



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

**DPW Weekly Update September 30 – October 6, 2019**

Dear Mayor, Councilors, and Colleagues:

This past week DPW Engineering finalized and submitted the Year 1 Annual Report for the City's Municipal Separate Storm Sewer System (MS4) permit from the US EPA. This permit became effective on July 1, 2018 and requires the City to plan and implement a strict stormwater management program that focuses on six Minimum Control Measures:

1. Public Education and Outreach
2. Public Participation
3. Illicit Discharge Detection & Elimination
4. Management of Construction Site Runoff
5. Management of Post-Construction Site Runoff
6. Good Housekeeping in Municipal Operations.

The Annual Report is due each year by September 30th and summarizes the City's efforts to comply with yearly permit requirements in each of the six control measures. The report, along with all of the documents can be reviewed on the stormwater website at:  
<http://www.ci.fitchburg.ma.us/463/Stormwater>

Many of the public outreach and participation measures are being conducted in coordination with [Think Blue Massachusetts](#) and the [Central Massachusetts Regional Stormwater Coalition](#).

DPW Engineering is also continuing to work with the Legal Department on finalizing the City's Stormwater Rules & Regulations in support of Chapter 154: Stormwater Management of the City's Code. These rules and regulations will allow DPW to enforce the conditions of the MS4 permit and regulate the stormwater flows into receiving waters.

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 57 new requests and completed 32 requests. The total outstanding requests backlog is now 324, a majority of which are for potholes, storm drains, and tree/brush trimming.

| Reporting Period<br><u>9/23/19 - 10/06/19</u> |            | <u>Previous</u> | <u>Change</u> |
|---|------------|-----------------|---------------|
| <b>Previous Request Backlog</b>               | <b>299</b> |                 |               |
| New Requests                                  | 57         | 54              | +3            |
| Completed Requests                            | 32         | 116             | <b>-84</b>    |
| <b>Total Request Backlog</b>                  | <b>324</b> | <b>299</b>      | <b>+25</b>    |
| Potholes                                      | 73         | 66              | +7            |
| Storm Drains                                  | 84         | 82              | +2            |
| Tree & Brush Pruning                          | 53         | 49              | +4            |
| Traffic, Signals, Signs                       | 21         | 17              | +4            |
| Berm Repairs                                  | 13         | 13              | 0             |
| All other categories                          | 80         | 72              | +8            |
|   |            |                 |               |
| New Requests                                  | 57         | 54              | +3            |
| Acknowledged                                  | 39         | 40              | -1            |
| Completed & Closed                            | 10         | 13              | -3            |
| Open  | 47         | 41              | +6            |

## ROADWAYS

### Traffic Signs, Signals, and Striping

DPW Engineering and the FPD reviewed operations at the signalized intersection of Wallace Road and River Street. Our contractor, Pine Ridge Technologies (PRT), met with us at the intersection to review proposed changes to the phasing of the signal. In order to relieve congestion, the River Street traffic will have concurrent phasing – meaning both approaches will have a green light at the same time. The video detection will be realigned to serve only Wallace Road approach and the commercial driveway at the drycleaners. This means that River Street traffic will always have the green light until a vehicle is ‘seen’ by the cameras on Wallace Road or at the commercial driveway, at which time the traffic signal will give red lights to both River Street approaches and green light to the Wallace Road approach. The pedestrian signal will continue to be an exclusive phase – meaning when the ped button is pushed, all vehicle approaches will receive a red light and the pedestrian(s) will be free to cross in any direction.

Striping was completed on the following roadways:

- Rindle Road – double yellow and shoulder lines
- Rollstone Road – double yellow
- Mt. Elam Road – double yellow
- Franklin Road – double yellow and shoulder lines (11-foot lanes) from Depot St to Clarendon Street for traffic calming purposes.

Crosswalks were painted on Laurel Street.

South Street school parking lot was repainted during the weekend.

