



Whitby Water Supply Plant Expansion

Municipal Class EA Addendum

Public Information Centre #2



AECOM

March 2, 2017

Port Whitby Marina, Avalon Lounge

Why are we here?

Durham Region is planning for an expansion to the Whitby Water Supply Plant (WSP).

The purpose of this Open House is to present information on:

- PIC #1 summary and comments to date;
- Updated WSP expansion design concept including treatment process;
- WSP building layouts and architectural renderings;
- Other key project elements; and
- Project schedule/next steps.



Your concerns are important to us and we value your input in the decision making process. Feel free to talk to the Project team or take a comment form and a pen. We encourage you to ask questions and provide feedback.

Why This Study? Why Now?

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Water Supply Plant History

- The original WSP was constructed in the early 20th century. The stone shell of the original pump house is located just west of the current Whitby WSP.
- The current Whitby WSP was commissioned in the mid 1970's to replace the original WSP. It provides treated water to the interconnected water distribution system that services Pickering, Ajax, Whitby, Oshawa and Courtice. Both the Ajax WSP and the Oshawa WSP also provide treated water to the interconnected water distribution system.



Old Stone Pump House



Looking east along Waterfront Trail Boardwalk



Looking north east from Waterfront Trail Boardwalk

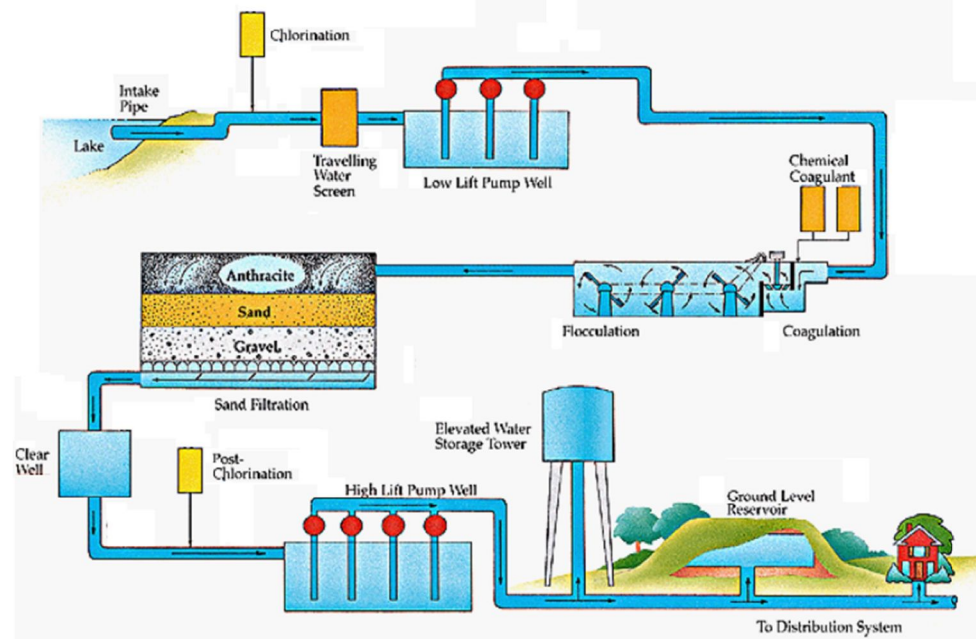


Looking west at Whitby WSP from Heydenshore
Kiwanis Park

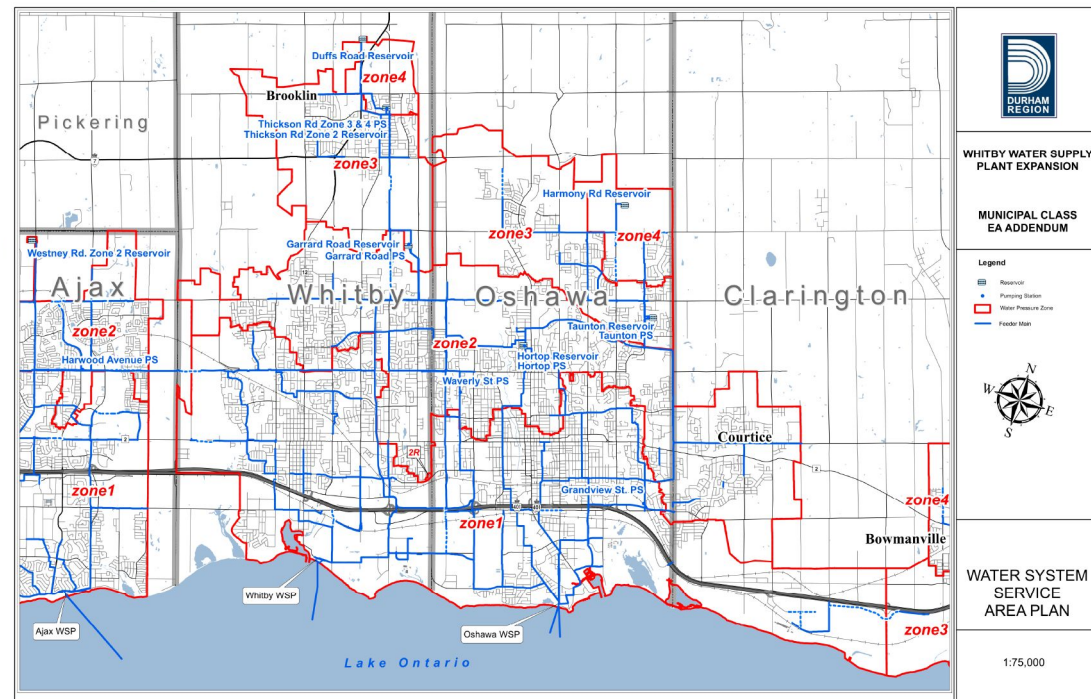
How the WSP Works and WSP Service Area

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Process Flow Diagram



Water System Service Area Plan



Why This Study? Why Now?

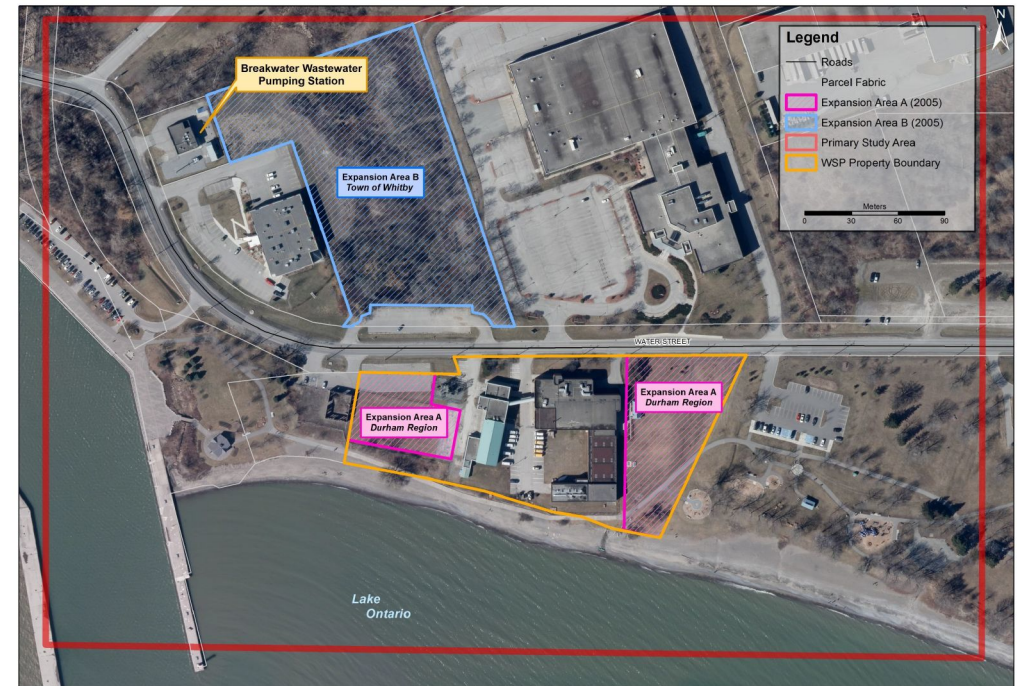
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2005 Class EA

- The 2005 Whitby WSP Environmental Study Report (ESR) evaluated expansion on site (Expansion Area A) and off site (Expansion Area B- north side of Water Street).
- Lower water demands and constructability issues on Expansion Area B, warrant looking at optimizing all of the Region's water supply plant assets, rather than building a Whitby WSP on the north side of Water Street. The Region is looking at expanding the existing WSP by using available Expansion Area A vacant lands owned by the Region.

Project Objectives

- Meet Durham Region water supply goals (provide sustainable and cost-effective delivery of water to meet existing and future requirements), and design the project having regard to Town of Whitby Waterfront land use planning objectives.



Project Team Organization

Region of Durham

- Works Department
- Planning
- AECOM

Town of Whitby

- Public Works
- Parks
- Planning

Study Schedule and Planning Process

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* Dates noted above are subject to change.

