Meeting Minutes

Meeting:	Pre-Consultation Meeting with MECP
Project:	Schedule “C” Municipal Class Environmental Assessment for the Havelock Wastewater Treatment Plant
Date and Time:	June 4, 2021 11:00 am – 12:00 pm
Location:	Microsoft Teams
Attendees:	Jacqueline Fuller, MECP Rebecca Troan, MECP Aziz Ahmed, MECP Wayne Simpson, MECP Sarah Baxter, MECP Victor Castro, MECP Amanda Nowicki, MECP Jon Orpana, MECP Gerard Van Arkel, Golder Christopher Davidson, Golder Natalie Colantonio, OCWA Amber Coupland, OCWA Wesley Henneberry, OCWA Brad Robinson, OCWA Mina Yousif, CIMA+ Erin Longworth, CIMA+ Rinita Banerjee, CIMA+
Purpose:	Pre-consultation meeting with the Ministry of the Environment, Conservation and Parks (MECP) to discuss the Havelock WWTP Class Environmental Assessment (EA) Study

Note: Please advise author immediately of any errors or omissions.

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Discussion Topics	Action By
1. Introductions	
• Each team member introduced themselves	Info
2. Project Background	
• M. Yousif presented the Havelock WWTP site plan and provided a description of the major processes in the facility. The treatment plant was built in 2009 and currently has a rated capacity of 1,200 m^3/day.	Info
• M. Yousif discussed the concentration objectives/limits and loading limits related to effluent cBOD, TSS, TP, Total Ammonia Nitrogen, E. coli and pH as defined in the current Certificate of Approval (CofA) for the Havelock WWTP. He also presented the average concentrations of various parameters in the influent and effluent, as well as the effluent loading in the past three (3) years. • M. Yousif presented the average annual raw wastewater flowrate, max month raw wastewater flowrate and average annual effluent flowrate from the past three (3) years. High I/I has been identified as an issue in the past. • M. Yousif discussed the projected growth (per the Functional Servicing Strategy) in the Havelock South Development Area. Based on the estimates in the study, the average daily flow is expected to be 175% the rated capacity of the WWTP following the completion of all development phases. W. Simpson asked to confirm if the growth is anticipated in the rural areas or in urban areas, and if there will be any change to servicing. M. Yousif confirmed that growth will be in the urban areas and will connect to the existing servicing. Rural areas are serviced by septage tanks and no growth or change in servicing is anticipated for those areas. • The Havelock WWTP is currently running near, and sometimes beyond, its rated capacity, however it continues to meet the objectives of the CofA. V. Castro asked if there have been any bypassing issues at the plant. A. Coupland confirmed that they have never bypassed. M. Yousif mentioned that there is opportunity to use the lagoons for flow equalization. This would reduce the peak flows and could lead to re-rating the plant capacity. The lagoons would have to be lined to prevent any potential leakage. • M. Yousif discussed the main objectives of the Havelock Class EA study including providing flexibility to OCWA and the Township in addressing the needs of the community, providing operational flexibility and maximizing use of existing infrastructure. The EA will also include public agency and Indigenous community consultation.	Info

Discussion Topics	Action By
• W. Simpson asked if the Township has been doing anything to reduce the I/I flow volumes. M. Yousif mentioned that investigation had been done in the past and flows are reducing. It was noted that the influent wastewater flows have decreased from an average raw wastewater flow of 1,221 m^3/day in 2018 to an average of 762 m^3/day in 2020. • W. Simpson mentioned that it looks like the flows to the WWTP will be increasing due to population growth, but effluent loadings will be reduced/maintained. He enquired about the upgrades anticipated and whether we will consider new SBRs or repurpose tankage. M. Yousif clarified that we would consider all alternatives including adding new tankage and retrofitting SBRs with other technologies during this Class EA study. • M. Yousif requested clarification that this Class EA will require completion of an assimilative capacity study. V. Castro confirmed that for an expanded effluent discharge, a study of the receiving water will be required.	
3. Receiving Water Assessment	
• C. Davidson provided an overview of the previous assimilative capacity study conducted in 2006. He mentioned that no historic flow information for Plato Creek was available. Water quality data for Plato Creek was obtained from downstream of the Havelock WWTP between 1972 and 1998. Plato Creek is designated as a Policy 2 water body. • C. Davidson discussed the high-level approach for conducting the receiving water assessment including defining ambient conditions, effluent conditions and selecting environmental scenarios to assess the assimilative capacity of Plato Creek under the range of conditions. • G. Van Arkel asked if the MECP is looking to maintain the total phosphorus loading. V. Castro mentioned that the TP concentration and loading limits are already quite low. It was discussed that if loadings are to be maintained, if the flow is, for example, doubled, then the concentration limits would need to be decreased by half to maintain loadings. It was noted that the plant performs very well, achieving TP concentrations and loadings well below the current effluent limits. Discussions will be required once the receiving water assessment is conducted to review options for TP concentration and loading limits and ensure that they reflect the Policy 2 status of the receiving water and are in line with Bay of Quinte targets (as the ultimate receiving water body). • V. Castro mentioned that it would not be required to redo the assimilative capacity study, instead to build on the original ACS	Info

