



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

DPW Weekly Update December 9 - December 15, 2019

Dear Mayor, Councilors, and Colleagues:

One of the duties of the City Engineer is to review and provide recommendations to the Planning Board regarding proposed projects. Often times, the most critical aspect of a proposed development are its impacts on traffic safety and operations. In these situations, the proponent will hire a traffic engineer to prepare a Traffic Impact Assessment (TIA) that outlines the existing traffic conditions and anticipated impacts from the proposed development. This TIA is then reviewed by the City Engineer/DPW Engineering staff to assure its completeness and accuracy. Engineering recommendations are then made to the Planning Board requesting that the project proponents mitigate any traffic impacts to assure the continued safety and level of service of the traveling public.

Last Tuesday we had the opportunity to review the Medical Marijuana Manufacturer and Establishment TIA for the project at 291 Westminster Street. In addition to the TIA submitted by the applicant, and at the behest of the Planning Board, DPW Engineering performed additional examinations of the sidewalks and researched the safety of the Westminster Corridor. We determined that the sidewalks were in very bad shape and required reconstruction to assure the safety of pedestrians. We also received a crash study from our friends at the Montachusett Regional Planning Commission (MRPC), which identifies the Westminster Street Corridor as a High Crash Corridor – with 93 crashes in a 5-year period from Princeton Road to Ashburnham Street.

Based on this information, DPW Engineering made recommendations to the Planning Board to include a safety mitigation package as conditions to approval of the facility. The Planning Board agreed, and as a result the project proponent will be rebuilding over 1,000 feet of sidewalk (concrete with granite curb), installing flashing advanced warning signs, and erecting a flashing beacon at the driveway entrance to increase safety. These improvements will be installed, operated and maintained by the property owner. This is a good example of being business friendly while still holding developers accountable for mitigating their impacts.

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 41 new requests and closed 25 requests. The total outstanding requests backlog is now 302, an increase of 16 from the previous reporting period. A majority of outstanding requests are for potholes, storm drains, and tree/brush trimming.

<u>Reporting Period</u> <u>12/2/19 - 12/16/19</u>		<u>Previous Period</u>	<u>Change</u>
Previous Request Backlog	286		
New Requests	41	39	2
Completed Requests	25	8	+17
Total Request Backlog	302	286	16
Potholes	69	59	10
Storm Drains	62	60	2
Tree & Brush Pruning	48	48	0
Traffic, Signals, Signs	16	13	3
Berm Repairs	12	12	0
All other categories	95	94	1
New Requests	41	39	2
Acknowledged	4	4	0
Completed & Closed	3	5	-2
Open	38	34	4

Continued work on redesign of DPW webpages. Nate LaRose is leading this effort for DPW. Attended Civic Plus conference call with IT regarding webpage refresh on 12/9/2019. Met via Phone with representative from Viewpoint solutions to discuss options for online permitting and payments for the Recreation Department and Civic Days. This would have the Recreation Dept. join the Engineering Division and other City Departments on the Viewpoint online platform. Continued work on DPW Wastewater Division webpage for upcoming meeting with Wastewater staff for feedback and input.

ROADWAYS

Snow Operations

DPW Street crews were busy most of the week dealing with snowfall and icing. We received about 3-inches of snow and 2.5-inches of rain. Last week the crews concentrated on clearing snow from the sidewalks, parking garages, narrow streets, and from culverts and catch basins in anticipation of heavy flows due to melting snow and rainfall.

The DPW Mechanic Shop continued to fix plow trucks and equipment in order to keep the fleet at full strength and also continued to fix and calibrate the salt spreaders to optimize the use of straight salt on the roadways.

Potholes

Pothole patching efforts continued during the Thanksgiving week with approximately 400 potholes¹ filled at various locations, including the following:

- River Street,
- High Street,
- Oak Hill Road,
- Winter Street,
- Marshall Street,
- Blossom Street,
- Pearl Street,
- John Fitch Highway,
- Airport Road,
- Benson Street,
- Ashburnham Street,
- North Street,
- South Street,
- Shea Street,
- Duck Mill Road,
- Brier Street,
- Franklin Road,
- Electric Ave,
- Rollstone Road.