### Potholes

Pothole patching efforts continued this week with approximately 480 potholes<sup>1</sup> filled at various locations, including the following:

- England Avenue,
- Shea Street,
- Allen Place,
- Kingsbury Street,
- Richardson Drive,
- Elizabeth Street,
- Henry Street,
- High Rock Road,
- Eastlin Way,
- Princeton Road,
- Whalon Road,
- Moonlight Avenue,
- Valdalia Avenue,
- Everett Street,
- Charles Street, and
- Chester Street.

Supported Sewer Division by paving trenches on Airport Road.

Paved driveway aprons at 37 Southwick Street and 8 Shea Street.

Caswell Road was graded.

### Snow & Ice

The screening plant is currently processing sand and gravel at the Airport Pit.



*Figure 1 - Screening Plant at Airport Pit*

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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)

Streets Superintendent and Engineering worked on GIS maps of plow areas to receive straight salt versus areas to receive sand/salt combinations.

DPW coordinated with Purchasing Department to finalize the contracts for winter operations. Community Development is working on translating documents into Spanish. Purchasing is posting the solicitations this week and we will begin sending out the packages to our contractors.

#### Crack Sealing

Crack Sealing continued last week on various roadways. Our contractor has completed approximately 94% of the work so far and will continue to work throughout the city in the coming weeks.

#### **PARKS & RECREATION**

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](http://www.fitchburgma.gov/activities) . For more information visit [www.fitchburgma.gov/biddyleague](http://www.fitchburgma.gov/biddyleague).

Rockwell Roofing will be beginning work on the Parkhill Park bathhouse roof the week of 10/7/2019. Prep work will begin Monday.

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 jog/walk inside at the Fitchburg State University Recreation Center's jogging 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.

#### **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 .....                       | 2  |
| Up righted monuments.....              | 12 |
| Uncovered/cleaned flat monuments ..... | 10 |
| Foundation marking for monuments.....  | 1  |
| Catch basin repair .....               | 0  |

|                                     |   |
|-------------------------------------|---|
| Trimmed Trees .....                 | 0 |
| Trimmed shrubs.....                 | 0 |
| Meeting with Families.....          | 5 |
| Payments - invoiced/ processed..... | 3 |
| Family Genealogy .....              | 4 |

## **STORM WATER**

DPW Engineering prepared and submitted a quarterly update to the Executive Office of Energy and Environmental Affairs (EOEEA) summarizing the work done at McTaggart's Pond Dam under the Dam and Seawall Repair or Removal grant program. The City was awarded \$375,000 under this grant program in 2018. The grant will enable the City to advance engineering designs and permit applications for removal or repair of the dam. The City has hired engineering consultant Tighe & Bond to perform the preliminary alternatives analysis, which will evaluate the costs, benefits, and liabilities of both repair and removal options so that the City can make an informed decision on the dam's future.

DPW Engineering continued to work on finalizing the "core team" for its MVP Planning grant. The purpose of the grant is for the City to undertake community resilience building workshops with key City stakeholders to prepare for the impacts of climate change. The "core team" will meet briefly a couple of times ahead of the MVP Planning workshops with key City stakeholders to establish priorities, goals, and objectives for the City of Fitchburg to help guide the workshop discussions.



Figure 2 - Inspection of Sand Brook Culvert

### **Catch Basins**

The catch basin on Kyle Road was rebuilt. Started rebuilding catch basin on Mt Vernon Street.

### **Berms**

DPW Street crews installed berms on Vine Street, Cathy Street and Wanoosnoc Road

### **Sand Brook Culvert**

DPW Civil Engineer Nick Erickson and Sewer Systems Manager Tony Maressa made a spelunking excursion through the Sand Brook Culvert - a 1,500 foot trip starting under Electric Avenue and proceeding under the Forest Hill Cemetery, Franklin Road and Nikitas Field. The culvert proved to be clean and in good condition, with some sections of the box culvert footing undermined. A buried manhole was discovered as well.

## WATER SUPPLY

The Water Supply Division produced 31.5 million gallons of drinking water this past week. Our treatment plants have been reclassified from Class III to Class IV treatment plants by the MassDEP based on various criteria. The main effect of this reclassification is that our primary operators have to upgrade their licenses to Grade IV licenses and the secondary operators must hold a Grade III license. Training is underway for our operators to upgrade their licenses.

