

On Tuesday, August 11th Halifax Regional Municipality and Halifax Water released progress information, via a media release, on the recovery of the Halifax Wastewater Treatment Facility (WWTF) and efforts to mitigate odour in the downtown. Additionally, a newsletter is being circulated to residents in the vicinity of the Dartmouth Wastewater Treatment Facility.



Efforts continue to restore the Halifax Wastewater Treatment Facility, which shut down following a flood on January 14, 2009. While work is ongoing at the Halifax plant, commissioning is still underway at the Dartmouth WWTF, and preparations are underway to begin commissioning at the Herring Cove facility.

Halifax Water, on behalf of HRM, is currently implementing an initiative to divert dry weather flow through the Halifax WWTF as quickly as possible. This diversion plan is well underway and is expected to be in place in mid September. Once in place, this plan will see dry weather flows currently being discharged directly into the harbour diverted through the Halifax WWTF, floatables screened out, and then discharged via the plant's existing outfall pipe which extends approximately one kilometre into Halifax Harbour. This measure will capture floatables and significantly reduce or eliminate odours. This work is being carried out in conjunction with the full Halifax WWTF restoration effort, and is work that would have to be undertaken as part of the restoration plan. This diversion will not impact the stated goal of having the Halifax WWTF back on-line in spring 2010.

As you may be aware, Halifax Water has retained consulting engineers CH2M Hill to investigate the cause of the flooding, to make recommendations to mitigate the possibility of future flooding, and assist in the restoration of the facility. These recommendations will be reviewed by Halifax Water and HRM in consultation with D&D Watersolutions Inc.

Halifax WWTF re-commissioning

A two phase approach to re-commissioning has been developed. During the first phase, work on which is well underway, dry weather flows of wastewater will be screened and pumped through the WWTF, as outlined above. This will entail wet well commissioning, as well as restoration of the ventilation and odour control system, and coarse and fine screening system. While the flow will bypass the process and disinfection equipment, it will be screened before it is discharged approximately one kilometer into the harbour through the existing Halifax WWTF outfall diffuser pipe with 50:1 dilution ratio. This diversion plan will significantly reduce or eliminate odours and the discharge of floatables.

Flows are scheduled to be delivered to the Halifax WWTF in mid September, from gravity-fed systems first, then followed by flows from the Pier A pumping station (located at the intersection of Barrington & Inglis Streets) and the Duffus Street pumping station.

The second phase will result in the final recovery of all processes and systems in the WWTF with the expectation that the plant will be fully functional in the spring of 2010. All damaged equipment will be repaired or replaced with funding for the recovery effort provided by the project's builder's risk insurance. While the existing pumps are being rehabilitated for short term use in phase one, five new pumps have been ordered from Germany at a cost of \$2 million. This cost, which is being covered by insurance, is the single largest cost with respect to machinery required for the full restoration. Mechanical and electrical contractors have been hired to replace or repair equipment damaged in the flood and a new motor control centre will be ordered in the near future.

All other equipment for the wet well has been ordered with an anticipated delivery between the middle and end of August. Also of note, all electrical junction boxes will be moving up to the street level area of the plant from the 20 metre deep wet well with the delivery of longer cables required to do this work expected by the end of August. The sluice gate actuator has arrived and is being assembled with the gear box.

Efforts to reduce odour in the downtown

Odour mitigation measures are in place with two ozone generators installed on July 10th adjacent to a catchbasin on the west side of Upper Water Street, just north of Cogswell Street. The ozone generators are having a positive effect overall, but their effectiveness depends on the quantity of effluent in the tunnel, wind direction, tides and temperature.

Activated carbon air filters have been installed in two other catchbasins in the same area and are being changed out as necessary to maximize their effectiveness in reducing odour. The diversion of dry weather flows through the Halifax WWTF should significantly reduce or eliminate odour in the downtown.

Dartmouth plant update

The Dartmouth wastewater collection system and wastewater treatment facility (WWTF) has been commissioning and treating flows since July 2008.