Paved around two manholes for WasteWater.

PARKS & RECREATION

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

Assisted Holiday Decorating Committee with Lighting of the Common Event on December 7, 2019. Verified lighting was connected, provided audio setup, turned on lighting and set timers.

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

Met with Trails Visioning Committee on 12/13/2019 to review feedback on the draft Visioning document from Department Heads. Potential revisions were reviewed and a final document is being prepared for submission to City Boards and Commissions.

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.

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)

CEMETERIES

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

Cemetery Superintendent attended New England Cemetery Association (NECA) Seminar.

Initiated project to install surveillance cameras for the Laurel Hill Cemetery.

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

Full Interments	0
Inurnments.....	1
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.....	5
Family Genealogy	2

STORM WATER

Precipitation Amounts

	Monday 12/9	Tuesday 12/10	Wednesday 12/11	Thursday 12/12	Friday 12/13	Saturday 12/14	Sunday 12/15
Rain Depth (in)	1.37	0.12	T	0.0	T	1.43	0.0
Snow Depth (in)	0.0	3.0	T	0.0	0.0	0.0	0.0

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

Warm temperatures thawed the ground and melted snow throughout the week. This, combined with heavy rain on Monday and Saturday, led to heavy flow in the North Nashua River and other water bodies across the City. Some minor flooding occurred in lower lying-areas, including along John Fitch Highway. Groundwater breakout along hilly areas of the City is expected to occur over the next week, potentially causing icing issues.

DPW Engineering continued reviewing the draft FEMA Flood Insurance Rate Maps that were recently updated by the USGS. Review comments are due to FEMA and the USGS on December 20th.

ENGINEERING

DPW Engineering reviewed the only proposal received for the Cemetery Management Software RFP. The proposal is from PlotBox, and it appears that this company meets the qualifications outlined in the RFP.

DPW Engineering performed reviews of the following Planning Board Special Permit Applications and submitted comments to Planning Board:

- o 885 Fisher Road
- o 265 Summer Street
- o 291 Westminster Street (second review)



Figures 1-3: Sidewalk conditions abutting 291 Westminster Street

DPW Engineering reviewed the Traffic Impact Assessment (TIA) for the marijuana cultivation facility at 291 Westminster Street. Sidewalks along the frontage of the proposed development were inspected and it was determined that there are significant sink-holes and deteriorated curbing/surfaces. The sinkholes can be partially attributed to the headwalls/sludge gates/and tailraces from the old dam located on site and owned by the developer. A safety study from MRPC was also analyzed, and it was discovered that Westminster Street had a total of 3 fatality, 20 injury, and 70 property-only-damage (POD) crashes in a 5-year span.

Based on these findings, DPW made recommendations to the Planning Board to include a safety mitigation package as conditions to approval of the facility. The Planning Board agreed, and as a result the project proponent will be rebuilding over 1,000 feet of sidewalk (concrete with

granite curb), installing flashing advanced warning signs, and erecting a flashing beacon at the driveway entrance to increase safety. These improvements will be installed, operated and maintained by the property owner.

DPW Engineering began compiling a database of Planning Board decisions to better track the various funds/improvements owed to the City by developers as part of conditional approvals by the Planning Board.

DPW Engineering attended the bid opening for the Water Division's Pump Stations Roof Replacement Project. This is a project to replace failing roofs and make minor masonry repairs at the Bickford, Mare Meadow, Marshall, LaCava, Montachusett, and Scott Pumping Stations. Only one bid was received and it was from Classic Construction. The base bid price came in at \$514,000, Bid Alternate 1 came in at \$164,000, Bid Alternate 2 came in at \$186,000, and Bid Alternate 3 came in at \$88,000. These prices are all extremely high compared to the cost estimates prepared by the City's consultant, and the City is exploring the best way to move forward.