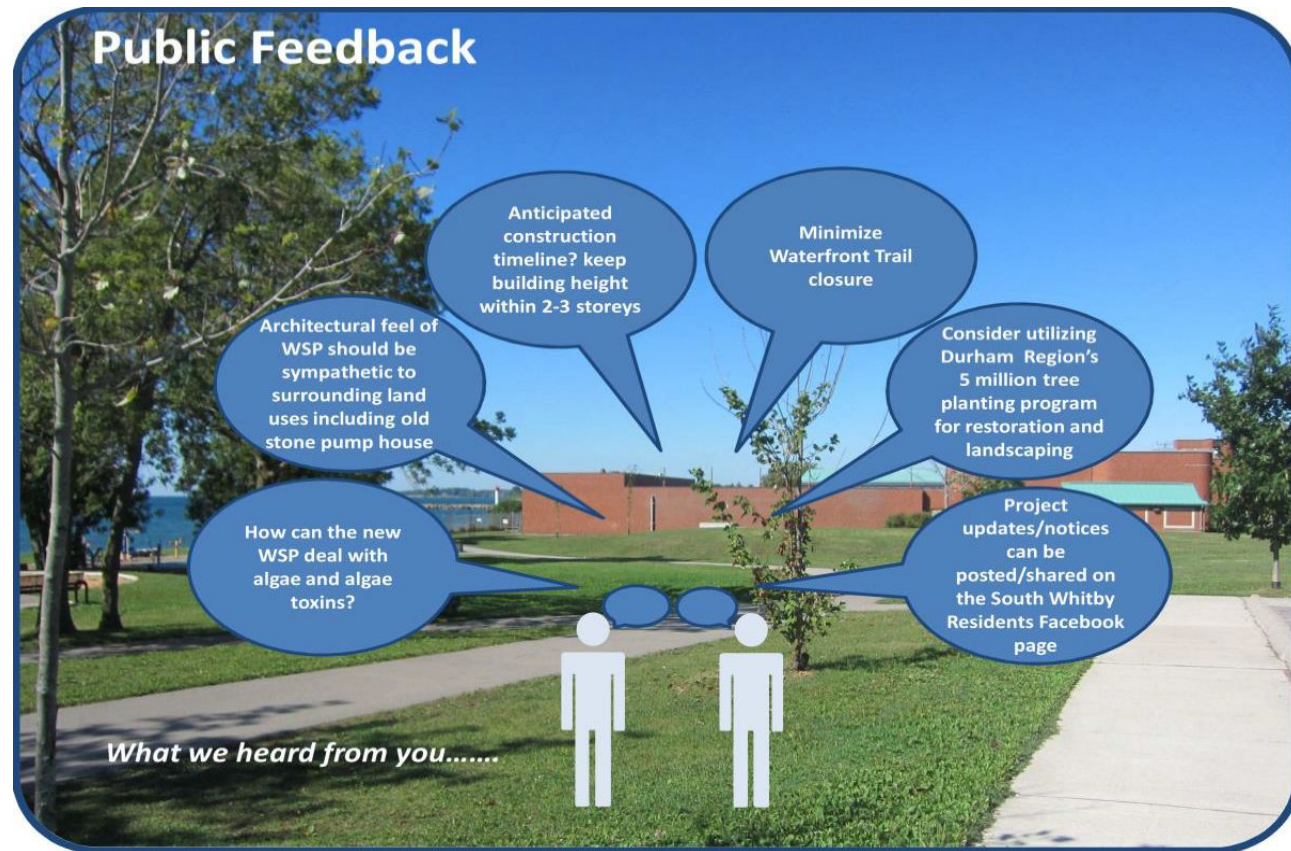
PIC #1 Summary and Comments

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- PIC #1 held February 25th 2016;
- Seven people signed into the PIC;
- Attendees indicated general support for the project and noted that the study area will be facing significant development in the near future.



