (BayState) at 15 Tremont Street, 30 Phillips Street, and 442 Shea Street. All services were found to be brass pipe (not lead pipe) in the cellar with threaded valves.
- FWD personnel completed weekly inspections, maintenance, and cleaning of vehicles/equipment.

## Meters and Billing

- 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).
- Disassembled old water meters for disposal/recycling
- Place door hangers at 12 locations (condo units off Franklin Road) where customers are due or past due to have their backflow device tested.
- Profiled water meter at 25-27 Bourque Terrace. Owner complained of a high bill - a total of 18 units of water had been used. There are 5 people home all day long and 9 total living at the property - this usage is not high for the number of people residing at this address.

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

Water Permits and Inspections	
Type	Number
Emergency DigSafe Mark-outs	6
DigSafe Mark-outs	1
Inspections of Work on Water System	3
Record Plan Updates	7
Curb Stops Turned off/on	15
Located/cleaned gate/curb boxes	15
Final Readings/Real Estate Closings	12
New Meter Installations	9
Backflow Preventers Tested	31
Residential Appointments Made	7
<b>Totals</b>	<b>106</b>

### WASTE WATER

Due to the heavy rainfall and melting snowpack of the past week, the WWTF had to process 113.6 million gallons of sewage - almost triple the typical flow rate of 42.5 MGD. Due to the heavy flows, 25.2 million gallons bypassed the secondary treatment in order to protect the plant operations. The heavy flow meant that the usual treatment rates of 97% removal of BOD and TSS could not be reached, and only about 87% removal was achieved. In total, 62.7 tons of organics and 108 tons of solids were removed and prevented from entering the Nashua River.

Week of 12/08/2019 - 12/14/2019		
Sewage Flow	113.56	Million Gallons
Rainfall	4.86	inches
Secondary Bypass	25.24	Million Gallons
BOD <sub>in</sub> (lbs)	138,764	pounds
BOD <sub>out</sub> (lbs)	13,409	pounds
BOD Removal (%)	86.69%	
TSS <sub>in</sub> (lbs)	238,018	pounds
TSS <sub>out</sub> (lbs)	22,057	pounds
TSS Removal (%)	87.49%	

- Coordinated Wastewater Managers Meeting, to introduce new Wastewater Administrations Coordinator (Wendy Boulay) to the team, and to discuss office workflow subjects.
- Working with Recreation Director, Nate LaRose, for updating the DPW – Wastewater Division’s webpage.

- Appeared on WPKZ, for monthly wastewater morning drive radio segment on the K-Zone Kommute, with Travis & Sherman.
- Coordinating with Unutil, for the gas service replacement project for the East WWTF.
- Coordinating with Unutil, for procurement meeting on West Plant's prospective Anaerobic Digestion Project.
- Provided input for Wastewater, towards DPW's "State of the City" submission to the Mayor's Office.
- Continued support of Boys and Girls of Fitchburg and Leominster, for the "Future Cities Competition, 2019/2020", as a mentor.
- Second Stage, Secondary System's Pumps Gallery Emergency Eye Wash/Shower: replacing shower (in progress).
- Gas Service Line Replacement Project: Unutil's contractor started Wednesday; cutting paved access drive, and excavating to install directional drill gas service replacement line (ongoing).



*Fig. 1: Second Stage Pump Gallery. Replacement Emergency Shower.*



*Fig. 2: Gas Service Replacement Work (trenching along guardrail, at East WWTF).*

### Sewer System

- Assisted the Water Department on Salem Street with Vactor.
- Finished conducting a pipe repair on a near #56 Plymouth Street. We checked the repair three times throughout the week, and everything appears to be flowing normally.
- During the large rain event on 12/14, a large pine branch was found in the headworks at the WWTF. The Collections Team checked all river manholes and the trunk sewer on the Easement at Airport. There were no obvious signs of where or how the branch entered into the sewer system.
- Helped Streets Division plow for one day.
- Checked combination manholes due to a rain event on 12/14/19. We received 2.5 inches according to our rain gauge at DPW. Five (5) Combination manholes activated during the event. The City is required to check combination manhole transferences after every rain event larger than 2-inches in 24-hours.
- Follow-up checks on three problem areas where we had SSOs (John Fitch Highway at North Street; #56 Plymouth Street; and Upham Street), and all areas appear to be flowing properly.

- Collections Team filled in a pot hole around a sewer manhole John Fitch Highway at Pearl Hill Road.
- Realigned the sensor beam on two ECHO flow meters at Siphon 1 and 2. The sensors became tilted during the rain event due to siphon surcharging from illicit stormwater connections to the sewer system.
- Weekly pump station checks at Sawyer Passway and Cobbler Drive were performed, and appear to be functioning normally. We also vacuumed out the wet wells down to the bottom to remove sediment deposition from entering the pump suction inlets, which will help ensure longer pump life.
- Conducted CSO Checks due to rain event (there were seven (7) CSO regulator activations). The moisture desiccant was changed on all fifteen (15) flow meters in the system. Changing the desiccant is important to ensure proper operation of the pressure sensors, which measure flow depth.

**ADMINISTRATION**

- Winter operations:
  - Placed order for 15 loads (approx. 525 tons) of road salt from Eastern Salt.
  - Calculated the cost associated with plow contractors for the snow storms to date.
  - Processed the invoices for payment that were turned in by plow contractors.
  - We received 7 new plow contracts this week for approval.
  - Corresponded with insurance agents to secure certificates of insurance for plow contractors who have expired or expiring insurance policies.
- Reviewed all DPW Department accounts for accuracy and monitored budgets.
- All DPW Divisions processed the bi-weekly payrolls.
- Attended training with Nate LaRose on updating the City Website.

<b>Invoicing, Warrants, and Payrolls</b>						
	<b>Invoices</b>		<b>Deposits</b>		<b>Billings</b>	<b>Payroll</b>
<u>Division</u>	<u>Number</u>	<u>Total \$</u>	<u>Number</u>	<u>Total \$</u>		
Streets/Admin/Engineering	48	\$ 43,982	*Note 1	\$ 2,550		\$ 96,662
Cemeteries	7	\$ 609				\$ 10,908
Parks						\$ 8,278
Recreation	11	\$ 472				\$ 5,193
Water Supply	40	\$ 40,939			\$ 479,699	\$ 62,027
Waste Water	50	\$ 162,640	*Note 2	\$ 9,640	\$ 967,489	\$ 85,390
<b>Total</b>	<b>156</b>	<b>\$ 248,643</b>		<b>\$ 12,190</b>	<b>\$ 1,447,188</b>	<b>\$268,457</b>
*1 - Engineering Permits & Performance Bonds						
*2 - Septage at East Plant (Gallons)		113,412				