DPW Engineering attended a non-mandatory pre-bid conference for the Narrows Road Hydro Turbine Project. This is a project to replace a large pressure reducing valve (PRV) at the Narrows Road PRV Station with a hydro turbine to generate energy for the City. The project is being partially funded by a grant from the Massachusetts Clean Energy Center (MassCEC).

DPW Engineering prepared a Notice to Proceed for review and signature by the City authorizing Weston & Sampson to proceed with their proposal for the design of a replacement water line between the Falulah Water Treatment Plant and the Falulah Water Storage Tanks, both located off Rindge Road.

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

WATER SUPPLY

The Water Supply Division produced 28.5 million gallons of drinking water this past week. No transfer of water between reservoirs is taking place. Reservoirs continued to be inspected and patrolled.

The final MWWA treatment class for the fall period was held at 1200 Rindge Road. The three primary operators (Mark, Ed, and Peter) finished the course and took the final exam. Once the results are received, they will be able to take the state 4T exam to allow them to progress toward full, 4T operator certification.

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.

Water Treatment

Reservoir Levels as of 12/13/19			
Northern Reservoirs	Elevation below spillway		Southern Reservoirs
Fitchburg/Ashby	Full	-0.18 feet	Meetinghouse
Scott	- 0.73 feet	-0.12 feet	Mare Meadow
Lovell	Full	Full	Bickford

Water Filtration Plant Flows/Production from 12/6/19 through 12/12/19			
	Falulah Plant	Regional Plant	Totals
Raw Water Inlet (Gal)	6,597,000	25,568,000	32,165,000
Backwash to waste (Gal)	954,000	2,731,000	3,685,000
Finish Water - Treated & Distributed (Gal)	5,643,000	22,837,000	28,480,000
Capacity	(6 MGD) 16%	(12 MGD) 30%	(18 MGD) 26%
Efficiency	86%	89%	88%

Fire Hydrants

Total Hydrants	Out of Operation	Hydrants Replaced	Hydrants Repaired	Painted	Flushed	Winterized
1,632	2	0	0	0	1	100

- FWD personnel continued winterizing/clearing hydrants on the High system throughout the week.
- Checked areas where FWD personnel are winterizing/clearing hydrants, there are some issues with what is being done and a meeting will need to be held with personnel to review the issues and ensure that all work is completed as expected.

Water Distribution

- Saturday, 12/7 - FWD personnel excavated and installed a new 6-inch gate valve on Kimball Place. Trench was backfilled and compacted. The hydrant at the end of this main developed a leak and it could not be determined whether it was a private or city-owned hydrant. Installation of a new gate valve was needed to restore water to the building at the corner of River Street and Kimball Place. When weather allows, a new hydrant will be installed nearer to River Street to replace the one at the end of the main.
- Monday, 12/9 - FWD personnel investigated a leak in the cellar at 62 Newtonville Avenue. Homeowner said the pipe joint started leaking after the meter contractor changed the meter.
- Tuesday, 12/10 - FWD personnel prepped curb stops at 10 Acorn Avenue, 10 Oak Street, 14 Hardy Passway, and 651 Ashby State Road for future meter replacement appointments which, due to the condition of the service line, will require the water to be shut off at the street.

