

City of
Fitchburg



Department of
Public Works

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

DPW Weekly Update December 23 – January 6, 2020

Dear Mayor, Councilors, and Colleagues:

The past two weeks have been a time of holidays and time off for many, but DPW crews were kept busy with two significant storms that brought rain, ice and snow. These storms were long-duration events that lasted over a 24-hour period. These long duration storms are costly because DPW crews and contractors have to be deployed throughout the storm to keep the roadways safe for travel. These storms also may start as rain, but become ice and snow, which requires DPW crews to stay vigilant of roadway conditions.

So far this snow season Fitchburg has experienced nine winter events totaling over 36-inches of snow compared to the average snowfall of 71-inches. To date, DPW has spent \$442,880 on winter operations compared to an average expenditure of \$983,000. We are currently at 45% of average expenditures but have received over 50% of average snowfall.

	DPW Overtime	Contractors	Equipment Repairs	Salt	Garages & Lots	TOTAL
Budgeted	\$110,000	\$130,000	\$130,000	\$130,000	\$ 20,000	\$520,000
Spent to Date	\$ 49,499	\$188,288	\$ 57,780	\$127,314	\$ 20,000	\$442,880
Balance	\$ 60,501	\$(58,288)	\$ 72,220	\$ 2,686	\$ - -	\$ 77,120

A supplemental request of \$300,000 is included in this week's Council Agenda for continued snow & ice maintenance. This request will ensure DPW has the tools and materials to continue maintaining the roadways at a high level-of-service. Based on historical trends, it is likely one more supplemental snow & ice budget request will be necessary.

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 19 requests. The total outstanding requests backlog is now 331, an increase of 18 from the previous reporting period. Please note that due to continued snow/ice operations, the number of potholes and other requests completed will continue to lag. A majority of outstanding requests are for potholes, storm drains, and tree/brush trimming.

<u>Reporting Period</u> 12/23/19 - 1/5/20		<u>Previous Period</u>	<u>Change</u>
Previous Request Backlog	313		
New Requests	37	37	0
Completed Requests	19	37	-18
Total Request Backlog	331	313	+18
Potholes	89	79	10
Storm Drains	64	63	1
Tree & Brush Pruning	49	49	0
Traffic, Signals, Signs	21	17	4
Berm Repairs	12	12	0
All other categories	96	93	3
New Requests	37	37	0
Acknowledged	2	2	0
Completed & Closed	18	4	14
Open	19	33	-14

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

ROADWAYS

Snow Operations

	Saturday 12/28	Sunday 12/29	Monday 12/30	Tuesday 12/31	Wednesday 1/1	Thursday 1/2	Friday 1/3
Rain Depth (in)	T	0.0	0.6	2.0	0.0	0.0	0.0
Snow Depth (in)	0.0	0.0	1.2	1.5	0.0	0.0	0.0

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

During the two Holyday weeks, we experienced a mix of rain/ice/snow storms on 12/27 and from 12/29 through 12/31. Crews worked through the storms to prevent the rain from icing the roadways and then plowing the roadways. After the New Year Day holiday, crews cleared and idewalks were plowed and salted throughout the city.

Ice was scraped from Pearl Hill Road, High Rock Road, Fisher Road, Ashburnham Hill Road, Ashby West Road.

Sand was hauled from Airport Pit to DPW yard. Additional salt was ordered and delivered into the salt shed.

Sidewalks

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

DPW Engineering met to fill-out CDBG grant application for ADA ramps as previously discussed with members of the Disability Commission and the Library for various sidewalk improvements.

DPW Engineering performed a review of plans for the proposed handicap ramp at 15 Lunenburg Street.

Potholes

Pothole patching efforts continued during the week using cold-patch filled at various locations, including the following:

- Airport Road,
- Arn How Farm Road,
- Ashburnham Street,
- Bemis Road,
- Benson Street,
- Canton Street,
- Clarendon Street,
- Delisle Street,
- Elm Street.
- Fairmount Street,
- Fifth Street,
- Fisher Road,
- Franklin Road,
- Franklin Street,
- Green Street,
- Highland Ave,
- Industrial Road,
- John Fitch Highway,
- Kimball Street,
- King Street,
- Klondike Street,
- Lincoln Street,
- Lunenburg Street,
- Main Street,
- Mechanic Street,
- Mechanic Street,
- Morris Street,
- Myrtle Street,
- Nashua Street,
- North Street,
- Oak Hill Road,
- Orange Street,
- Payson Street,
- Pearl Hill Road,
- Pearl Street,
- Pratt Road,
- Princeton Street,
- River Street,
- River Street,
- Rollstone Road,
- Rollstone Street,
- South Street,
- South Street,
- Summer Street,
- Townsend Street,
- Walnut Street,
- Wanoosnoc Road,
- Water Street,
- Water Street,
- Willow Street.