Discussion Topics		Action By
	conducted in 2006 and focus on the effluent limits for an expanded discharge. • W. Simpson asked how the discharge from Havelock WWTP is connected to Plato Creek. B. Robinson mentioned that effluent is conveyed through a 12” diameter concrete sewer pipe to the discharge point approximately 900 m to the east of the lagoons near the point where Plato Creek flows into the Plato Creek Wetland complex. • M. Yousif asked each person in the meeting for comments individually. V. Castro mentioned that another meeting should be scheduled later in the project to discuss the effluent limits. • E. Longworth asked to clarify that the MECP is okay with using the old data in the existing assimilative capacity study and building upon the existing information. V. Castro mentioned that CIMA/Golder should provide in writing the existing historical data available and what is proposed for the study this summer in terms of sampling, monitoring etc. to verify that the approach is acceptable to the MECP. • J. Orpana asked to confirm if more septage is anticipated with the population growth. M. Yousif confirmed that septage volumes will remain the same as the growth areas are within the WWTP service area.	
4. Next Steps		
	• Issue Class EA Notice of Commencement • Background information review • Complete receiving water assessment • Consult with MECP regarding effluent criteria • Evaluate alternative solutions and designs	CIMA+

Rinita Banerjee, Project Engineer

Mina Yousif, Project Manager

Schedule “C” Municipal Class Environmental Assessment for the Havelock Wastewater Treatment Plant

Meeting with the Ministry of Environment, Conservation and Parks

June 4, 2021

Agenda

1. Introductions
2. Project Background
3. Receiving Water Assessment
    - Previous Assimilative Capacity Study
    - High Level Approach
    - Preliminary Background Data Review
4. Next Steps

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Introductions

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Project Background

Havelock WWTP

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719 Old Norwood Road

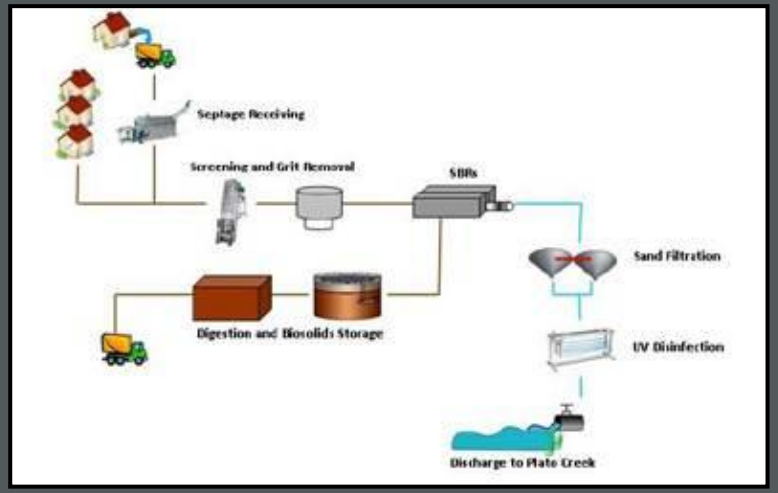
ECA 7399-7UTUGW

Mechanical plant (SBR) constructed in 2009

Overall Site Plan


Google

Havelock WWTP



Rated Capacity: 1,200 m^3/d

Year of Construction: 2009

Plant Processes

- Raw Sewage Pumping Station
- Septage and Hauled Waste Receiving Facility
- Headworks
  - Fine screening
  - Grit removal
- Sequencing Batch Reactor (SBR) System: 2 reactors
- Equalization Tank
- 3 Up-flow Sand Filter Modules
- Chemical Addition
  - Alum for phosphorus removal
- UV Disinfection
- Sludge Treatment
  - 2 Stage Aerobic Sludge Digester
  - 1 Biosolids Holding Tank