MassDEP completed its sanitary survey of the Fitchburg public water system on Monday with the day-long inspection of the Falulah plant. MA DEP will be completing its report and reviewing with Fitchburg Water in the coming weeks; however, no major issues were identified.

MassDEP also released the full results of our lead and copper testing. Our water supply has a lead result of 0.003 mg/L which is five times below the threshold. Our copper was 0.118 mg/L with is 11 times below the threshold. The test results are so good that the City of Fitchburg has received a waiver due to good test results and only has to test the water once every three years.

### Water Treatment

| Reservoir Levels as of 10/4/19             |                          |                |                     |
|--|--------------------------|----------------|---------------------|
| Northern Reservoirs                        | Elevation below spillway |                | Southern Reservoirs |
| Fitchburg/Ashby                            | -2.76 feet               | -0.44 feet     | Meetinghouse        |
| Scott                                      | -2.36 feet               | -4.08 feet     | Mare Meadow         |
| Lovell                                     | -1.10 feet               | -0.41 feet     | Bickford            |
| Water Filtration Plant Flows/Production    |                          |                |                     |
|  | Falulah Plant            | Regional Plant | Totals              |
| Raw Water Inlet (Gal)                      | 8,959,000                | 26,426,000     | 35,385,000          |
| Backwash to waste (Gal)                    | 883,000                  | 3,009,000      | 3,892,000           |
| Finish Water - Treated & Distributed (Gal) | 8,076,000                | 23,417,000     | 31,493,000          |
| Efficiency                                 | 90%                      | 89%            | 89.0%               |

- DPW Engineering began drafting an RFP for replacement of the transmission line between the Falulah Water Treatment Facility and the Falulah water storage tanks.
- DPW Engineering sat in on two SCADA software demos, VTSCADA and Ignition SCADA.

### Fire Hydrants

| Total Hydrants | Out of Operation | Hydrants Replaced | Hydrants Repaired | Painted | Flushed |
|----------------|------------------|-------------------|-------------------|---------|---------|
| 1,632          | 1                | 0                 | 2                 | 2       | 15      |

- FWD personnel continued hydrant flushing on the High System in the Madison Street and Clarendon Street area.
- FWD personnel excavated, removed and replaced two old Corey fire hydrants on Fairmount Street (near #282 and #320 Fairmount Street) on Thursday. Two, 6-inch-by-6-inch-by-6-inch tees were removed and two new tees, two 6-inch gate valves, and two Mueller hydrants were installed all in the same day. Trenches were filled, compacted and repaved.

#### Water Distribution

- On Monday and Tuesday, FWD personnel checked, cleaned, and operated multiple gate valves on Main Street and side streets between Fox Street and River Street to prepare for the shutdown of both 16-inch water mains on Main Street. The shutdowns were to allow the contractor for the City Hall project to abandon two existing service lines and install one new service line to City Hall. A total of 15 water gates were cleaned and operated.
- FWD personnel shutdown the 16-inch Low System water main on Main Street on Monday night to allow the contractor (for the City Hall project) remove/cut out a 16-inch-by-16-inch-by-4-inch tee and install 13 feet of 16-inch ductile iron water main and two couplings. The water main was then recharged and flushed. A total of 10 water gates (two 16-inch gates on Main Street and eight 8-inch gates on side streets) needed to be shut and then reopened. FFD was notified of hydrants that were out of service during the shutdown and then notified when hydrants were back in service. Everything went well with no issues (great planning and work by distribution personnel!).
- FWD personnel shutdown the 16-inch High System water main on Main Street on Tuesday night to allow the contractor (for the City Hall project) to remove a 16-inch-by-16-inch-by-6-inch tee and install a new 16-inch-by-16-inch-by-8-inch tee and gate valve. The water main was then recharged and flushed. A total of 5 water gates (two, 16-inch gates on Main Street and three, 8-inch gates on side streets) needed to shut and then reopened. FFD was notified of hydrants that were out of service during the shutdown and then notified when hydrants were back in service. Again, as with the previous night, everything went well with no issues (great planning and work by distribution personnel!).
- FWD personnel responded to 166 Boulder Drive (Putman Place) on Monday afternoon for a report leak on the 8-inch fire line. After shutting down the fire line, a private contractor (Tandem) repaired the leak on the 8-inch line.
- While closing the 8-inch gate valve on Boulder Drive at Newton Place to shut down the fire line to 166 Boulder Drive, the valve malfunctioned and it was believed to have broken. However, after excavating the valve it was discovered that large rocks impeded the function of the operating nut. Rocks were cleared and valve was backfilled. It was opened upon the repair of the break on the 8-inch fire line.
- Investigated low water pressure at 33 Alpine Road, no sign of leak but owner's side of water service is old iron pipe which is likely restricted with tuberculation and restricting flow.
- FWD personnel completely weekly inspections, maintenance, cleaning of vehicles and building.

