

To: Mayor William Martin
From: Don Ouellette, P.E.
DPW Director

Update # 36

Date of Report: December 29, 2017

Period Covered: November 30, 2017 to December 29, 2017

Re: Items of Interest

Highway Issues:

1) **Chapter 90**

Completed for 2017

2) **Nash's Mill Bridge**

The 100% plans have been delivered to MassDOT for final review. The appraisal and the review have been submitted to MassDOT. The city councilors voted to approve the order of taking and easements December 28, 2017. The site plan with the order of taking and the easements was recorded December 29, 2017 with the Registry of Deeds. Everything appears to be on schedule for a bid date in March and construction start date somewhere in July to September 2018.

This will be a two-year project at which time the road will be closed. It is also an approximate \$3 million project which will be paid for by the state. Our share involved the design and the Order of Taking. I look forward to seeing this project started.

3) **Fixed Network Meter Program**

We are developing the presentation for this project which we have requested funding for Fiscal Year 2019. The intention would be to start this project on or about July 1, 2018 and it is expected to be a two-year project. This program would replace 70% of the existing water meters. It would also install transmitters on 100% of the houses that would relay the water readings to a receiver which would collect the data for water meter readings.

We just recently ran a report and found that 1,900 meters are older than 25 years. We also found that 2,886 meters were older than 20 years old. 4000 meters are older than 15 years. The expected life of a water meter is 12 to 15 years old depending on the amount of flow that has gone through this meter. The fixed network system is a proven technology that will save the town a substantial amount of money. This program got delayed one year. (No Change)

4) **Wiley Russell Dam**

This will be on next year's Capital Plan. I plan to meet with Connecticut River Conservancy in early November to plan what our next step should be. This whole area needs a long-term plan/vision. (No Change)

5) **Trees and Beautifications**

Completed for 2017

For next year we received a \$5000 matching DCR grant to plant trees. The timing for this will work out perfectly. The summer interns will develop next year's planting list. With their \$5000 and our \$5000 we should be able to plant 50 to 70 trees next year which is our annual goal.

We will be requesting several Veterans Memorial trees to be planted in a couple of the local parks. These trees would be free except we do have to plant them. If you know of anyone who wishes to get on the tree list please have them call Janine at the DPW Office. These trees are at no charge to the resident.

We have submitted a new USDA grant request for a 1,000 trees over three years.

We also received \$18,000 from Berkshire Gas for the Tree Program. (No Change)

6) **Maple Brook Culvert Sewer Repairs.**

We have delayed some of this work because we are working with MassDOT and the railroad to develop a solution for a portion of Maple Brook that is under the railroad tracks near Allen Street. In our latest meeting MassDOT and the railroad accepted responsibility for the culvert at that location.

This is great news for us because we will now focus our effort on lining the sewer pipes and doing the floor repairs. We also still have several manhole structures that need to be redone. Most of this work has been delayed to late November or early December because of our heavy construction season. (No Change)

7) **Silver Street Project**

Completed

8) **West Street Project**

While inspecting the sewer and drain pipes on West Street we found that the drain pipe is un-repairable and that the water main was installed in 1917. This has been submitted as a CDBG project for next summer. This is listed as a design project for the engineering department.
(No change)

9) **Reconstruction of Wisdom Way**

Preliminary survey work is complete and the design plans are nearly 25% complete. We had a design meeting at MA. Highway to discuss the 25% plans with Fuss and O'Neil Engineering Company. A lot of topics were discussed and we seem to be on track to submit the 25% plans in January 2018. A utility meeting and then a public hearing will need to be scheduled. This project is TIP eligible and I hope to see this on next year TIP. The Mayor and Town Council have approved the design money to move this project forward. The funding is only to get the design to the 25% level which is a very key milestone. The funding

for this project is very similar to the Nash's Mill Project in that we are responsible for the design and the construction costs will be paid by the State.