ECA Objectives and Limits

Effluent Parameter	Concentration Objective	Concentration Limit	Loading Limit
$CBOD_5$	6.6 mg/L	10 mg/L	12 kg/d
TSS	6.6 mg/L	10 mg/L	12 kg/d
TP	0.1 mg/L (Jul - Oct) 0.2 mg/L (Nov - Jun)	0.14 mg/L (Jul - Oct) 0.3 mg/L (Nov - Jun)	0.17 kg/d (Jul - Oct) 0.36 kg/d (Nov - Jun)
Total Ammonia Nitrogen	2.0 mg/L (May - Oct) 3.3 mg/L (Nov - Apr)	3 mg/L (May - Oct) 5 mg/L (Nov - Apr)	n/a
Acute Lethality to Rainbow Trout and Daphnia magna		Non-acutely lethal	n/a
E. Coli	133 counts/100 mL	200 counts/100 mL	n/a
pH	6.0 – 9.5	6.0 – 9.5	n/a

Historic Flows

Year	Average Annual Raw Flow (m^3/d)	Max Month Raw Flow (m^3/d)	Average Annual Effluent Flow (m^3/d)
2017	957	2,155	911
2018	1,221	2,400	1,179
2019	869	1,552	808

Annual performance for last three years

Parameter	2017	2018	2019
INFLUENT (Average Concentration)			
BOD5 (mg/L)	418	226	140
TSS (mg/L)	778	474	193
TP (mg/L)	9.92	6.92	2.13
TKN (mg/L)	41.45	36.64	22.14
E. Coli			
EFFLUENT (Average Concentration)			
cBOD5 (mg/L)	2.27	2.38	2.55
TSS (mg/L)	2.02	2.40	2.77
TAN (mg/L)			
(May – Oct)	0.24	0.10	0.21
(Nov – Apr)	0.87	0.32	0.10
TP (mg/L)			
(July – Oct)	0.08	0.07	0.08
(Nov – June)	0.09	0.06	0.09
E. Coli (cfu/100mL)	2.87	2.52	2.60

Parameter	2017	2018	2019
EFFLUENT LOADING (Average)			
cBOD5 (kg/d)	2.07	2.84	2.14
TSS (kg/d)	1.84	2.74	2.18
TP (kg/d)			
(July – Oct)	0.07	0.07	0.04
(Nov – June)	0.08	0.07	0.09

Projected Growth

- Projected growth (per FSS) in Havelock South Development Area include:
  - 3 Phases of development for residential homes
  - Peterborough Housing Development
  - Havelock Long-Term Care (HLTC) Facility

Parameter	Average Daily Flow (m^3/d)	Rated Capacity WTP (m^3/d)	% Capacity
Existing Flows (to date)	1,314	1,200	110%
Existing + Phase 1 + Peterborough Housing Dev.	1,407	1,200	117%
Existing + Phase 1 + Peterborough Housing Dev. + Phase 2	1,499	1,200	125%
Existing + Phase 1 + Peterborough Housing Dev. + Phase 2 + HLTC	1,634	1,200	136%
Existing + All Development	2,098	1,200	175%

Project Objectives – Schedule C Class EA

- Provide flexibility to OCWA and the Township in addressing current needs to expand the Havelock WWTP to accommodate future growth
  - Havelock WWTP must be able to handle the high flows and lower loadings if I&I persists
  - Havelock WWTP must be able to operate efficiently under lower flows and higher loadings if I&I reduces
- Maximize use of existing infrastructure to minimize upgrade costs
  - Potential to utilize one of the lagoons for flow equalization during high flow periods?
  - Consider re-rating the capacity of the existing plant to reduce capital upgrades
- Effective public, agency and Indigenous consultation
- Selection of a treatment technology that is operable, maintainable and reliable

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Receiving Water Assessment

Previous Assimilative Capacity Study

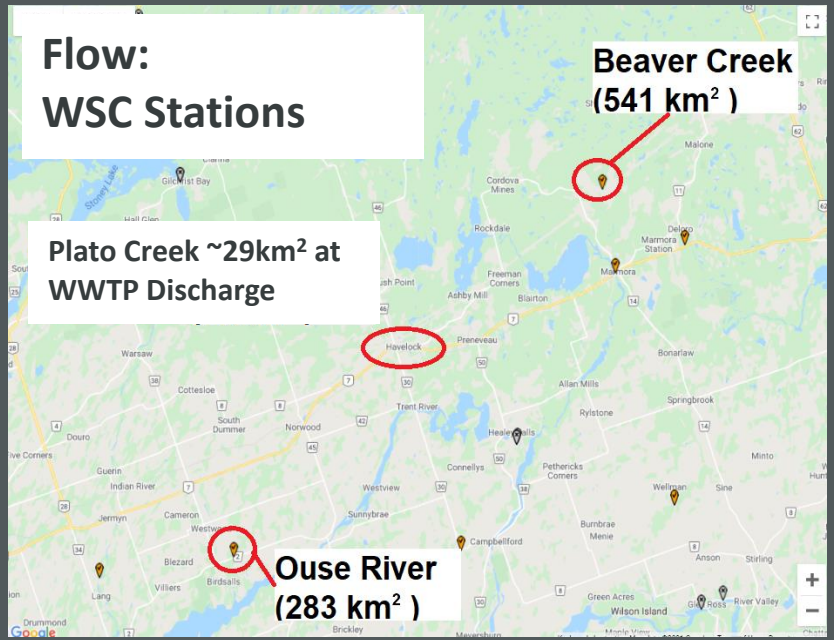
- Conducted in 2006 as part of a Class EA Addendum(Genivar, 2008)
- No historic flow information for Plato Creek
  - Pro-rated flows from the Ouse River, in a neighbouring watershed with similar landuse, geography and topography
  - Utilized Ouse River flow data from 1967 to 2005
- Historic water quality data in Plato Creek was obtained from PWQMN Station #17002107202, downstream of the existing Havelock WWTP
  - Water samples from this station were collected from 1972 to 1998
  - Since the Havelock WWTP discharged seasonally at that time, flows were summarized into non-discharge and discharge periods
  - Non-discharge period was used to classify Plato Creek against the PWQO Blue Book