PIC #1



Project Description – WSP Expansion Components

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Legend

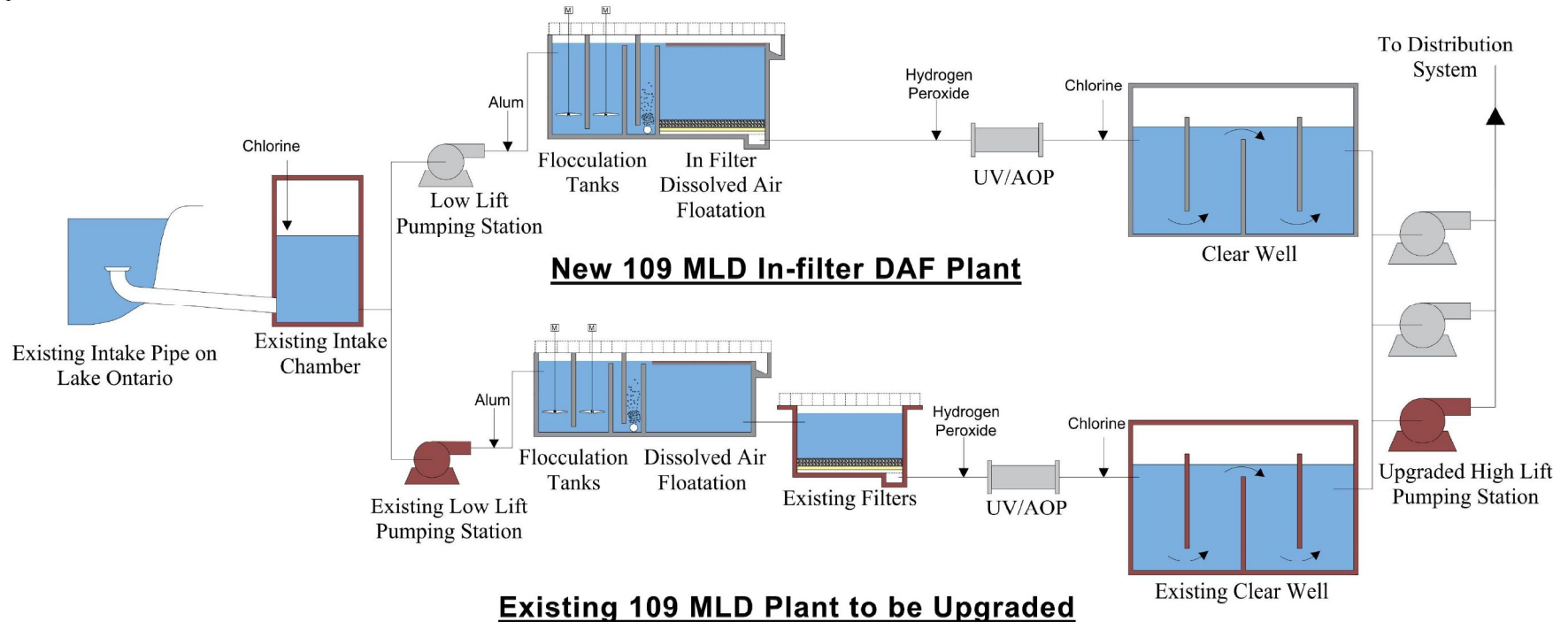
- Primary Study Area
- Property Boundary
- 1 Possible relocation of transformer substation
- 2 Demolish existing facilities building to accommodate new West Side Treatment Plant (remove old reservoir)
- 3 New Administration Building
- 4 Expansion east side - additional treatment capacity or upgrades
- 5 Expansion west side - new West Side Treatment Plant
- 6 Linear works on Water Street - process water forcemain or gravity sewer to Breakwater SSPS and new watermain
- 7 Possible Relocation of Waterfront Trail and new access to playground to provide buffer and landscaping for new administration building
- 8 Temporary closure of Waterfront Trail (approximately 2 years) to allow for construction followed by reinstatement to better condition
- 9 Enhancement of North side parking lot for temporary construction staging and future expanded parking (WSP and Public)

The proposed 109 Million Litres per Day (MLD) capacity expansion will be able to meet the projected 20 year water demands for the service area

Updated WSP Expansion Design Concept

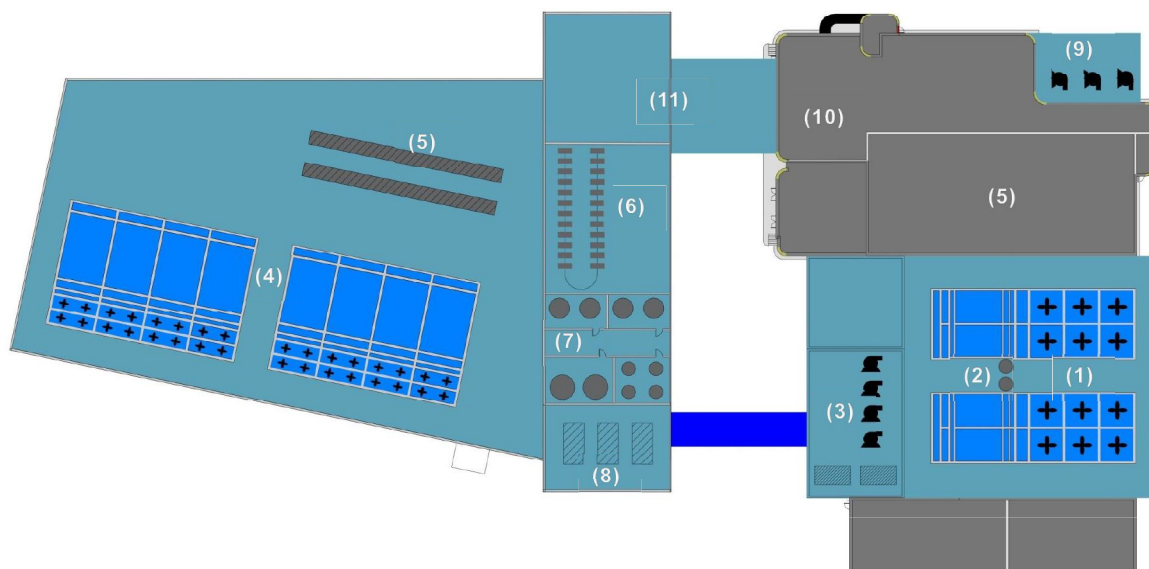
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- Water treatment technologies selection –Dissolved Air Flootation (DAF) with filtration followed by Ultraviolet (UV) Disinfection with seasonal UV Advanced Oxidation Process (UVAOP).
- Reuse/repurpose existing building where possible.
- Relocate Industrial Raw Water Supply Pumping Station.
- Project Cost Estimate - \$140M.