Expect the design costs to be somewhere in the neighborhood of \$375,000-\$400,000. The construction cost for this roadway will be somewhere around 3½ million dollars to \$4 million. If we are aggressive and get this design completed we could possibly see this road completed in three years instead of five.

10) **Shelburne Road Washout**

Nick Reitzel and I are looking at ways to repair this washout on Shelburne Road. We now think that we can do this project in-house with a couple of vendors. Our intent right now is to develop a plan using pre-built blocks such as Redi Rock to construct a new 16 foot high retaining wall. The challenges to this project is first build a firm foundation at the bottom of the ravine most likely a concrete footing pinned into the existing ledge and then to tie back into the ledge. The small box culvert also needs to be replaced. We will need a crane and operator to place the blocks and box culvert. Also a tracked excavator to do about half of the excavation. An Engineering Firm to develop a footing plan and a pinning system for the wall. Our rough estimates for this work, is about \$500,000. This estimate is only for the bad washout that happened in 2001. There are two other culverts that need to be repaired but we feel we can do this in-house. The entire road will have to be reclaimed and paved and my rough estimate would be another \$300-\$400,000 to complete everything. This work is very similar to work that I have done in other communities. The road would be closed for two months. Borings were completed and this project is on hold until we receive either a grant or local funding. (No change)

11) **DPW Yard Improvements**

The DPW yard improvements for this year.

1. Upgrade the emergency generator. This generator has been placed at the DPW Yard. We need to update some of our electrical systems before the generator can be installed. It is currently being evaluated and hopefully will have this in place within the next 2 to 4 weeks. (No Change)
2. The new office building for the DPW Engineer's and Administration Staff was rebid and awarded to Renaissance Builders. The schedule was delayed to June 2018. The final design issues have been resolved and the building has been ordered. The cellar hole has been delayed until April 2018 at which time the foundation will be installed.
3. Last item is that we plan on painting the existing DPW building using prisoners. We completed three sides and ran out of paint and the free labor for this year. Completed for this year. The DPW has received multiple positive comments.

12) **I/I Work**

We have had significant reduction. It appears that we have reduced the I/I at least 50%. Our peaks have been less than 10 million gals per day and recede back to 3 or 4 million gals within a day. On Silver Street we found a couple of illegal connections and we repaired them as part of the construction effort. One notable illegal connection was from Veterans field. We also completed a separation on School Street and we lined a couple of manholes.

We also expect to see a reduction of I/I from the Tyler Place Pump Station Replacement. That work is nearly complete. Utilizing the Maple Brook funding we are looking at inspecting the Riddell and Beacon portions of the brook and also at the Wells Street DPW Yard. We still have more work to do but we are getting some encouraging results. Because of this improvement we are looking at adding Pickett Lane to the sewer system and we are proposing to take on more septage. The septage will generate an additional \$80,000 and actually helps our process at the Treatment Plant. We also met with DEP and several good conversations about our I/I program, anaerobic digestions, and some regional solutions which may help us get some much needed funding.

13) **Replacement of the three wastewater pump stations.**

Completed two of the pump station except for minor site work. The DPW will plant some new trees in both locations next spring. Leyden Woods Pump station still needs to be completed and we are requesting funds for this project in hopes of doing this work next summer. The current contactor has agreed to keep his bid price the same so this project would not require rebidding next year.

14) **Dredging the Glen and small Dam repairs**

The Water Quality Permit has been submitted and we have a 30 day comment period. So far we have received positive comments from Corps of Engineers, National Historical Society, and the Natural Heritage Foundation. On December 8 we have a site visit from MEPA. We received MEPA approval December 26, 2017 and we are still waiting on the water Quality Permit from the State DEP. The hope is we can get this permit approved in January 2018.

DEP agreed to allow us to test the material behind the dam after we dredge. The little bit of sampling that we've completed shows very clean benign sediment.