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

| Water Permits and Inspections       |        |
|-------------------------------------|--------|
| Type                                | Number |
| Emergency DigSafe Markouts          | 0      |
| DigSafe Markouts                    | 24     |
| Inspections of Work on Water System | 4      |
| Record Plan Updates                 | 14     |
| Curb Stops Turned off/on            | 3      |
| Located/cleaned gate/curb boxes     | 18     |
| Final Readings/Real Estate Closings | 15     |
| New Meter Installations             | 11     |
| Backflow Preventers Tested          | 31     |
| Residential Appointments Made       | 71     |
| Totals                              | 191    |

## WASTE WATER

During the last week of September, the WWTF treated 35.2 million gallons of sewage with no bypasses. In total, 37.7 tons of organics and 82.5 tons of solids were removed and prevented from entering the Nashua River.

| Week of 9/22/2019 - 9/28/2019 |         |                 |
|-------------------------------|---------|-----------------|
| Sewage Flow                   | 35.21   | Million Gallons |
| Rainfall                      | 0.20    | inches          |
| Secondary Bypass              | 0       | Million Gallons |
| BOD <sub>in</sub> (lbs)       | 76,741  | pounds          |
| BOD <sub>out</sub> (lbs)      | 1,372   | pounds          |
| BOD Removal (%)               | 97.68%  |                 |
| TSS <sub>in</sub> (lbs)       | 167,648 | pounds          |
| TSS <sub>out</sub> (lbs)      | 2,550   | pounds          |
| TSS Removal (%)               | 98.25%  |                 |

## Sewer System

- Installed approximately 100 feet of 8-inch diameter sewer pipe on Airport Road, including coring into 2 existing manholes. The purpose for the installation was to re-route an oil/water separator drain from Penske Truck to an active sewer. The current service was installed in the 1980s, and tied into a sewer that was abandoned in 1976.
- Utilized new trench box to protect workers inside trenches.

- Responded to a service call at 9 Hannigan Court on 10/4/2019,. The issue was determined to be a homeowner responsibility.
- As part of our free demonstration with the company, ADS Environmental replaced three flow meters that were not communicating.
- Continued revising the On-Call Construction Services Contract.
- Reviewed combination manhole plans for Valley Street.
- Conducted Planning Board Review for Harper Furniture Building Redevelopment.
- Coordinated with MassDOT on Phillips Brook Bridge Project, in order to place rip-rap and crushed stone to protect exposed 24-inch trunk sewer in riverbed. MassDOT will do work at no charge.
- Worked with GIS Engineer, and located 2 additional buried sewer manholes. We are now down to only 33 manholes that need to be located, out of 3,580 manholes in the City.



