

City of Keene
New Hampshire

MUNICIPAL SERVICES, FACILITIES AND INFRASTRUCTURE COMMITTEE
MEETING MINUTES

Wednesday, June 7, 2017

6:00 PM

Council Chambers

Members Present:

Janis O. Manwaring, Chair
Robert J. O'Connor
Stephen L. Hooper
Gary P. Lamoureux

Staff Present:

Medard Kopczynski, City Manager
Thomas Mullins, City Attorney
Don Lussier, City Engineer
Kürt Blomquist, Public Works Director
Beth Fox, Assistant City Manager/ HR Director

Members Not Present:

Randy L. Filiault, Vice-Chair

Chair Manwaring called the meeting to order at 6:00 PM, welcomed the public, and explained the rules of procedure.

1) Discontinuation of a Portion of Production Avenue

Chair Manwaring noted that there was already a public meeting on this matter, so there will be no public comment; additionally Chair Manwaring recused herself from voting on this matter.

The City Engineer recapped this project, noting the City Council conducted a site visit on June 1; he added there were no significant comments from the public meeting. Liberty Utilities has petitioned the City to discontinue a portion of Production Avenue to allow site development. The section of Production Avenue to be discontinued was formerly abutted by four lots, which have now all been purchased by Liberty Utilities. Liberty Utilities has requested a few other actions in addition to the discontinuation:

- Discontinuation of a water line easement originally put in place to allow the City to place a water main to a rear property. That property has since been put under a conservation easement held by the City. Because this is no longer a developable piece of land there is no need to continue the water line easement.
- Discontinuation of a drainage easement, which was originally intended to serve the two building lots on the east side of the site; with the merger of the lots, this is no longer necessary.
- Because the applicants propose removing the turnaround in the public way, there needs to be another way for vehicles to change direction. The petitioner has requested the City accept a deed for a portion of land currently owned by Liberty Utilities so they can build a turnaround that meets City code standards. This design has been approved by the Public Works Director.

- The City has requested that the petitioner grant the City an access easement to continue maintenance of the tax ditch system, which will no longer be accessible once the drainage easement is discontinued. This will allow the City the ability to reach the tax ditches with trucks and equipment for maintenance. Liberty Utilities has voluntarily agreed to this access easement.

The City Engineer continued that the agenda packet included a revised version of the resolution. What has been described in this meeting is the same as was described at the site visit, to Council, and at the public meeting. The original paperwork submitted by the petitioner did not include descriptions of the access agreement or turnaround layout; these have now been added to the paperwork and corrected through the revision.

Sean Fury, Gas Construction Manager for Liberty Utilities in NH, noted this project has been approved by the Planning Board and received positive feedback from City Council. He said this discontinuation will allow the installation of a Compressed Natural Gas skid at the end of Production Avenue beginning the conversion of Monadnock Marketplace and eventually the whole system.

Following guidance from the City Attorney, Councilor O'Connor made the following motion, which was seconded by Councilor Lamoureux.

On a vote of 3-0, the Municipal Services, Facilities and Infrastructure Committee recommend to the City Council that the City Manager be authorized to: 1) provide a deed for an area of land previously laid out at Production Avenue to Liberty Utilities, 2) accept a deed for access easement from Liberty Utilities, 3) accept a deed for land to be laid out as an amendment to the layout of Production Avenue for a proposed turnaround area, 4) release the City's interest in easements for drainage and utility lines across the property of Liberty Utilities, 5) accept documentation to amend a portion of the layout of Production Avenue, and 6) discontinuance upon successful construction of the turnaround.

Councilor O'Connor made the following motion, which was seconded by Councilor Lamoureux.

On a vote of 3-0, the Municipal Services, Facilities and Infrastructure Committee recommend the adoption of resolution R2017-17-A as amended.

2) Departmental Presentation – Complex Task Showcases Employee Skills – Public Works Department

Chair Manwaring welcomed Donna Hanscom, Assistant Public Works Director. Ms. Hanscom said this presentation was to share some things the Council and public may not know the Public Works Department does; she will be back later in June to present further work on the Black Brook water storage tank. She said the project to be presented at this meeting showcases the talents and skills of the Public Works Department. Ms. Hanscom commended the employees presenting for working to accomplish this project in addition

to normal duties. She said the employees worked as a team and used largely in-house capabilities to achieve these amazing results. Ms. Hanscom said she is proud of this group and hopes the MSFI Committee and City will be as well. She introduced Ben Crowder (Water Treatment Facility Manager, holds City's Water Distribution License), Chris Tarr (Utilities Maintenance Foreman), Todd Calderwood (Water/Sewer Distributions and Collections Foreman), and Neil Goodell (Utilities Maintenance Electrician).