15) **Pickett Lane Sewer Extension.**

On Pickett Lane there is a property that had its septic tank fail Title 5 and they were ordered to have a new system installed. Unfortunately that area does not perk and does not have a sewer line. The Engineering Department evaluated three options and it was determined that best solution would be to install a pressure main down the street and allow the owners to hook in as their systems fail.

We are proposing betterment be charged to each owner for the work in the street. As the Director I have met with several homeowners to present this option in a neighborhood meeting August 16, 2017. I had a second meeting on about October 19, to see if we have neighbor support of the idea of the betterment. We have a petition with 13 signatures on it and I plan to address the Town Council in January and it has also been added to the DPW Capital Plan for next year. (No Change)

16) **Poet Seat Repairs.**

This project has been bid. The work will not start until next spring. The intent is to repair all of the cracks and masonry repairs especially on the third level. The stairs will be welded next spring and then painted. (No Change)

17) **Regional Anaerobic Digestion**

The city of Greenfield's wastewater sludge disposal process is becoming very expensive and is becoming unsustainable. All treatment plants generate sludge which can be disposed of in landfills, incinerated, or composted. We have been hauling our sludge for years to Montague Fitchburg, and Springfield. All three of these locations have closed. In order for us to dispose of sludge we now need to haul to Cranston Rhode Island or Blackstone Massachusetts. Both of these locations are over 100 miles away one way and the availability to dispose of sludge at these sites is not guaranteed. Mark Holley and I are proposing to develop a regional wastewater sludge digester. We have conducted a meeting where we had representatives from Deerfield, Sunderland, Montague and South Deerfield to discuss the concept of building one digester system to handle all five communities and possibly Hatfield and Northfield. We both have conducted a field visit to Clinton wastewater treatment plant and to Dartmouth anaerobic digester facility to observe them and get a feel for what a digester system would look like. We do plan on doing a couple more visits in January. We've also had discussions with the board of selectmen in a couple of these communities. There is a lot of enthusiasm both with the community and DEP. This problem is becoming prevalent all over the country. We have requested from FRCOG assistance in drafting and inter-municipal agreement to which they have agreed. We have applied for a CEC grant which will conduct a feasibility study and a pilot study utilizing the University of Massachusetts research professor Chul Park's research. Prof. Park has developed better bacteria to use any anaerobic digester which may speed up the digestion and reduce the holding time required under current systems. This has worked in the lab and now we are going to try this process on a larger scale. We also utilized a company called Commonwealth Resource Management Corporation. They currently operate several landfill waste gas to energy operations and also have a couple of privately owned anaerobic digester's. They are considered to be one of the experts in the field. We are developing a white paper which will be a working document, in other words it will change. It is the intent is to utilize this paper to start initiating multiple grant opportunities to help lower the cost of this project. This is a new initiative but it is an old idea.

18) **Winter Operations**

We have had several winter events. We have treated the roads approximately seven times and we've had two snow/ice events. I want to take a moment to thank the DPW employees who came in on Christmas morning to plow and treat the roadways. We have received a lot of compliments and I want to thank you for those and we've had a couple of complaints. Every storm in New England is different. This time of year ice, can be a big deal whereas in January February and March we mainly deal with snow. As a rule we do not plow until we get three or more inches on the ground. This is a common practice throughout New England and is done to conserve funding. We have been aggressively pre-treating the roads with salt prior to the storm event. This type of salting is seven times more effective than treating the roads after ice or hardpan has already formed. In the next couple of weeks you may see us applying brine which is a mixture of water and salt. This process should save on the amount of salt used. It will be sprayed on the surfaces. By treating roads this way you apply the salt only on the surfaces that you want, no over spray and to because it's pre-wetted it will stick to the roadways better. Brine is also activated and treats the roads more efficiently. We will have at least one truck outfitted with a water tank and spray bar and possibly two before the end of January.

19) **Future Focus**

We are in winter operations. The Engineering Department will be designing several projects to get them shovel ready and Mark Holley and I will be working on the anaerobic digester.