WSP Process Areas Conceptual Building Layouts

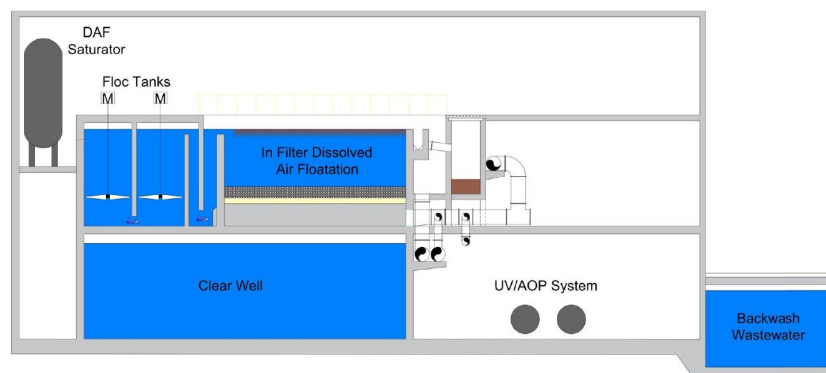
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- (1) Repurposed Existing Floc Tanks (Existing Plant)
- (2) New Dissolved Air Floatation (Existing Plant)
- (3) New Low Lift Pumping Station
- (4) New In Filter Dissolved Air Floatation
- (5) New UV/AOP Systems (Entire Facility)
- (6) New Chlorine Building (Entire Facility)
- (7) New Chemicals Building (Entire Facility)
- (8) New Residual Management Building
- (9) High Lift Pumping Station Extension
- (10) Repurposed Administration Area (Existing Plant)
- (11) New Administration Area



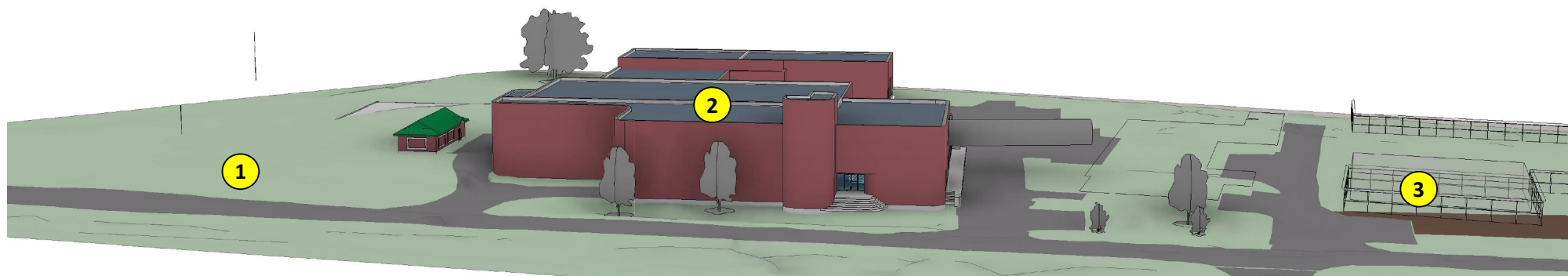
Cross Section of the New Process Building for 109 ML/d Expansion



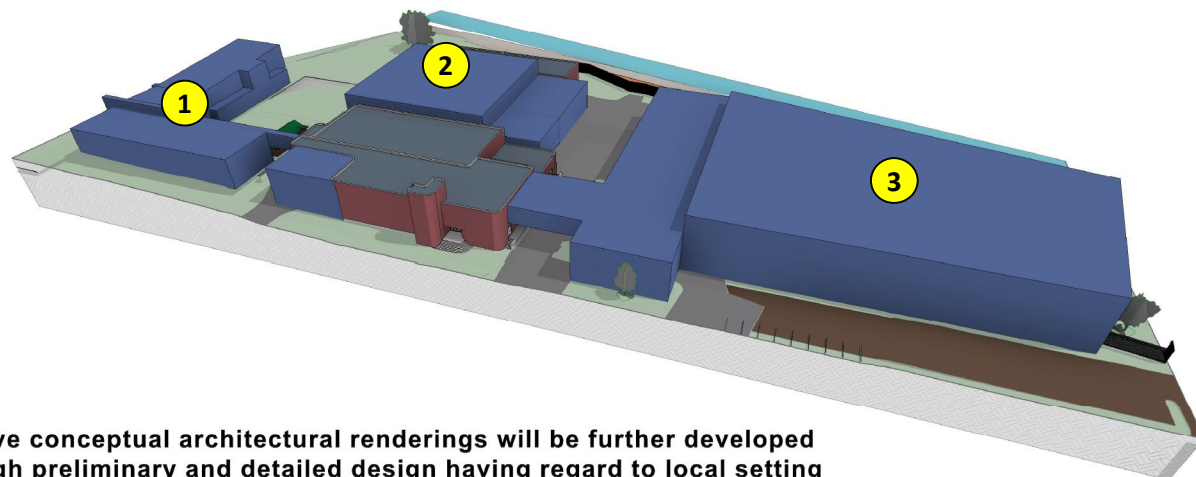
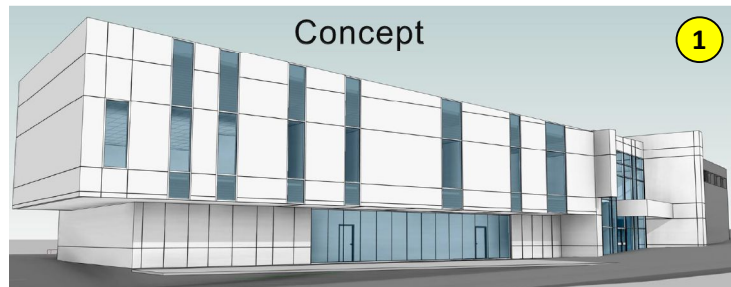
Plant Operations Building, WSP Plant 1 and Plant 2 Building Layouts and Architectural Renderings