Mr. Tarr explained that this project repairing the Black Brook tank is one that showcases the skills and diversity of this group of employees. The 38,000 gallon precast concrete tank was built in 1996. The tank was never designed to be taken offline; it has one pipe in and one out, and a valve that shuts it off. There is no way to drain it; it goes back into the distribution system. The tank serves 13,800 linear feet of water main, 22 hydrants, and 39 services (three residential, the remaining are industrial). Mr. Tarr showed a map demonstrating the distribution area, the Black Brook Pump Station, and the Black Brook tank. This station serves Summit Road, Corporate Drive, Wyman Way, Bowman Drive, Ford Street, and Black Brook Road. Industries in the area include Smith Medical and Janos Technology. The Pump Station was also built in 1996 and houses two constant speed pumps – meaning they start running at 100% (20 HP, 208 v, 3,500 RPM). Depending on the level in the tank, output ranges from 200-300 gallons per minute. Mr. Tarr continued explaining the electrical components of the Pump Station: motor controllers, overcurrent devices, pressure transducers, power supply, etc. The pumps were electronically interlocked to prevent simultaneous operation meaning the two pumps alternate running at 100%.

In 2015, the City contracted Liquid Engineering to have five of their water storage tanks cleaned and inspected, including Black Brook. NH DES requires any tank storing over 20,000 gallons of water be inspected every three to five years. Upon inspection of the Black Brook tank some problems were found, in particular the tank was suffering from stratification – significant temperature differences between the top and bottom of the tank resulting in freezing that scarred the inside of the tank. Mr. Tarr explained the necessary actions that took place before work could commence on the tank:

- Maintenance of safe water quality and pressure throughout the system
- Insure adequate fire flow for all industries and a back-up if a problem arose at the Pump Station
- Flow tests to ensure the Fire Department would have adequate flow
- Limit inconvenience to customers in the Black Brook Pressure Zone
- Drain the tank

Mr. Tarr continued explaining the various repairs and upgrades:

- Pump Station
 - Changed out constant speed drivers for variable speed drivers – allows pump and motors to run at variable speeds, high or low, and maintain low system pressure.
 - Removed the interlocking mechanism, allowing both pumps to run at the same time and increased fire flow if needed while tank was offline.

- Added set points and programming to use system pressure outside the tank to denote how much the pump has to run.
- Flow Test Pumps
 - Removed and isolated the pump from the system to conduct an initial flow test and found tremendous flows considering the original design specifications.
 - One pump at 100% produced 350 gallons per minute.
 - Two pumps at 100% produced 700 gallons per minutes
- Back-Up Pumping System
 - Rented a temporary diesel pump to support the pump station with fire flows, or serve as a redundant pumping station if the primary pump station failed.
 - Installed a new hydrant at the pump station on the discharge side to accommodate the backup diesel pump. This avoided running hundreds of feet of pipe under extremely high pressure.
- Pressure
 - When the system is at normal operating pressures the suction side of the pump system is 70 pounds per square inch (PSI) and 130 PSI on the discharge side. If 130 PSI is not maintained at the lower level on the far outreaches of the distribution system, there will not be adequate supply pressure.
- Permanent Pipe (HDPE) Installed Under the Access Road for Future Use
 - Able to leave in place permanently with the following benefits:
 - Never limited access in and out of pump station in case of emergency.
 - This is already in place for future projects.
- Disinfection of Backup Pump
 - Had to guarantee quality of water. Used Shock Chlorination (300 PPM) to truly disinfect. For reference, drinking water comes out at 1.5 PPM chlorine. This guarantees eradication of any bacteria in the pipe.
 - Took samples until a clean sample was available to ensure safe distribution.
- Disposal of Highly Chlorinated Water
 - That highly chlorinated water could not simply be released. Used system pressure of a fire hose to pump that water into a tanker truck (800 gallons). This left water in the pipe at a safe and normal level of chlorine for drinking.
 - Discharged chlorinated water into a manhole nearby, with permission, as opposed to transporting and risking a spill.
- Customer Service
 - Customers were notified with a press release/phone call before testing the pumps with the tank isolated.
 - Keene Fire Department was notified.
 - To this point in the project, water service has not been interrupted and water quality has been maintained at the highest standard.

Mr. Calderwood spoke about drain installation. Mr. Calderwood said the Water/Sewer Division is responsible for almost 200 miles of water and sewer mains under the City streets, along with the valves and hydrants. While hydrants are usually associated with the Fire Department, they do more than that. Hydrants are used as tools to monitor the drinking water distribution system, to exercise that system, and in cases such as this project, to bypass a piece of the system under repair. The Black Brook tank was not designed to be taken down and worked on. A hydrant was installed as a tool to drain the tank for this and future projects. The Pump Station also lacked a hydrant on the high pressure side, denying the ability for larger projects. The Water/Sewer Division also installed a hydrant at the Pump Station to also facilitate this and future projects. In order to install a hydrant and not interrupt service, a live-tap of the water main was conducted; cutting into the water main when it is under pressure to connect a service line. Mr. Calderwood used photos to demonstrate equipment that allows staff to not only perform this work in-house, but save the City considerable costs. This also allows the project to take place on the City's timeline and not leave the project in the hands of a contractor who may not view the City as their top priority.

