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# Meeting Notes

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| Subject | Peirce Island WWTF Upgrade – Monthly Public Construction Meeting |
| Date | August 21, 2019 |
| Time | 11:00 AM |
| Location | Portsmouth, NH |

A public meeting was held at 11:00 AM on August 21, 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
- Primary Clarifier Effluent (PCE) Distribution Box
- Grit Building
- Solids Building
- Biological Aerated Filter (BAF) Building
- Gravity Thickener No. 2
- Flow Meter Vault
- Chlorine Contact Tanks / Effluent Distribution Box

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. Temporary pumping systems were installed to allow for work to be conducted in the Primary Clarifier Effluent and Effluent Distribution Boxes.
- Primary Clarifier Effluent Distribution Box – work to replace old slide gates and install new slide gates and a new weir gate is in progress. During high flows resulting from wet weather events, the weir gate will control the amount of flow that is directed to the BAF treatment process and the portion that is bypassed.
- BAF Building – Installation of mechanical process piping and equipment within the BAF cells, Pipe Gallery, and mechanical process spaces is in progress. Hydrostatic testing of the Stage 1 cells is in progress. Work to install the nozzles within the nozzle decks is in progress; during the treatment process, water will pass through the strainer portion of the nozzle and the filter media will remain within the cell. 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 and equipment. 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 – 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 has been completed. Primary sludge is now being dewatered by the screw press and the existing Fournier Press that had been dewatering sludge has been taken out of service. Work to install the potassium permanganate chemical system is in progress. Work to install and wire remaining electrical features, including but not limited to permanent lighting, 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 has been completed and the unit is in use.
- Gravity Thickener No. 2 – Work to add concrete fill and install the protective coating in Gravity Thickener No. 2 is in progress.
- Flow Meter Vault – Earlier in the construction process, the flow meter vault was constructed around the existing 36-inch primary clarifier effluent line. The pipe was then cut and a new flow meter and isolation valve were installed.
- Effluent Distribution Box – Work to install new piping and slide gates is underway.

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 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.

- Begin delivery and installation of filter media at 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.
- 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 and 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 February 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 and turnover 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 – Complete installation mechanical, electrical, plumbing, and HVAC systems, this includes the Boiler Room, Mechanical Room, and Blower Room. Complete installation of mechanical process piping and equipment. Complete water testing of the BAF cells. Continue interior painting and protective coatings. Begin startup and testing of equipment, including but not limited to the delivery and loading of the filter media. Complete installation of stairs, ladders, railings and stair towers. 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 installation of chemical systems. Complete installation, startup and testing of remaining 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.
- Operations Building – Complete hazardous materials abatement work as well as demolition of the upper level and selective demolition in the lower 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.
- 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. Complete 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. Begin installation of sidewalks and railings at the Operation Building. Begin landscaping and grading at the Headworks and BAF Buildings.

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 National Multiple Sclerosis Society 2019 Bike MS: NH Seacoast Escape, Yoga in the Park, American Foundation for Suicide Prevention Out of Darkness Walk, My Breast Cancer Support 11th Annual Celebrate Pink 5K Walk/Run, and Strawbery Banke Events.

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

Paige Trace asked the following:

> Q: In reference to the slide showing the nozzles being individually installed into the BAF cell nozzle decks: if there is an issue with the performance of a cell, are operators able to know which cell isn't performing as anticipated? Also, if there is an issue, would it be due to one nozzle and is the operator able to replace that once nozzle or would they have to replace all the nozzles and media to remedy a performance issue? Also, will the high volume of fats, oils and grease within the City of Portsmouth's wastewater impact the BAF system.
> A: Terry responded that the media is a polystyrene material and thus would not "go bad" or need to be replaced, it does however provide a surface for the biological material to grow on. The nozzles and nozzle decks will be regularly inspected during operation to check for damaged areas. If a nozzle is found to be damaged, a single cell can be taken out of service to replace the damaged nozzle. A large portion of the fats and oils that are found in wastewater would be removed before entering the BAF system. Because fats, oils, and grease are buoyant, they are typically removed during primary clarification or upstream of the clarifiers in the grit chambers or in the Headworks. In addition, the City of Portsmouth has a Fats, Oils, and Grease (FOG) program where the City will work with local business to limit the amount of FOG are discharged into the sewer system. In addition, there are a number of FOG interceptors that are installed within the sewer system and there are likely more to be installed n the future.
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> Q: How do you know that the biological material will be able to withstand the lower temperatures experienced during the winter.

A: Peter responded that if the effluent is meeting the requirements set in the permit, that indicated that the BAF system is working and thus the biological material is alive. Jon also noted that wastewater will arrive to the facility via underground sewers and is at a higher temperature than the ambient temperature, typically wastewater during cold weather will not fall below 50 degrees Fahrenheit.

Q: Was there an issue with the cover of Gravity Thickener No. 2 (GT-2) that caused the cover to be removed and reinstalled?
A: Jon responded that no, there was no issue. Rather the cover was removed due the sequencing of the work. GT-2 was temporarily housing the temporary primary sludge pumps as the Solids Building was being constructed. Now that the new primary sludge pumps in the Solids Building are operational, the temporary primary sludge pumps and housing within GT-2 were removed. To do this work, the cover had to be removed. Now work is ongoing to install the concrete fill and mechanism in the gravity thickener, to complete this work the cover will remain off and then be installed once again after the work in the gravity thickener has been completed.

Q: How much of the City's sewer system is considered a combined system (wastewater and stormwater)?
A: Terry responded that the latest metric shows that 8% of the City's overall sewer system are combined sewers. The City is doing very well with the sewer separation program and will continue to follow through with the program. This is part of the reason the City request annual funds for sewer replacement.

Q: How many miles of old piping is there in the sewer system?
A: Terry was unsure of the exact number, but there are miles of older sewer piping still in use today. The City is working to replace sewer piping so that eventually, there are no sewers in the system that are over 100 years old. The replacement is happening at about 1% replacement per year. The City is currently working to achieve this.

The next public construction meeting will be on September 18, 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.