Previous Assimilative Capacity Study

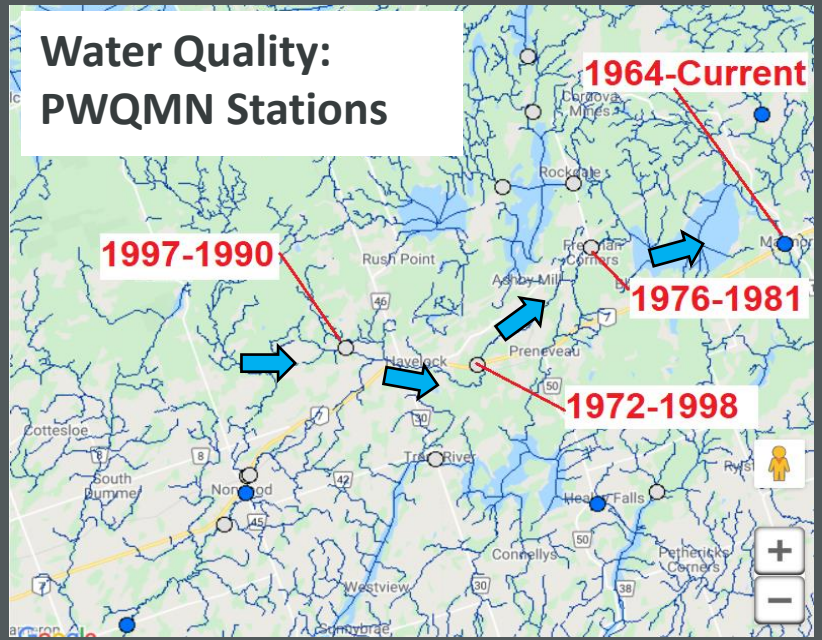
- Conclusions:
  - Plato Creek is designated a Policy 2 water body with respect to TP, E.coli, copper and lead
  - Moving to a continuous discharge of 1,200 m^3/d (from a seasonal discharge scheme) would meet the growth targets of the community, potentially protect the downstream receiving water from extreme low flow levels and not cause erosion or sediment scour in the mixing zone
  - Parameter limits to meet the Policy 2 and Quinte RAP requirements were determined to be:
    - BOD5: 10 mg/L
    - E.coli: 200/100 mL
    - TP: dry season (July-Oct) 0.14 mg/L, wet season (Nov-June) 0.3 mg/L, annual loading of 108 kg/year
    - TAN: dry season (July-Oct) 3 mg/L, wet season (Nov-June) 5 mg/L

Preliminary Background Data Review

- Additional flow data available (WSC)



- No new water quality data (PWQMN or Crowe Valley CA)



Receiving Water Assessment High Level Approach

- Define ambient conditions
  - Physical characteristics
  - Water quality parameters (BOD_5, TSS, TP, TAN, pH, E.coli)
- Define effluent conditions
  - Flow rates
  - Water quality parameters (BOD_5, TSS, TP, TAN, pH, E.coli)
- Select effluent and background environment scenarios and assess the assimilative capacity of Plato Creek under the range of conditions
  - Dissolved oxygen and BOD_5, using the Streeter-Phelps model
  - Unionized ammonia, total phosphorus, and pH, using a mass balance equation
  - Recommend monthly discharge concentration limits for above parameters

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Next Steps

Next Steps

- Issue Class EA Notice of Commencement
- Background information review
- Complete receiving water assessment
- Consult with MECP regarding effluent criteria
- Evaluate alternative solutions and designs