- Wednesday, 12/11 - FWD personnel repaired a leak on a 2-inch main at 224 Bemis Road. The leak was between the water main and curb stop, which required a shutdown of the 20-inch main on Bemis Road. The trench was backfilled, compacted, and paved.
- Thursday, 12/12 - FWD personnel excavated and replaced the curb stop at 123 Delisle Street. The trench was backfilled and compacted.
- Thursday, 12/12, FWD personnel responded to corner of Warner Avenue and Westminster Street where a private contractor was working on the sewer. They had notified us of a leaking 2-inch water service in their trench. FWD gave them a repair clamp to install on the pipe to fix the leak.
- Friday, 12/13 - FWD personnel responded to Williams Street at Forest Street for a possible water main break, leak was found on the owner's side of the water service to 53 Forest Street.
- Friday, 12/13 - FWD personnel prepped and paved the water trench on Bemis Road and prepped and repaved the water trench on Pearl Hill Road at Fisher Road.
- Investigated "smelly" water from a shower at 66 Leyte Road. It is believed that the odor is coming from the shower drain/trap; however, a water sample was collected for analysis.
- Inspected the water service line to 262 Oak Hill Road - it is iron pipe on both the city and owner's side, it will be coordinated with contractor to renew next week.
- Investigated low pressure at 51 York Avenue - Water Division personnel replaced the water meter and a plumber replaced the wheel valve which restored flow/pressure.
- Located curb stop at 350 Oak Hill Road for the meter replacement contractor, the curb box was under a cement sidewalk and found to be an old Leominster box. The service is old iron pipe and under concrete in the cellar - this will need to be addressed before a new meter can be installed.
- Located curb stop at 38 Ward Street in order to shut off service to allow replacement of the water meter (by contractor). Discovered that the curb stop will not operate and will need to be excavated/replaced.

Meters and Billing

- 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).
- Profile meter for high bill, found a 3/4 model 35 head on a 5/8 meter model 25, changed meter and told the owner about the issue.
- Met with representative of owner of 774 Crawford Street to request the backflow testing paperwork for the five devices at the facility, received an email later in the day with the data sheets for all (5) devices.
- Delivered an irrigation meter (and MIU) to 200 Connors Street, collected a check for \$354.00 for the cost of the meter/MIU.

- Checked the Registry of Deeds records to confirm real estate transfers and changed ownership records as appropriate in Munis. It is common to have a closing fall through and the Water Division is not notified (and we do not want to change all the information in Munis and have the former buyer get bill as many times it is not forwarded).
- Revised billing accounts with information for water meters and MIUs (meter interface units) that were replaced/installed during the course of the week.
- 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.
- Set up appointments for service calls, water turn ons/offs, and backflow testing.
- Mailed out copies of backflow test results to customers requesting copies.
- Total of 18 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 \$33,007.59 were processed for FY20 warrants WG20025.
- 7 purchase orders and 3 change order entered into Munis for approval by Purchasing.
- Entered 183 Neptune meter changes into Munis. This includes adding “GAL” to the meter profile, longitude and latitude to the specific meter and then adding the final reading from the Badger meter to the account and removing the “other” meter from the account.
- Sent the preliminary December sewer bill to the Town of Lunenburg - due to the holiday schedule they have an earlier submission date for their warrant.
- Attended a kick off meeting for the WaterSmart software program with personnel from Weston & Sampson, WaterSmart, and Ti-Sales.
- Attended Finance Committee meeting to gain approval for acceptance of grants and expenditure of due diligence costs (i.e., title search, survey, baseline documentation report, etc.) for the Jewell Hill/Crocker Farm project.
- Reviewed View Permit for new house at 414 Ashburnham Street - it is on hold until the Water Division receives a new service application and connection fees.

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	9
Inspections of Work on Water System	2
Record Plan Updates	6
Curb Stops Turned off/on	15
Located/cleaned gate/curb boxes	19
Final Readings/Real Estate Closings	18
New Meter Installations	13
Backflow Preventers Tested	26
Residential Appointments Made	7
Totals	116

WASTE WATER

During the first week of December, the WWTF treated 46.1 million gallons of sewage with no bypasses. In total, 42.6 tons of organics and 60.6 tons of solids were removed and prevented from entering the Nashua River.

This past week, due to the heavy rainfall/snowmelt combination a total of 13.6 Million Gallons bypassed the secondary treatment over the course of 3 days.