Commissioning activity continues with a focus on meeting the project specifications for odour and effluent quality, prior to achieving substantial completion. Substantial completion is the point at which the plant achieves a performance standard in conformance with the HHSP contract such that operation of the facility can be transferred from the contractor (D&D Watersolutions Inc.) to HRM/Halifax Water. Ownership of the facility will be transferred from HRM to Halifax Water within six months of substantial completion.

Recently, there has been media coverage surrounding the release of foam and odour from the vent pipes outside the plant. The foam is created through the treatment process and is essentially entrained air coming out of the treated effluent solution that periodically rises through the vent stacks. The vent stacks have also been identified as a source of odour. Through a solution recommended by consultants MetCalf and Eddy, the foam will be permanently intercepted and redirected back into the plant for further treatment. It is estimated that the work will occur in stages over the next two months. The first stage to intercept the foam was completed by the contractor on August 26 using available materials which will be replaced once the permanent materials arrive over the coming weeks. These measures are designed to ensure no foam is released from the plant and odour is greatly reduced. Perimeter odour testing will continue on a daily basis for the foreseeable future.

Halifax Water has hired the consulting firm CH2M Hill to make recommendations for changes to the Dartmouth WWTF to mitigate the possibility of flooding as a result of the incident at the Halifax WWTF. These recommendations will be reviewed and implementation plans developed on a priority basis.

Herring Cove plant update

The "dry" testing of individual components and hydro/leak testing of various tanks within the Herring Cove WWTF using clean water is ongoing. Chemicals are being ordered and the odour control unit will be tested with chemicals prior to the introduction of sewage. Depending on the outcome of these ongoing tests, introduction of clean water for further testing and then sewage is forecasted to occur in fall 2009. Once wastewater is introduced, the plant will begin the commissioning phase.

As in Dartmouth, Halifax Water has hired the consulting firm CH2M Hill to make recommendations for changes to the Herring Cove WWTF to mitigate the possibility of future flooding in the Herring Cove WWTF. These recommendations will be reviewed by Halifax Water and HRM in consultation with D&D Watersolutions Inc.

Halifax, Dartmouth and Herring Cove – WWTF differences

Although the basic treatment process is the same for the three WWTFs, there are variations in the complexities and respective elevations of the collection systems entering the WWTFs.

As part of the Halifax WWTF restoration all possible measures are being put in place to ensure another flood event does not occur. Any changes that are required in Dartmouth and Herring Cove as a result of the CH2M Hill review will also be put in place.

The key difference between the Herring Cove WWTF and Halifax WWTF is that the flow to the Herring Cove WWTF is entirely by gravity, so there is no wastewater wet well and no raw sewage pumps. The gravity system is fed by a single pump station and as an added level of precaution, can be shut down remotely from the WWTF via an interlock that has been installed to direct overflow from the pump station to the Harbour.

The Dartmouth WWTF has a shallow wet well, approximately 10 feet deep, and as an added level of precaution, is being outfitted with an interlock system as described above. The Halifax WWTF has a wet well depth of 85 feet. As part of the full restoration process, and as an added level of precaution, the Halifax WWTF is also being outfitted with the same interlock system.

Moving forward

Though the Halifax WWTF has been shut down since January 14, 2009, D&D Watersolutions Inc. (the design/build contractor) has continued to rectify deficiency items for the Halifax WWTF, commission the Dartmouth WWTF and complete construction of the Herring Cove WWTF.

Overall, the five-year, \$333M Harbour Solutions Project remains within budget and approximately one year behind schedule. HRM and Halifax Water continue to work closely with its prime contractors and insurers to complete all three wastewater facilities in accordance with contract specifications as soon as possible.

It remains the intention of Halifax Water and HRM to see the Halifax WWTF back in full operation in the spring of 2010, that any problems that led to the sequence of events that caused the flooding are addressed, and that the water quality with Halifax Harbour is once again restored to levels enjoyed last year by residents.

For more information

Up-to-date information about the Halifax WWTF along with other aspects of the Harbour Solutions project are posted on the HRM website at <http://halifax.ca/HWWTF/index.html> where newsletters, diagrams, photos, background materials, and answers to frequently asked questions can be found.