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Existing Conditions



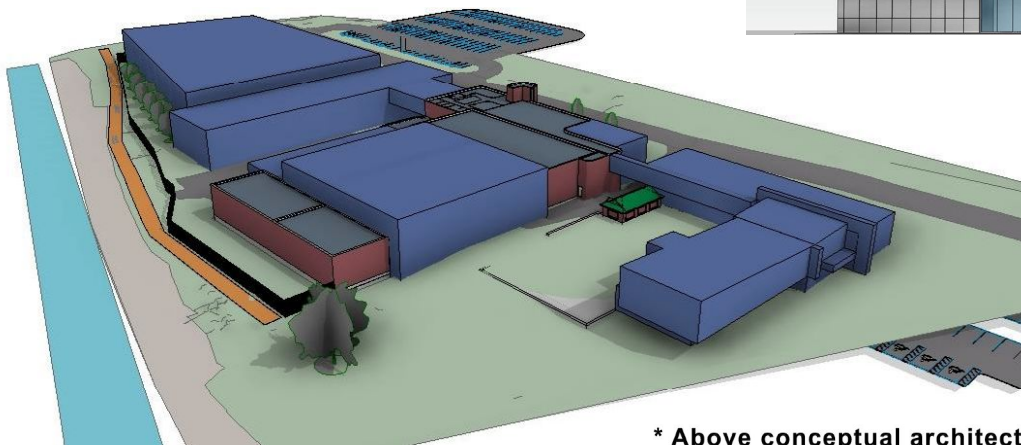
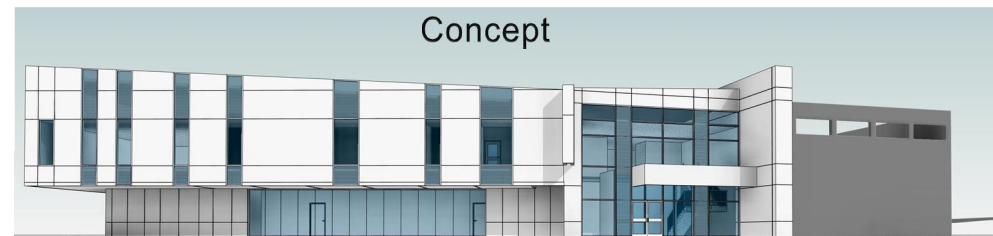
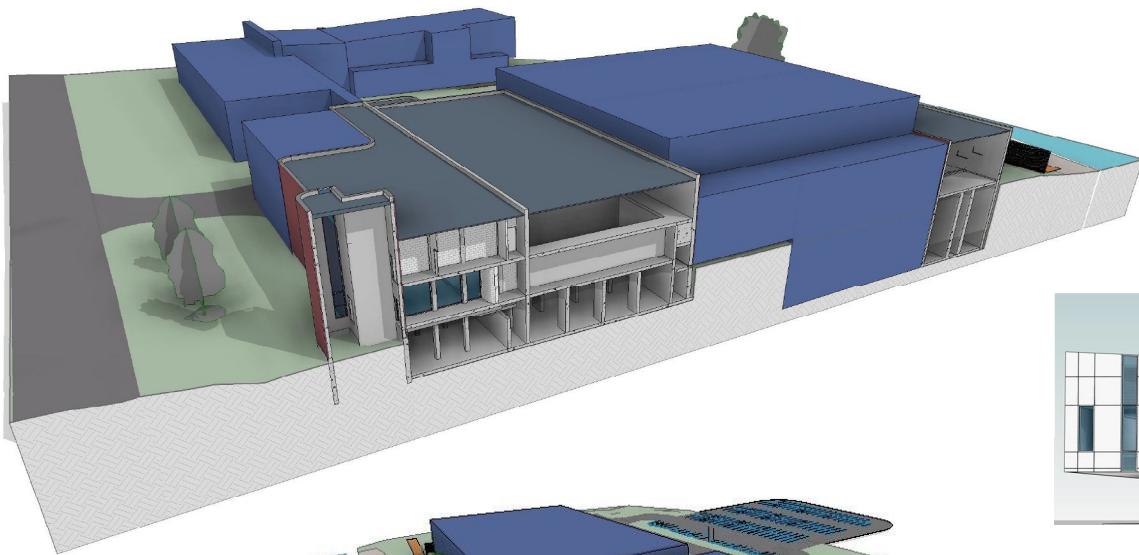
Proposed Conditions