Figure 3 - Airport Road Sewer Work – Trench Box on right

### Plant Operations

Due to the recent dry weather, there were no bypass events at the plant. Plant maintenance continued with preventative on the various elements of the treatment system.

| Work Order Report September 27th - October 3rd |         |                                       |        |   |        |
|--|---------|---------------------------------------|--------|---|--------|
| Demand Statistics                              |         | PM Statistics                         |        | Averages                                |        |
| Rejected Work Orders                           | 0       | Rejected Work Orders                  | 0      | % Total Work Orders Completed On Time   | 95.80% |
| Demand Work Orders                             | 1       | PM Work Orders                        | 23     | Avg. Days Late / All Work Orders        | 1      |
| Demand Work Orders Completed Late              | 0       | PM Work Orders Completed Late         | 1      | Avg. Days to Complete / All Work Orders | 2.93   |
| Demand Work Orders Completed On Time           | 1       | PM Work Orders Completed On Time      | 22     | Total Man Hours                         | 233    |
| % Demand Work Orders Completed On Time         | 100.00% | % PM Work Orders Completed On Time    | 95.70% |   |        |
| Avg. Days Late / Demand Work Order             | 0       | Avg. Days Late / PM Work Order        | 1      |   |        |
| Avg. Days to Complete / Demand Work Order      | 0       | Avg. Days to Complete / PM Work Order | 2.93   |   |        |

## ENGINEERING

DPW Engineering conducted the following Planning Board Special Permit Application reviews:

- 340 Marshall Street
- 10 Main St., 1-11 Summer St., 15 Summer St. (Moran Square/Harper Furniture Redevelopment Project)
- Old Princeton Road (4-Unit PUD, reviewed revised submittal documents including plans, test pit logs, and stormwater report)

DPW Engineering reviewed plans submitted for three new single-family homes on Valley Street. Three sewer connection permits were issued. Comments were given to developer's engineer requesting more information.

| <b>Engineering Services</b> |                         |               |                   |
|-----------------------------|-------------------------|---------------|-------------------|
|                             | <u>Type</u>             | <u>Number</u> | <u>Fees</u>       |
| PERMITS                     | Dumpster Permits        | 1             |                   |
|                             | Trench Permits          | 1             | \$ 75.00          |
|                             | Excavation Permits      | 5             | \$1,750.00        |
|                             | Driveway Permits        | 0             |                   |
|                             | Sign Permits            | 0             |                   |
|                             | Sewer Permits           | 3             | \$6,000.00        |
| INSPECTIONS                 | Driveway Inspections    | 0             | n/a               |
|                             | Trench Inspections      | 10            | n/a               |
|                             | Site Inspections        | 0             | n/a               |
|                             | Dig-Safe requests       | 5             | n/a               |
|                             | Sewer/Drain Inspections | 10            | n/a               |
|                             |                         |               | n/a               |
|                             | New Address Assignments |               | n/a               |
|                             | Parcel Updates          | 0             |                   |
|                             | Planning Reviews        | 4             | n/a               |
|                             | <b>Totals</b>           | <b>36</b>     | <b>\$7,825.00</b> |

## ADMINISTRATION

- Reviewed all DPW Department accounts for accuracy and monitored budgets.
- Performed a fuel analysis on gallons of diesel/gas purchased in FY19 as required for green communities reporting.
- Coordination efforts are underway for the salt shed ribbon cutting Friday October 11<sup>th</sup>.
- Provided FY20 Q1 financial data to Civil Engineer for inclusion in the McTaggart's Dam grant quarterly update.
- All DPW divisions worked on the accumulated absence reports that were due on October 4<sup>th</sup> for the period thru June 30, 2019. Reports are due twice a year.

### 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            | 27            | \$ 17,191        | *Note 1       |                  |             |             |
| Cemeteries                           |               |                  |               |                  |             |             |
| Parks                                |               |                  |               |                  |             |             |
| Recreation                           |               |                  |               |                  |             |             |
| Water Supply                         | 41            | \$ 37,458        |               |                  |             |             |
| Waste Water                          | 17            | \$ 28,234        | *Note 2       | \$ 33,140        |             |             |
| <b>Total</b>                         | <b>85</b>     | <b>\$ 82,883</b> | <b>-</b>      | <b>\$ 33,140</b> | <b>\$ -</b> | <b>\$ -</b> |
| *1 - Engineering Permits             |               |                  |               |                  |             |             |
| *2 - Septage at East Plant (Gallons) |               | 389,882          |               |                  |             |             |