PARKS & RECREATION

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

Recreation Director met with Streets Superintendent and Commissioner to discuss filling an application for CDBG funding. The proposed project will repair the Park Hill walking trail from the baseball fields to Causeway Street and add ramps to the sidewalks to make the crosswalk ADA compliant.

CEMETERIES

Cemeteries crews aided in the ice and 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	1
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.....	2
Payments - invoiced/processed.....	9
Family Genealogy	7

ENGINEERING

This week we bid farewell to Gary Bevilacqua, who served the DPW Engineering Division for 20 years. Starting in 1999 as the Junior Engineer, Gary went on to serve most of his tenure as the Assistant City Engineer. We will miss Gary, but wish him best of luck in retirement.



Figure 1- Gary Bevilacqua (center) receiving Citation from Mayor for 20 years of service

Stormwater

DPW Engineering reviewed the draft Phase I inspection report prepared by Tighe & Bond for the Waste Water Treatment Plant Dam and provided them review comments. The Waste Water Treatment Plant Dam is an Intermediate size, Low hazard dam located in West Fitchburg at the confluence of Flag Brook and the Whitman River. It has a maximum structural height of 25 feet and provides a maximum storage capacity of approximately 125 acre-feet. Based on these characteristics, the dam must be inspected once every ten years. Results of the Phase I inspection indicate the dam is in "Fair" condition. The dam was originally constructed for use by the downstream paper mill complexes, but currently serves little purpose other than limited use for recreation.

DPW Engineering reviewed a proposal from Weston & Sampson for additional engineering and permitting services for repairs to the Arbor Way retaining walls. These retaining walls support the roadway and were constructed in 1998 when it was first built as part of the Montachusett Industrial Park Expansion project undertaken by the Fitchburg Redevelopment Authority. The retaining walls have begun to fail in three spots, and must be repaired.



Figure 2 - Arbor Way wall failure

DPW Engineering held a call with Tighe & Bond to discuss the Alternatives Analysis prepared for McTaggart's Pond Dam, which is an Intermediate size, Significant hazard classification dam owned by the City that is currently in "Unsafe" condition. Tighe & Bond has completed the

Alternatives Analysis, which provides the City with clear options on how to best proceed with McTaggart’s Pond Dam (repair vs. removal). The next steps are to present results of the Alternatives Analysis to the Mayor, City Council, and other City stakeholders.

DPW Engineering held a conference call with MassDOT and its engineering consultants, HNTB, to discuss their project to replace the Water Street bridge over the Nashua River. This area is part of the US Army Corps. Of Engineers (USACE) North Nashua River Flood Damage Reduction System (FDR System), which is a network of concrete flood walls, channel paving, bank protection, and other engineered features designed to protect low-lying areas along the Nashua River from flood damage. DPW Engineering requested that MassDOT look into the possibility of incorporating removal of several areas of shoaling under the bridge into the project per instruction from the USACE. Although MassDOT was amenable to the discussion, they did not plan on conducting in-channel work as part of the project and are hesitant to spend the money required for such an undertaking.

Permits and Inspections

DPW issued and inspected 31 permits, including:

- Address Assignment - #205 John Fitch Highway
- Site Inspection - Valley Street extension
- Site Inspection - Park Hill park improvements
- Trench Inspection - #44 Myrtle Avenue
- Trench Inspection - #24 Warner Avenue

Engineering Services			
	<u>Type</u>	<u>Number</u>	<u>Fees</u>
PERMITS	Dumpster Permits	0	\$-
	Trench Permits	1	\$75.00
	Excavation Permits	0	\$-
	Driveway Permits	1	
	Sign Permits	0	
	Sewer Permits	0	\$-
INSPECTIONS	Driveway Inspections	1	n/a
	Trench Inspections	3	n/a
	Site Inspections	11	n/a
	Dig-Safe requests	3	n/a
	Sewer/Drain Inspections	3	n/a
	Street Light Inspection	2	n/a
	New Address Assignments	2	n/a
	Parcel Updates	1	n/a
	Planning Reviews	3	n/a
	Totals	31	\$75.00

WATER SUPPLY

The Water Supply Division produced 29.9 million gallons of drinking water this past week. No transfer of water between reservoirs is taking place. Reservoirs continued to be inspected and patrolled.