- ① Plant Operations Building
- ② Existing Plant 1 Upgrades
- ③ New West Side Plant 2

* Above conceptual architectural renderings will be further developed through preliminary and detailed design having regard to local setting

Proposed Conditions

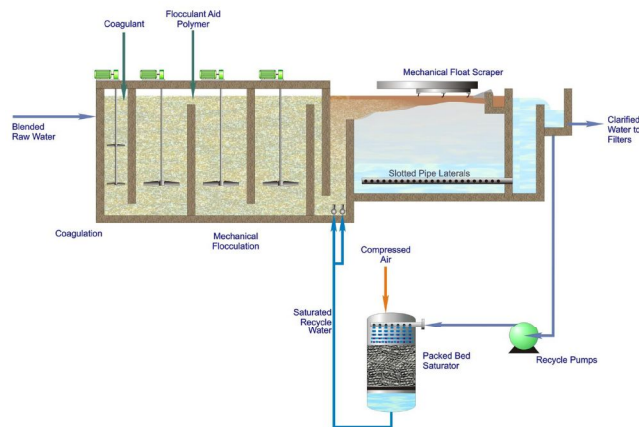


* Above conceptual architectural renderings will be further developed through preliminary and detailed design having regard to local setting

Future Raw Water Quality Considerations

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- Climate change can bring more uncertainty regarding the occurrence of algal blooms in Lake Ontario which can plug traditional media filters and cause increased levels of algal toxins.
- Dissolved air floatation removes algae to protect media filters and reduce the release of algal toxins within the treatment plant and finished water.
- UV/AOP further provides additional protection by increasing removal of algal toxins and other emerging contaminants from finished water.



Dissolved Air Flotation

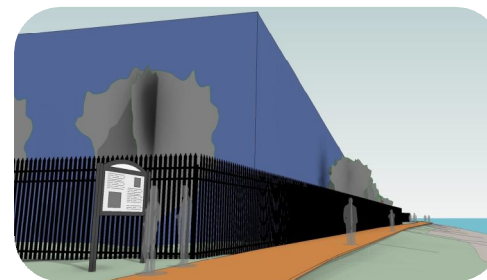
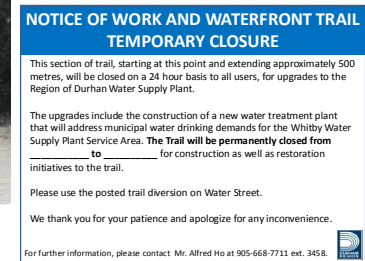


UV / AOP

Other Key Project Elements

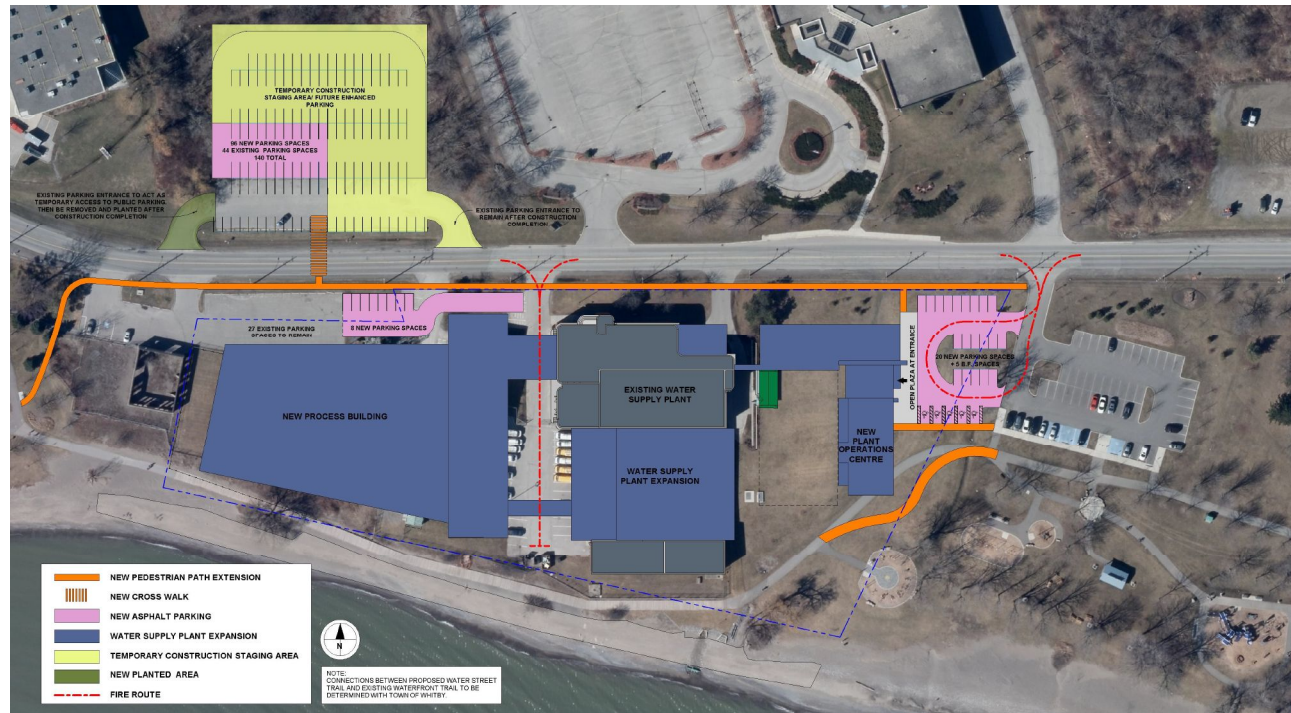
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- Waterfront Trail relocation to Water Street and within Kiwanis Heydenshore Park-Waterfront Trail will be reinstated once construction is complete.
- New wastewater main on Water Street from WSP to Breakwater Pumping Station and watermain (Co-ordination with future Town of Whitby Water Street Improvements EA Addendum).
- Interpretative Signage to tell the Story (historical development – first municipal water system and current WSP).