<u>Week of 12/01/2019 - 12/07/2019</u>		
Sewage Flow	46.08	Million Gallons
Rainfall	2.80	inches
Secondary Bypass	0	Million Gallons
BOD _{in} (lbs)	87,520	pounds
BOD _{out} (lbs)	2,403	pounds
BOD Removal (%)	97.17%	
TSS _{in} (lbs)	125,904	pounds
TSS _{out} (lbs)	4,690	pounds
TSS Removal (%)	95.96%	

- Met with consultant for “Anaerobic Digestion” procurement services assistance, providing tours of both West and East WWTFs.
- Onboarded new Wastewater Administrations Coordinator, filling a needed vacancy that has existed for 5 months.
- Provided recorded video file to constituent sewer customer (#34 Bourque Terrace). “Closing the loop” on the customer’s service request.
- Met with representatives of the City’s “On-Call Architect”. Wastewater plans to assign a conditions assessment to the On-Call Architect, for the East Plant’s aged HVAC systems. Assignment will include budgetary costing system renewal/replacement.
- Coordinating with Unitil, for the gas service replacement project for the East WWTF.

Sewer System

- Jetted Plymouth Street line to open it up again...twice. On Sunday 12/15, we had to do an emergency excavation on this line as it had collapsed. The line will be fully replaced in-house in the spring construction season due to mixture of pipe sizes, bends, and tees all in the same pipe segment which does not allow for jetting or inspection.
- Jetted and CCTV'd in front of #460 Rollstone Street to assist homeowner whose sewer was backing up. The City sewer was flowing fine, and the issue was determined to be within the privately owned sewer lateral. We were not able to see up the lateral.
- Bi-weekly check of problem areas: no issues were observed.
- Conducted preventative maintenance on the Vactor.

- Assisted the Airport by raising a steel valve box that was on their force main clean out. We assisted with paving the patch as well.
- Conducted push cam investigations at #96 East Prospect Street and at #126 Mechanic Street. We determined the homeowner at #126 Mechanic Street is tied into a previously unknown local sewer. Our GIS Mapping has been updated to reflect this connectivity.
- Replaced pavement patch around a manhole at #1 Oak Hill Road, to prevent plows from hitting the cover.
- Assisted DPW with snow plowing for a day.
- Replaced a frame and cover on Lancaster Street at Cleveland Street that was dislodged off the manhole cone by a plow.
- Assisted the East WWTF with a push-camera project on a chemical feed line. We found what appears to be a spot repair in the line where groundwater may be coming in.
- Jetted and cleaned line on Upham Street. We had a small SSO, where about 20 gallons bubbled out of a manhole and became absorbed in a snow bank. Line was jetted and cleaned 700 feet to trunk line on John Fitch Highway.
- Finished combination manhole checks. Four (4) transfer activations occurred, on 173 combination manholes remaining.
- Reviewed Preliminary Design Report for CSO-39 Project.
- Conducted two Planning Board Reviews.
- Design kick-off meeting with Bohler Engineering to discuss schedule for City Hall Project. Design will be completed by end of January with bids opening the end of March or early April 2020.

ADMINISTRATION

- Winter operations:
 - Placed order for 20 loads (approx. 680 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 the Chapter 90 reimbursements from MassDOT for the Westminster Hill Rd Bridge Engineering Costs (\$10,068).
- Provided backup documentation for requests from Melanson-Heath auditors.
- Finalized wastewater fixed assets reporting for Auditor's office.
- This week we welcomed Wendy Boulay to the wastewater department as the Administrations Coordinator.
- 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	55	\$ 100,050	*Note 1	\$ 10,068		
Cemeteries						
Parks						
Recreation						
Water Supply	23	\$ 33,008				
Waste Water	23	\$ 490,915	*Note 2	\$ 41,380		
Total	101	\$ 623,972		\$ 51,448	\$ -	\$ -

*1 - MassDOT Chapter 90 reimbursement Westminster Hill Rd Bridge Engineering Costs

*2 - Septage at East Plant (Gallons) 486,824