Experienced an electrical outage in Westminster on the morning of 12/31 due to the ice/snow storm. The outage impacted the Regional plant, Meetinghouse gatehouse, and Mare Meadow/Bickford pump stations - power was restored by the afternoon. No impacts to operations occurred - the backup generator powered the Regional plant and the duration of the outage was not long enough to create issues at the other locations (personnel did prepare to transport portable generator to these locations for heat, etc. if power had not been restored).

Wyman Pond gate was opened to 9 inches to compensate for the rainfall/snowmelt that occurred in an effort to 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.

Water Treatment

Reservoir Levels as of 1/3/20			
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 12/27/19 through 1/2/20			
	Falulah Plant	Regional Plant	Totals
Raw Water Inlet (Gal)	6,426,000	27,886,000	34,312,000
Backwash to waste (Gal)	940,000	3,381,000	4,321,000
Finish Water - Treated & Distributed (Gal)	5,486,000	24,505,000	29,991,000
Capacity	(6 MGD) 15%	(12 MGD) 33%	(18 MGD) 27%
Efficiency	85%	88%	87%

Fire Hydrants

Total Hydrants	Out of Operation	Hydrants Replaced	Hydrants Repaired	Painted	Flushed	Winterized
1,632	1	1	1	0	0	19

- Monday, 12/30, FWD personnel checked a hydrant that was hit at 80 Canton Street all quiet/no leaks. Hydrant is still in good working order but got turned a little bit on the barrel. Personnel will complete repair to set it back straight when weather allows.

- Friday, 1/3, contractor (Hydra Tech) replaced a hydrant on Airport Road at Melrose Street. This hydrant was hit by a vehicle and was replaced under an insurance claim. FWD personnel assisted with shutting down that section of water main while work was being completed.

Water Distribution

- Saturday, 12/21, FWD personnel excavated and repaired a leak on the 2-inch water main on St. Joseph Avenue at Daniels Street. Repair was made with 2 feet of 2-inch poly and 2 couplings. The trench was backfilled, compacted, and cold patched on Monday.
- Monday, 12/23, FWD personnel excavated the tap at 58 Interval Road to install a BOT, it was discovered that the corporation operated very hard. Will go back Thursday and change the corporation and install a curb stop.
- Monday, 12/23, FWD personnel installed a curb stop box extension at 1006 Westminster Hill Road.
- Tuesday, 12/24, FWD personnel excavated and repaired a water break on Clarendon Street at Daniels Street. The break was on a 6-inch water main, personnel installed a wrap around. Trench was filled and compacted.
- Thursday, 12/26, FWD personnel excavated and repaired a water break on the 12-inch water main on Franklin Road. The break was very close to a 12"X12"X8 Tee. To complete the repair, crews had to cut out the tee and install a new 12"X12X8" tee and gate valve (branch off tee feeds the Aubuchon Plaza). Both mains were filled and flushed and trench was backfilled/compacted.
- Thursday, 12/26, FWD personnel worked with private contractor (Starzynski) to repair a leak on a 2-inch water service to 58 Interval Road. Contractor excavated the water main and FWD personnel closed the corporation and installed a new 2" curb stop, contractor then excavated the leak and repaired a 4 foot section of the 2-inch water service.
- Friday, 12/27, FWD personnel finished cleaning the area of the water main break on Rollstone Road and cold patched the trench. Personnel also cold patched the trench on Clarendon Street.
- Replace gate box cover on North Street at Pearl.
- Investigated discolored water at 67 Snow Street, service is quiet and nothing appears to be leaking, a sample was taken.
- Investigated a low pressure call at 90 Appleton Circle, meter contractor did not open the ball valve all the way after completing the replacement of the water meter.
- Investigated a low pressure call from owner of 746 Westminster Street after water meter had been changed. Plumber change the wheel valve but flow/pressure was still low, FWD crews will excavate the tap and determine what the issue is.
- Reviewed View Permit for new house at 414 Ashburnham Street - on hold until the Water Division receives a new service application and connection fees (still have not received anything).
- Performed leak detection and pipe locating to identify the location of the leaks/breaks on Clarendon Street, 58 Interval Road, and Franklin Road.
- Installed a new air compressor temperature sensor in the new International truck, the original was faulting out on high temperature.