- WSP and Community Parking Strategies

- Overall area parking needs confirmed with Town of Whitby;
- Proposed expansion of existing parking lot on north side of Water Street to be used for:
 - Construction Staging (2019 – 2022)
 - WSP Employee and Public Parking (During and After Construction); and
- Integration of WSP Plant Operations Building Parking with Heydenshore Kiwanis Park Parking Lot (south side of Water Street).



EA Commitment Highlights

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The Construction Team will Ensure:

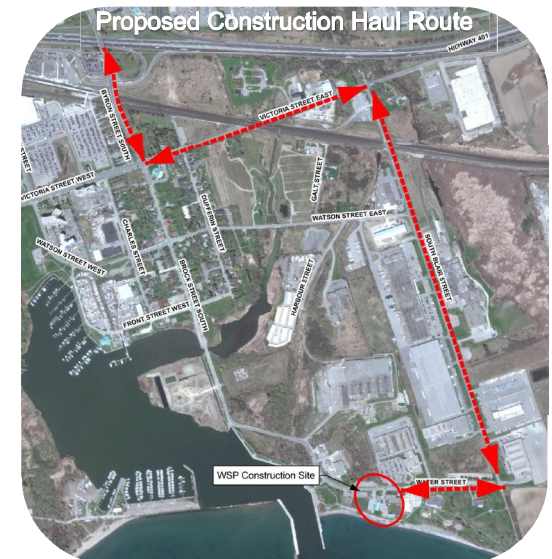
- **Natural Environment**

- Work with CLOCA to address potential impacts to wetlands on north side of Water Street
- All regulatory requirements to protect the environment are followed
- A tree protection and replanting plan is prepared by an arborist
- Construction occurs outside of the nesting bird window



- **Social Environment**

- Traffic management plan will be developed to minimize disruption during construction. All construction traffic will use designated haul routes (see map)
- Building design and landscaping will consider waterfront setting and uses
- Access disruption to Waterfront Trail will be addressed by building a new trail around the WSP along Water Street (see previous panel). The new trail will link east and west side parks and will remain as an alternate trail, in the event that the Waterfront Trail boardwalk is closed (e.g. winter ice)
- Access to existing park amenities, businesses, institutions and commercial areas are maintained (where possible) during and after construction



- **Restoration**

- All disturbed areas, including Waterfront Trail boardwalk, will be restored

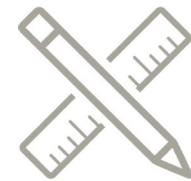
Spring
2017

- Review comments received
- File EA Addendum Report for 30-day public review period



2017-2018

- Pilot testing for treatment process
- Preliminary and Detailed Design



2019-2022*

- Tender
- Construction
- Post construction monitoring



* Dates noted above are subject to change

Thank You For Attending

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We appreciate the time you have taken to learn more about the project and we value your input. Stay involved and up-to-date as the project progresses:

- Join our mailing list: leave us an email or mailing address
- Visit the project website: www.durham.ca/Construction,
Design and Environmental Assessment Projects
(CDEAP)
- Contact us with additional comments or questions at any time:

**Mr. Alfred Ho, P. Eng.
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*Kindly drop off your completed Comment Form in the Comment box before you leave or mail it to us.