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# Meeting Notes

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| Subject | Peirce Island WWTF Upgrade – Monthly Public Construction Meeting |
| Date | July 17, 2019 |
| Time | 11:00 AM |
| Location | Portsmouth, NH |

A public meeting was held at 11:00 AM on July 17, 2019 in Conference Room A at Portsmouth City Hall for the subject project. A record of the discussion follows:

Terry Desmarais, City Engineer, gave an introduction to the meeting and outlined the topics of discussion, including work completed since the last meeting, work to be completed in the coming month, work anticipated in the next six months, construction cost to date, summary of Consent Decree milestones, events and recreation, and public input.

The members of the Project Team in attendance introduced themselves, and included:

- Peter Rice, Director of Public Works
- Terry Desmarais, City Engineer
- Patrick Wiley, Wastewater Operations Manager
- Jon Pearson, AECOM Project Manager
- Andy Brodeur, Methuen Construction, Project Manager

Terry noted that to obtain additional information regarding the project, there is a project website that can be accessed through www.cityofportsmouth.com/publicworks/wastewater/peirce-island-wastewater-facility/peirce-island-wastewater-facility-upgrade-project. The website is updated weekly with news and recreational information and contains a link to a reporting form that can be used to provide feedback or notify the City of any issues associated with the project. Terry Desmarais, City Engineer, is the point of contact for the City.

Jon discussed work that has been completed this month. He noted areas where work is ongoing at the site, including:

- Yard Piping / Utility Service
- Grit Building
- Solids Building
- Biological Aerated Filter (BAF) Building
- Chlorine Contact Tanks / Effluent Distribution Box
- Gravity Thickener No. 2

Jon reviewed photos of construction progress, including:

- Site Overview – Existing conditions of the Peirce Island Wastewater Treatment Facility in November 2016. Prior to construction, the treatment process consisted of the Aerated Grit Chambers, followed by the Primary Clarifiers and Chlorine Contact Tanks.
- Yard Piping and Utility Service - Work to install yard piping and electrical ductbanks between the Grit Building, Primary Clarifiers, Solids Building and BAF Building is in progress.
- BAF Building – Installation of mechanical process piping within the BAF cells, Pipe Gallery, and mechanical process spaces is in progress. Hydrostatic testing of the Stage 1 and Stage 2 cells is in progress. Work to install electrical conduit and electrical equipment throughout the building is in progress; this includes but is not limited to the wiring of the Motor Control Center and various control panels. Work to install the brick façade of the building and windows is in progress. Work to install the staircases in the stair towers is in progress.
- Solids Building – Installation of mechanical process piping and installation of mechanical process equipment in the Pump Gallery and Upper Level is underway; this includes but is not limited to the aerated sludge tanks blowers. The primary sludge pumps and grinders are now in service. Work to start up and test the screw presses, cake screw conveyors in the Dewatering Room and Sludge Truck Bay, screw press feed pumps and grinders, thickened sludge pumps, and polymer system is in progress. Work to construct and isolate chemical areas is underway this includes the application of protective coatings and work to install the chemical fill stations is underway. Work to install and wire electrical equipment within the Electrical Room and throughout the building is in progress. Plumbing, HVAC, and electrical work on the Lower Level and Upper Level is underway. Work to install the odor control unit, including installing ductwork and placing equipment on pads is in progress.
- Effluent Distribution Box – Work to construct the new wall has been completed. Work to install new piping and slide gates is underway.
- Gravity Thickener No. 2 – Work to remove the temporary primary sludge pumping system and the temporary building housing the pumps has been completed and primary sludge pumping is now carried out by the new primary sludge pumps in the Solids Building. Work to add concrete fill to Gravity Thickener No. 2 is in progress.