- Thursday, 1/2, FWD personnel prepped and cold patched the trench on Clarendon Street at Daniels Street.
- Thursday, 1/2, FWD personnel excavated and reamed the tap at 746 Westminster Street (owner complained of low pressure in house after meter was changed out), service is tapped on Parson Circle. Plenty of flow/pressure at the tap but, during this work, discovered that there is iron pipe on the owner's side (which was not shown on the tie-card and there is copper coming in through the foundation) that could be restricting flow. Informed owner that we have done all that we can but that the service line on the owner's side would need to be replaced (owner understood and appreciated the efforts).
- Friday, 1/3, FWD personnel checked cold patched trenches on Daniels Street at St Joseph's Avenue, Intervale Road, and Oak Hill Road and addressed as needed.
- Replaced gate box cover in Stoneybrook development.
- Investigated a possible leak at 505 John Fitch Highway. The leak was determined to be on the owner's side. Water was shut off at curb stop do to icing issues and a message was left with the property owner that the leak needed to be repaired before the service was turned back on.
- Investigated discolored water at 27-29 Payson Street. Personnel checked the apartment kitchen and upstairs tub and faucet and water was found to be clear. Collected a sample after meter also looked clear. May have been just a "slug" of discolored water in the area that has now dissipated.

Meters and Billing

- Total of 11 real estate closings – final readings completed along with preparation of final bills for attorneys/realtors. Future real estate closing final readings also scheduled.
- 23 invoices totaling \$29,379.00 were processed for FY20 warrant WG20028.
- 8 purchase orders and 3 change order entered into Munis for approval by Purchasing.
- Loaded 9540 accounts into 2 laptops for meter reading for Badger meters.

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

Water Permits and Inspections	
Type	Number
Emergency DigSafe Mark-outs	1
DigSafe Mark-outs	2
Inspections of Work on Water System	1
Record Plan Updates	8
Curb Stops Turned off/on	3
Located/cleaned gate/curb boxes	6
Final Readings/Real Estate Closings	11
New Meter Installations	2
Backflow Preventers Tested	20
Residential Appointments Made	0
Totals	54

WASTE WATER

The WWTF processed 64.03 million gallons of sewage. In total, 40.1 tons of organics and 47.6 tons of solids were removed and prevented from entering the Nashua River.

<u>Week of 12/22/2019 - 12/28/2019</u>		
Sewage Flow	64.03	Million Gallons
Rainfall	0.0	Inches
Secondary Bypass	0.0	Million Gallons
BOD _{in} (lbs)	82,636	Pounds
BOD _{out} (lbs)	2,447	Pounds
BOD Removal (%)	97%	
TSS _{in} (lbs)	101,005	Pounds
TSS _{out} (lbs)	5,761	Pounds
TSS Removal (%)	94%	

- Working with Fitchburg Legal Department, for a short-term time extension of the Fitchburg/Westminster Intermunicipal Agreement for Sewer Service.
- Working with Recreation Director, Nate LaRose, for updating the DPW - Wastewater Division's webpage.
- 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.
- Providing update correspondence to neighboring property owners to the East Plant, concerning the tonal nuisance noise mitigation from the new aeration blowers & Second Stage Aeration Header Piping.

Sewer System

- Built benches on 10 abandoned drain inverts in Normandy Road neighborhood and Laurel Street. These combination manholes were separated by a contractor. It is estimated the city saved \$12,000 by conducting this work in-house. See picture of confined-space entry.
- Conducted another root treatment on the manhole on John Fitch Highway near North Street where we had a sanitary sewer overflow last month.
- Packed up and shipped out Sewer Camera for repair. The locating feature on the camera is not operating properly.
- Conducted Problem area checks and cleaned lines on Middle Street Lane and Gloria Avenue due to wipe build-up.
- Swapped batteries on 4 flow meters.