Mr. Tarr continued that once the hydrants were installed and the water sanitized, the Fire Department did an overall flow test with the bypass pump to insure adequate flow. There was also genuine concern about high pressure in the system – if there were a fault in the drives or motors – so a pressure relief valve was installed for system protection.

Mr. Tarr continued listing the various City departments involved in this project: Utilities Maintenance, Water Operations, water/Sewer, Engineering, Laboratory, Highway, Fire Department, and Department of Public Works Administration.

Mr. Tarr concluded saying this presentation was an opportunity to see the scope of planning and preparation it took for this project to be a success. Only one subcontractor was utilized for specialized computer programming. He said this project is just one example of the great skills for City staff; it is impressive how multiple departments can unify toward one objective. He thanked everyone involved in the process.

Chair Manwaring asked if the empty tank has been cleaned. Mr. Tarr replied the contract for cleaning was already in place and was finished on June 5. Three contractors provided estimates for repair work inside the tank. The tank is currently refilled and pending a bacteria sample, will be back online June 9. This fall the additional repairs will take place.

Councilor O'Connor asked if there is a solution for water stratification. Mr. Tarr replied yes, six years ago a solar mixer was installed to pull water from the bottom to the top keeping temperatures constant and maintaining a higher chlorine residual. With that technology, there is only a 0.5 degree temperature difference between the top and bottom.

Councilor O'Connor asked why fire hydrants in Keene are different colors. Mr. Calderwood replied that all should be silver but there has been a lapse in enforcement of

that and now some are red. He said all that matters to the Fire Department, however, is the color of the bonnet on top of the hydrant.

Councilor Lamoureux asked if they have tracked the approximate amount of money saved by this process. Mr. Tarr replied no, but it is a significant amount. Councilor Lamoureux said that sharing that amount with the Council when available would be appreciated. Councilor Lamoureux continued thanking the group for their presentation as well as all the staff that worked so well together. He said it is important for the public to hear the skill, dedication, and pride of City employees. The City Manager agreed noting the professionalism and dedication of City staff and thanked Ms. Hanscom for organizing this presentation. He added, in reference to the chlorine discussed earlier, that household bleach is 50ppm chlorine; this demonstrates the caustic chemicals and difficulties in the work to ensure safe drinking water.

Councilor Hooper echoed appreciation for this work and presentation that went above and beyond by using in-house creativity to make this important and complex fix. He said it is important for the public to see the faces behind the work the City does.

Chair Manwaring asked the presenters to share how long they have been doing this work and the type of training it required.

Mr. Tarr said he was born and raised in Keene and worked for a long time building swimming pools, which piqued his interest in water. He said he was fortunate to begin working for the City and he takes pride in working for the City where he was born and raised.

Mr. Calderwood said his water and sewer career began in Brattleboro where he received his Water District and Water Operations licenses. He has been working for the City of Keene for 15 years, through which there have been many opportunities to grow knowledge and expand. He continued explaining challenging projects this group has worked on.

Mr. Goodell said he worked for a large local electrical contractor before working for the City. He actually did the wiring on the pump house in 1996 when working for another company. He received the Master Electrician position when the City created it nine years ago. He said while many say that water and electricity do not mix, in this situation, they do. He said the City positively encourages employees to be diversely trained; he has acquired all of his water and waste licenses while working for the City.

Mr. Crowder said he started construction work in college installing pipes. He was fortunate to begin working for Mr. Calderwood in 2008 before moving to the Water Treatment Facility. Mr. Crowder holds the Water Distribution and Treatment Licenses for the City. He said having a group of talented individuals allowed successful completion of this project.

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Chair Manwaring recognized Councilor Philip Jones who thanked the group for their work. He said when this tank was constructed in 1996 it was controversial because it was in a TIF district. He thanked the presenters for showing that the Council made the right decision at that time.

The City Attorney asked about structures visible inside the empty tank in the photos. Mr. Tarr indicated one of the structures is part of the solar mixer, which minimizes stratification of the water. The other structure is the manway access through the bottom with the tank when it is empty.

Councilor Lamoureux made the following motion, which was seconded by Councilor Hooper.

On a vote for 4-0, the Municipal Services, Facilities and Infrastructure Committee accept the Departmental Presentation – Complex Task Showcases Employee Skills – Public Works Department, as informational.

Hearing no further business, Chair Manwaring adjourned the meeting at 6:45 PM.

Respectfully submitted by,
Katie Kibler, Minute Taker