Andy discussed work anticipated for the coming month, including:

- Continue minor finish work in the Headworks Building.
- Continue architectural, structural, mechanical process, HVAC, plumbing, and electrical construction in the Grit Building.
- Continue installation and testing of process piping in the pipe gallery and Stage 2 of the BAF Building.
- Continue mechanical and electrical work throughout the BAF Building.
- Continue installation of slide gates in the BAF cells.
- Continue hydrostatic testing of BAF cells and effluent channels.
- Continue installation of stairs in the BAF and Solids Buildings.
- Continue masonry work on the BAF Building.
- Continue installation and testing, and startup of equipment and process piping in the Solids Building.
- Continue electrical, HVAC and plumbing work in the Solids Building.
- Continue painting of process piping in the Solids Building.
- Complete underground piping installation between the Grit Building, Solids Building and BAF Building.
- Continue gate installation and selective demolition in the Primary Clarifier Effluent Distribution Box.

- Continue installation of mechanism in Gravity Thickener No. 2.
- Begin temporary equipment relocation and selective demolition in the existing Sludge Processing Building

Andy then discussed the work anticipated through August and into January 2020, including:

- Grit Building – Interior: Complete selective architectural, structural and mechanical process modifications. Complete installation and turnover of new chemical systems (ferric chloride and polymer). Complete installation of mechanical process piping and equipment. Exterior: Complete work on the yard piping associated with the building and installation of exterior features such as doors and windows.
- BAF Building – Continue installation mechanical, electrical, plumbing, and HVAC systems, this includes the Boiler Room, Mechanical Room, and Blower Room. Continue interior painting and protective coatings. Complete installation of mechanical process piping and equipment. Begin startup and testing of equipment. Complete installation of stairs, ladders, railings and stair towers. Complete water testing of the BAF cells. Complete masonry work, including the brick façade. Complete installation of yard piping associated with the BAF Building and backfilling around the building.
- Solids Building – Complete work on interior mechanical process piping and equipment. Complete installation of chemical systems. Complete startup and testing of equipment. Complete interior painting and protective coatings. Complete installation of stairs, ladders and railings. Complete installation of yard piping and underground utilities in and around the Solids Building. Complete installation of exterior features, including windows and doors.
- Sanitary Pump Station No. 1 – Complete minor finish items within the structure.
- Operations Building – Complete hazardous materials abatement work as well as demolition of the upper level. Complete installation of new structural steel. Begin framework for exterior walls and roof. Begin mechanical processes, electrical, HVAC and plumbing rough-in work. Begin installation of CMU walls and chemical containment curbs in the basement.
- Chlorine Contact Tank/Effluent Distribution Box – Complete installation of new wall and slide gates.
- Underground Piping and Utility Services – Complete yard piping from the Primary Clarifiers to the BAF Building, Solids Building, and Primary Clarifier Effluent Distribution Box. Complete the electrical and communication ductbanks towards the BAF and Solids Buildings. Begin installation of utility connections to the Operations Building. Begin preparation for paved areas, this include placing the binder course pavement from the Grit Building down to the BAF Building.
- Misc. Areas – Complete modifications to the Primary Clarifier Effluent Distribution Box and Effluent Distribution Box, including but not limited to, selective demolition, application of coatings and installation of new slide gates. Complete installation of the flow meter in the vault that is adjacent to the generator.

Jon provided an update on the project construction cost:

- Original Contract: $72.786 million
- Change Order No. 1: $0.367 million
- Change Order No. 2: $0.547 million
- Change Order No. 3: $0.093 million
- Change Order No. 4: $0.163 million
- Change Order No. 5: $0.250 million

- Change Order No. 6: $0.292 million
- Change Oder No. 7: $0.169 million
- Total Contract: $74.667 million

Jon provided a summary of the project milestones set by the Consent Decree:

- Execute Contract for Construction Upgrades - Date: 9/1/2016 - Status: Complete
- Submit Two Additional Milestones for EPA Review and Approval - Date: 12/1/2016 - Status: Complete
- Additional Milestone 1: Transfer of the Existing SCADA system to the New Headworks Building - Date: 11/21/2017 - Status: Complete
- Additional Milestone 2: Startup and Testing of the Secondary Influent Pump Station in the New Solids Building - Date: 5/9/2019 - Status: Complete
- BAF Substantial Completion - Date: 12/1/2019 - Status: On Schedule
- Achieve Compliance with NPDES Permit Limits - Date: 4/1/2020 - Status: On Schedule

Jon noted that the project team is continuing to coordinate construction with community events. Upcoming events this month include the Yoga in the Park, Summer in the Streets – Pro Portsmouth, Prescott Park Concert Series, Prescott Park Community Showcase, Music on Vaughan Mall Stage, Chamber of Commerce Annual “Street. Life!” dinner, Plein Air Painting event – NH Art Association, and Strawbery Banke Events.

A question and answer session then occurred, and is summarized below:

Paige Trace asked the following:

> Q: As there is still work ongoing in the Solids Building and the BAF Building, did the startup and testing of Secondary Influent Pump Station (Consent Decree Additional Milestone 2) consist of turning the pumps on, seeing if they run properly, and turning them off? In addition, when were Additional Milestones 1 & 2 agreed upon?
> A: Jon responded that the startup and testing of the Secondary Influent Pump Station did involve starting the pumps, ensuring they operate correctly and turning them off. The pumps take primary clarifier effluent and pump it to the BAF Building for treatment. The BAF system is not in operation yet, thus the pumps are not yet in service. Terry noted that the EPA required that the City set two additional interim milestones. The two additional milestones are specific construction milestones that were unable to be selected prior to executing the construction contract between the City and Methuen Construction since they were determined based on the construction schedule provided by Methuen Construction. The milestones were reviewed and agreed upon in October 2016 by EPA, NH DES, CLF and other agencies. Each milestone has specific dates and requirements associated with it.
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> Q: On the slide showing images of the Effluent Distribution Box, is this the location where wet weather flow that has passed through the Primary Clarifiers but bypassed secondary treatment in the BAF Building during a wet weather event, mixes with flow that did undergo secondary treatment? How long will this flow remain in the chlorine contact tanks before being discharged to the Piscataqua River?
> A: Terry responded that during high flows from wet weather events, only a portion of the total plant influent flow will bypass the BAF system after passing through the Primary Clarifiers. This flow will then be directed to the Effluent Distribution Box, where it will be combined with

the BAF effluent prior to disinfection of all of the plant flow. High flow events do not occur very often. The flowrate that initiates bypassing of a portion of the total plant influent flow around the BAF will be dependent on how the BAF is being operated at the time. After entering the Effluent Distribution Box, the flow will pass through the Chlorine Contact Tanks. The time that the wastewater remains in the system before being discharged to the river is dependent on the total flow and will vary as the flow fluctuates.

Q: Can you describe the flow path of the wastewater through the BAF system and the function of the Stage 1 and Stage 2 cells?
A: Flow from the Primary Clarifiers will be pumped by the secondary influent pumps, located in the basement of the Solids Building, to the BAF Building via an underground pipe. The pipe enters the BAF Gallery and runs the length of the Gallery. The pipe has branches to convey flow to each BAF Stage 1 Cell (larger cells). Flow from each branch of this pipe will enter the Stage 1 cells at the bottom of the cells, pass upwards through media and exit through the nozzle decks located at the top of the cells into the Stage 1 Effluent Channel located over the gallery. From there, flow will enter another pipe which will convey the Stage 1 effluent to the Stage 2 cells (smaller cells). Wastewater will enter the Stage 2 cells at the bottom, flows upwards through the media and flow out the top of the cells through the nozzle deck. Effluent from the Stage 2 cells will be collected into one pipe, exit the BAF Building and be conveyed to the Effluent Distribution Box prior to disinfection.