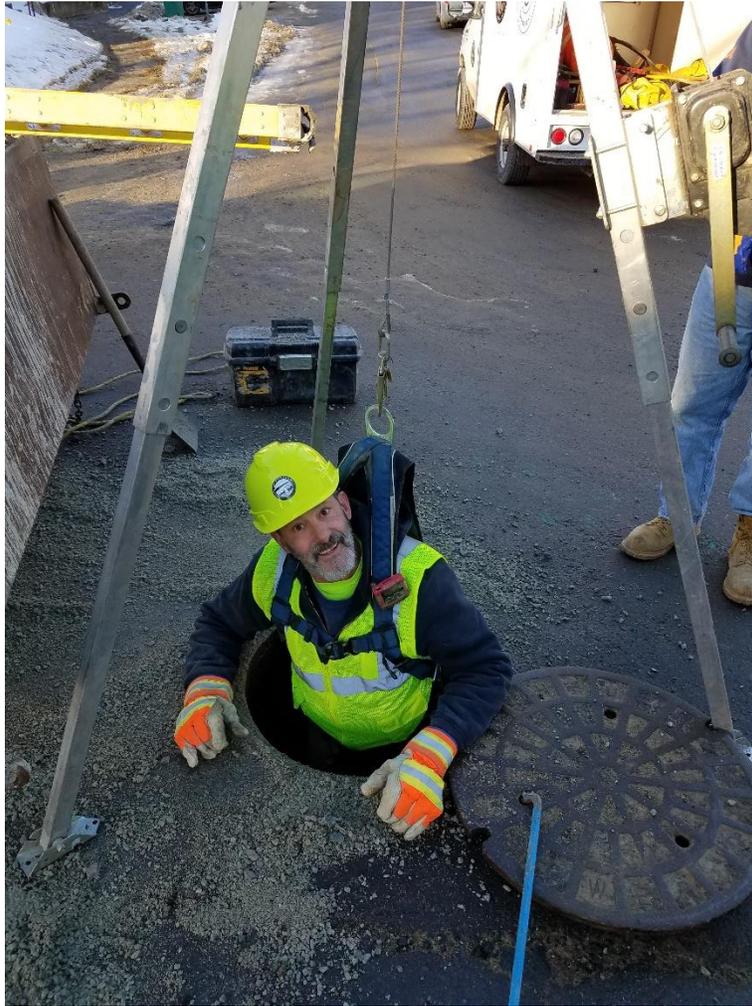


Figure 3 - Confined Space Entry Safety Devices

- Built benches in 4 manholes on Laurel Street on the old drain side, combination manholes were abandoned in the 1970s.
- Helped DPW plow for two days.
- Organized west plant pipe garage and took an inventory, conducted weekly pump station checks, and picked up some random tools and shop supplies.
- Replaced a manhole frame and cover on Main Street at North Street that a plow destroyed. Paved same day.
- CCTV Sewer Inspected 250 Feet of 8-inch diameter sewer on Devlin Passway.
- Push CCTV'd on Edwards Street at Saint Andrew Street to track two unknown lines. One line changes pipe size with no manhole and can't be navigated with the camera. The second unknown line is a sewer lateral to a nearby residence. Measurements were taken and mapping was updated.
- Installed 2 flow meters, one on South Street and another on Clarendon Street for pre-construction flow monitoring for CSO-39/11 Project. The purpose is to track how effective separating and replacing sewers in the project area is at removing sources of rainwater to the sanitary system.
- Took an inventory of all meter parts at the West Plant and ordered additional parts.
- Discovered a catch basin connected to the sanitary sewer adjacent to 118 Madison St.

ADMINISTRATION

- Winter operations:
 - Calculated the costs associated with winter operations to date.
 - Processed the invoices for payment that were turned in by plow contractors.
 - Corresponded with insurance agents to secure certificates of insurance for plow contractors who have expired or expiring insurance policies.
- Provided financial documentation and budgetary update for the McTaggart's Dam grant to the Civil Engineer for inclusion with the required quarterly update.
- Submitted free cash appropriation request to the Mayor's office for \$300k towards snow & ice operations.
- Compiled all backup and submitted Chapter 90 reimbursement request to MassDOT for the Streetscan project. Final project total was \$62,908.
- Began running reports and calculating the Q3 billing totals for the wastewater industrial billing customers (papermill billings).
- Reviewed all DPW Department accounts for accuracy and monitored budgets.
- All DPW Divisions processed the bi-weekly payrolls.

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	76	\$ 155,106	*Note 1			\$ 75,241
Cemeteries	10	\$ 2,993				\$ 11,043
Parks	1	\$ 633				\$ 8,160
Recreation	20	\$ 3,352				\$ 20,211
Water Supply	63	\$ 161,513				\$ 58,018
Waste Water	57	\$ 187,366	*Note 2	\$ 35,400		\$ 79,324
Total	227	\$ 510,964		\$ 35,400	\$ -	\$251,997
*1 - Engineering Permits & Performance Bonds						
*2 - Septage at East Plant (Gallons)						