Q: When is it anticipated that construction will begin on the Mechanic Street Pump Station, it has been mentioned that the pump station requires an upgrade?
A: Peter responded that the date for construction has not been set but it will likely be 3-4 years after the completion of the Peirce Island WWTF. The condition of the Peirce Island Road bridge must also be taken into consideration as the force main that conveys wastewater from the pump station to the WWTF runs underneath the bridge. Repairs were made to the bridge deck in anticipation of the WWTF upgrade so that it would be better equipped to handle the loads of construction vehicles; these repairs have extended the life span of the bridge. There is discussion that when the bridge undergoes construction this would be the appropriate time to work on the pump station as to minimize the disturbance of that area. Currently there is very little space in the pump station and it is difficult to operate due to the duplex layout of the pumps. When the pump station is upgraded, the layout would likely be modified so that there are multiple pumps that are better able to handle the range of flows that pass through the pump station.

Q: Have there been more CSO events in recent years than there have been in the past? Does the City send alerts when events occur for all CSO locations within the City sewer system, it currently does not appear that way?
A: Peter responded that in comparison to historical data, there has not been an increase in CSO events. In fact, due to the City's sewer separation projects there has been a reduction in the number of events and CSO volume compared to historical data. Terry noted that alerts should be sent out for all CSOs in the City in overflow events. The City will look into the issue raised about the alerts, and confirm whether alerts are being sent out for all CSOs. Peter noted that further improvements to the sewer system are being made in an effort to reduce CSOs.

Q: When is the EPA intending to issue the NPDES permit for the Peirce Island WWTF?

A: Terry responded that the NH DES is looking into a total nitrogen general permit concept that would apply to the municipalities that discharge into the Great Bay estuary and this includes Peirce Island. This general permit concept would set a total nitrogen annual average load for each municipality that discharges into the estuary. This allowable load for each municipality would include both point sources (WWTF discharges) and non-point sources (stormwater). Based on discussions, the point source load would be determined by using existing flow conditions for each WWTF and a total nitrogen concentration of 8 mg/L. In addition, a separate model will be used to determine the total nitrogen that can be discharged to the estuary from nonpoint sources. There are ongoing discussions regarding this topic and there is no date set for when the permit may be issued. As this permit would only cover total nitrogen that is discharged by all municipalities with WWTFs discharging to the estuary, it would be separate from the total nitrogen limit that was set as part of the Consent Decree as well as from the NPDES permits. The Peirce Island WWTF must still meet the requirement that was set in the Consent Decree for total nitrogen for a period of 5 years beginning in April 2020. It was noted that all NPDES permits are issued by the EPA, and that NHDES has significant input on stormwater regulation and water quality.

Q: In regards to Pease WWTF, will the growth of the Lonza pharmaceutical facility that discharges wastewater to Pease affect the total nitrogen general permit concept and the limit set for Pease?
A: Terry responded there are several ways the total nitrogen limit for each municipality will be set. For Pease WWTF, because it is considered to be a smaller facility, the total nitrogen load that it can discharge will be the same load that it is permitted to discharge currently. Even with Lonza's project growth, flow to Pease WWTF is not projected to exceed 2 MGD. The City is in the process of submitting a renewal application for the NPDES permit that applies to Pease, in this application the proposed flow is 1.77 MGD, previously the flow was set as 1.2 MGD.

Q: When will the media be placed in the BAF cells?
A: Jon responded that it is scheduled for this coming fall of 2019 with startup scheduled for December.

Q: Paige noted that she believed the notice of the public tour that was held on June 13th was only published in the paper with 2-days' notice and requested that another tour take place.
A: Terry/Peter responded that the tour was announced more than 2 weeks before the tour date. It was checked and confirmed during the meeting that the City issued a press release about the tour on May 28th. and it was posted on the City website The City does not control when the paper publishes articles. The City will look into whether it is possible to set up an additional tour that occurs before the winter.

The next public construction meeting will be on August 21, 2019 at 11:00 AM in Conference Room A at Portsmouth City Hall.

These notes present a summary of the items discussed at the meeting and are not a transcript of the meeting.